Fifth EMPHNET Regional Conference
Marrakech, Morocco. December 6 - 8, 2016
Regional Contributions to
Global Health Development
# TABLE OF CONTENTS

- **06** Introduction
- **08** Recognition letters
- **14** Pre-conference workshops
- **18** Roundtable discussions
- **22** Abbreviations
- **24** Conference program and agenda
- **28** Oral abstract presentations
- **86** Poster abstract presentations
Introduction

The Eastern Mediterranean Public Health Network (EMPHNET) is holding its Fifth Regional Conference with the goal of presenting public health issues that are challenging counties in the Eastern Mediterranean Region (EMR).

Taking place in Marrakech, Morocco, EMPHNET’s Fifth Regional Conference presents field epidemiologists and public health professionals from across the region and around the world with an opportunity to share their experiences in dealing with critical issues at the forefront of global health development. The conference presents an important platform to showcase the work of field epidemiologists and public health professionals working to address public health problems currently challenging the region.

In a nutshell, the conference contributes to global health development by presenting public health issues from countries around the region in an attempt to come up with an understanding of these issues and pertinent solutions. With a global focus, the three-day program will include sessions on regional and global public health issues, panel discussions, and round-table meetings, as well as oral and poster presentations by Field Epidemiology Training Program (FETP) graduates and residents from the region.

The conference theme “Regional Contributions to Global Health Development” allows participants to determine involvements of countries in the region and the level of effort undertaken to contribute to securing global health. The conference highlights a variety of issues and challenges that influence health security at the national level, hence underlining the regional role in contributing to global health development. In addition, the conference will allow attendees to draw conclusions on involvement of the region in public health, countries’ contribution to global health, actions taken to leverage public health in the region, support provided to advance public health, involvement of FETPs in scientific investigation, and much more.

Conference sessions will present challenges, strategies, and innovations relevant to disease outbreaks, emerging and re-emerging infections, surveillance systems, public health threats in mass gatherings, emergency response, non-communicable diseases and much more.

The conference will hopefully offer opportunities for forward thinking, where efforts can be mobilized to strengthen collaboration and benefits realized for supporting new public health initiatives.
Dear Conference Participants,

On behalf of the Moroccan Ministry of Health, I would like to welcome you all to EMPHNET’s Fifth Regional Conference. We are honored and privileged to host this conference in Morocco.

Carrying the theme “Regional Contributions to Global Health Development”, the conference will address important public health issues that influence global health development. The conference brings contributions to global health by exploring solutions to challenging conditions that predominate in our region. We consider our gathering at this conference an important encounter as we struggle to respond to the increasing health needs of our populations, who are unfortunately subject to the adversities of conflict and oppositions.

The conference presents us with numerous attempts undertaken to investigate challenging public health situations and conditions. Further, the diversity of sessions and roundtables at the conference bring us a wealth of information that will allow us to examine our role in global health development.

I am confident that the conference will offer us a valuable opportunity for exchanging thoughts and insights on the pressing issues affecting public health in our region, thus allowing us to reflect positively on our future efforts. Therefore, I am hoping for the conference to leave us with a vision for furthering attempts to collaborate in enhancing public health in our region to leverage global health development and security.

I hope you find the conference informative and beneficial.

Wishing you all a pleasant stay in Marrakech.

Sincerely,

Prof. Abdurrahman Maaroufi
Director of Epidemiology and Disease Control
Ministry of Health, Morocco
Dear Colleagues,

It is an honour for me to address some words to the participants in the Fifth Eastern Mediterranean Public Health Network (EMPHNET) Regional Conference and the second MediPIET Annual Scientific Conference.

Both networks, EMPHNET and MediPIET have the chance to present the works of the scientists belonging to Mediterranean, Middle East, Balkans and Black Sea regions at the same place and moment. This unique opportunity provides all of us with the possibility to learn from each other and establish links among us. Knowing “who is who” is crucial to request the most appropriate aid when a delicate public health decision has to be taken with solvency and in due time.

The joint day when EMPHNET and MediPIET conferences will celebrate joint scientific sessions will allow you to meet with your colleagues from different countries and appreciate their capacities and works.

EMPHINET and MediPIET Conferences will present more than 200 abstracts that will show the quality of the mentioned regions in the epidemiology domain.

All countries involved in EMPHNET and MediPIET pursue the same goal: to establish a regional epidemiology workforce which can understand and collaborate with each other, reinforcing the capacity of the institutions involved. Therefore, this joint day provides the opportunity to set up a continuous dialogue among us, stimulating the necessary common initiatives to move forward providing our technical and scientific work with the highest international standards of quality.

On behalf of the MediPIET, I would like to congratulate all authors for the work done and wish them all the success.

Sincerely Yours,

José Jaime de Domingo Angulo
MediPIET Team Leader
Consortium FIIAPP – IPH Carlos III
Dear Colleagues,

It is with great pleasure that I welcome you all to EMPHNET’s Fifth Regional Conference, where we gather to exchange knowledge and experience that will get us inspired to do more.

On behalf of EMPHNET, I thank you all for taking the time to join us in sharing your experience and knowledge. Our success in previous conferences has been well established and we depend on you all to help us maintain that momentum.

We have chosen to have our Fifth Regional Conference under the theme Regional Contributions to Global Health Development, as we wanted to present the role played by Eastern Mediterranean countries in advancing public health at the global arena. Our desire was to elaborate and expand on the involvement of our region in making a difference. In doing that, we are hoping to highlight potential and detect areas that need strengthening and support in order to impact global health. We wanted to provide reassurance to the global community and showcase the efforts of countries in the Eastern Mediterranean Region in depicting strong commitment and dedication to securing global health. We are pleased to have you all share with us these premises.

Although we gather in Marrakech as different actors, each with different roles and responsibilities, we all share one mission: “Securing Global Health”. We are here to share experience, and we come together in pursuit of collaboration and togetherness. We all share a determined interest in public health development and a desire to contribute to public health development in the region and the globe. We come together to observe an assorted selection of the best applied epidemiology work conducted in the region. The conference will allow us to acquire a sense of the challenges that are impeding public health development and threatening people’s health.

As we engage in the conference activities and the different presentations, we will gain insight on many factors, viewpoints and solutions that will allow us to improve public health and achieve better health outcomes in the region. With that in mind, I wish you all a productive and rewarding experience that is consistent with the expectations that drove you to attend the conference.

I welcome you again and wish you all a successful and enjoyable stay in Marrakech.

Sincerely,

Dr. Mohannad Al-Nsour
Executive Director
Global Health Development
EMPHNET
The Fifth EMPHNET Regional Conference – Marrakech, Morocco
Pre-Conference Workshops: Monday, December 5, 2016

Workshops will be facilitated by experts from regional and international entities.

1: Bio-Risk Analysis in Research for Public Health Scientists
Palm Plaza Hotel, 5 December, 9:00-17:00 (All Day)

Description
The purpose of this workshop is to encourage participants to analyze and discuss risks in new ways. Three to four case studies based on a high-quality, published research articles from the BMENA will be used to explore and analyze potential risks and risk management strategies in life sciences research. Participants will learn how to identify, assess, manage, and communicate a wide range of risks during the design, conduct, and communication of research. By the end of each exercise, they should be able to apply what they learn to their own research activities, the laboratory work of their staff and students, or research they review. Each exercise includes a common risk analysis framework and a case study that is based on actual research conducted in the region. Each case study is different and is designed to help teach the risk analysis framework in a realistic and appropriate manner, as well as to facilitate its application to participants’ scientific activities.

Objectives
• Train public health scientists in identifying, assessing, managing, and communicating risks of the epidemiologic and diagnostic work conducted in their laboratories or in the field.
• Provide them with the skills and knowledge to train their staff, junior colleagues, and students in analyzing and mitigating risks associated with laboratory and field studies.
2: FETP-Frontline in the EMRO Region

Palm Plaza Hotel, 5 December, 9:00-17:00 (All Day)

Description

This pre-conference workshop is intended to describe the existing FETP-Frontline curriculum and implementation strategy, and provide a forum to discuss adaptation and implementation in the EMRO Region. The workshop will begin with a description of the FETP pyramid, comprised of FETP-Frontline, FETP-Intermediate, and the two-year FETP-Advanced program. The FETP-Frontline curriculum, timeline, planning needs, and implementation strategy will then be discussed. Lessons learned and success stories from other regions will be shared. Participant input will be solicited in a discussion of how to adapt material and strategies for the EMRO Region. Sample material and handouts will be shared with participants.

Objectives

• Inform participants of the FETP-Frontline curriculum and general implementation strategy.
• Describe the pre-requisite conditions, planning process, and implementation steps needed to launch an FETP-Frontline in a country.
• Discuss how the standard FETP-Frontline curriculum and implementation strategy should be adapted for use in the EMRO Region and in individual countries.


Palm Plaza Hotel, 5 December, 9:00-17:00 (All Day)

Description

This pre-conference workshop is designed to highlight innovative surveillance tools that contribute to global efforts made to detect and respond to outbreaks and public health events in a timelier manner. The regional contributions made through the utilization of the EpiCore platform can create an impact on global health development that is significantly different than the one produced by traditional surveillance. As nontraditional surveillance tools become more widely used and relied upon, it is imperative that platforms such as EpiCore have the full participation of public health professionals to demonstrate the validity of informal surveillance data and to harness the full potential of innovative surveillance systems.
Objectives

• Discuss types and functions of non-traditional public health surveillance
• Recognize the use of non-traditional public health surveillance
• Demonstrate use of social networking and crowdsourcing platforms for public health surveillance
• Identify EpiCore Platform and comprehend its purpose
• Demonstrate the functions of EpiCore
• Utilize EpiCore as a registered user
• Discuss the significance and contributions of EpiCore in improving public health surveillance

4: Routine Immunization

Palm Plaza Hotel, 5 December, 9:00-17:00 (All Day)

Description

Great effort is needed to overcome the challenges to reach and vaccinate every child in the community. To achieve Eastern Mediterranean Vaccine Action Plan (EMVAP) targets, political commitment, countries’ ownership, proper microplanning, creating more demand and engagement of local communities, as well as continuous capacity building of the Expanded Programme on Immunization (EPI) staff at different levels are among the most important requirements. The overall goal of this pre-conference workshop is to highlight the importance of strengthening Routine Immunization (RI) in all countries of the region, and to exchange experiences among participants regarding RI and VPDs/measles.

Objectives

Refresh participants’ knowledge related to:

• Some key basics of RI like major vaccines and respective VPDs, key components of RI system, and effective management of EPI.
• The Global Vaccine Action Plan and the Eastern Mediterranean Vaccine Action Plan
• Brief participants about RI current global and regional situation and challenges.
• Discuss participants’ role and contribution to reaching GVAP/EMVAP targets in their respective countries.
The Fifth EMPHNET Regional Conference – Marrakech, Morocco
Roundtable Discussions: Tuesday, December 6 - Thursday, December 8

On this page, conference participants can find brief abstracts about the roundtable discussions offered at the Fifth EMPHNET Regional Conference. These discussions provide invaluable opportunities for not only the exchange of knowledge, but also collaboration in areas of leadership and management global health security, and the responsible conduct of science within regional biosecurity policies and capacities. One roundtable discussion will be held in collaboration with MediPIET. This session will focus on creating synergies between regional public health networks. Below, you will find a brief description of each roundtable session. Detailed descriptions will be available on the conference website.

1: Creating Synergies Between Regional Public Health Networks Together for Better Health Protection

Venue: Hôtel Les Jardins de l’Agdal
December 6, 2016: 12:15 to 13:30

Description: This roundtable is part of the joint initiative, combining a team of panelists from MediPIET’s Second Annual Scientific Conference and the Fifth EMPHNET Regional Conference. With the themes being “Protecting Public Health across Borders” and “Regional Contributions to Global Health Development” respectively, both conferences will complement each other and the nature of their correlation will be the focus of the roundtable session. The session will highlight networking as a force ensuring effective public health functions.

2: Equipping and Mobilizing Rapid Response Teams to Rise to Current Challenges

Venue: Palm Plaza Hotel
December 6, 2016: 18:00 to 19:00

Description: The roundtable discussion questions will aim at exploring ways to better develop vigorous and multi-sectoral rapid response teams that are well connected to the national system and supported by the international community. The roundtable session will focus on ways to build capacity in rapid response, and develop national guidelines for emergency rapid response teams. Panelists will direct discussions to encourage attendees to share their country experiences in strengthening leadership, coordination and emergency management, and mechanisms of existing emergency operation systems in delivering, mobilizing resources and responding to outbreaks.
3: Global Health Security (GHSA)
Venue: Palm Plaza Hotel
December 7, 2016: 9:00 to 10:00

Description: The recent Ebola Outbreak, and to a less extend the MERS-CoV one, confirmed the “Global Health Security” stakeholders’ apprehensions about the low and inefficient implementation of the IHR (2005). It resulted in a universal intensive, laborious, but very interesting and productive debate on the way the IHR (2005) has been managed, implemented and monitored and it highlighted the difficulties and challenges IHR implementation has been facing, including the lack of commitment and ownership by member states, the inadequacy of resources engaged by Member States and partners for that purpose, and the limitations of the monitoring and evaluation mechanism put in place (strongly relying on country self-assessment and reporting). This roundtable is designed to brief participants on the IHR new monitoring framework, the global health security concept and the ongoing JEE missions in the Region and the next steps.

4: Viral Hepatitis
Venue: Palm Plaza Hotel
December 7, 2016: 14:15 to 15:15

Description: Viral hepatitis represents a considerable public health challenge in the WHO Eastern Mediterranean Region, with hepatitis B and C causing more deaths than HIV, malaria or tuberculosis. While hepatitis B and C are preventable, hepatitis B is manageable and hepatitis C is curable, still the prevention and control of viral hepatitis is largely being neglected – with the exception of hepatitis B childhood vaccination. The roundtable Session is an opportunity to brief the participants on the WHO global strategy on viral hepatitis 2016–2021 towards ending viral hepatitis as well as the Eastern Mediterranean regional action plan for the implementation of the global strategy. It will also provide a platform for information sharing on the main achievements the three countries made in the implementation of the public health approaches for the prevention and control of Hepatitis B and C and to debate on their experiences to enhance access to new hepatitis medicines.

5: Leadership and Management: A Critical Link in Public Health Workforce and Institutes Development
Venue: Palm Plaza Hotel
December 7, 2016: 17:45 to 19:00
Description: Public health management is a pillar of public health practice, working closely alongside other public health disciplines, such as epidemiology, health policy, behavioral sciences and education, to influence health outcomes. It is only through effective management that research, theory, and scientific innovation and disease control and prevention can be translated into successful public health action. This panel will further explore the need to train public health managers, explore existing efforts globally, as well as the needs and experiences of two countries in the region. The panel discussion will also introduce CDC’s approach to competency based public health management training.

6: Biorisk Management Challenges and Solutions

Venue: Palm Plaza Hotel

December 8- 9:00 to 10:00

Description: This roundtable will contribute to regional efforts undertaken to raise awareness and increase knowledge in Biosecurity of Valuable Biological Materials (VBM), dual use and responsible conduct in science. The purpose of this roundtable is to share and discuss concerns and issues around these topics within regional capacities and policies. Participants will have the opportunity to gain knowledge on dual use and responsible conduct in science. Experts will share their experiences in the field and on available guidelines and training material. The ultimate aim of the roundtable discussion is to identify challenges and gaps that might hinder in these areas.

7: Polio Eradication

Venue: Palm Plaza Hotel

December 8- 17:15 to 18:15

Description: Since the Global Polio Eradication launched in 1988, the number of Polio cases has fallen by over 99%. In 2016 so far, only 30 polio cases due to wild polio virus were reported from the three endemic countries; Nigeria, Pakistan and Afghanistan and the world is close to achieving the goal of polio eradication. This roundtable discussion is designed to brief participants on the remaining challenges discuss the opportunities towards eradicating polio from the region and the globe, and exchange experiences that can contribute to achieving the goal.
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ZD</td>
<td>Zoonotic Diseases</td>
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<tr>
<td>MCH</td>
<td>Maternal and Child Health</td>
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<td>SE</td>
<td>Surveillance Evaluation</td>
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<td>NCD</td>
<td>Non-Communicable Diseases</td>
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<tr>
<td>TEPHINET</td>
<td>Training Programs in Epidemiology and Public Health Interventions Network</td>
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<td>WBD</td>
<td>Water Borne Diseases</td>
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<td>RD</td>
<td>Respiratory Diseases</td>
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<tr>
<td>VBD</td>
<td>Vector Borne Diseases</td>
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<td>VPD</td>
<td>Vaccine Preventable Diseases</td>
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<td>HEP/HIV</td>
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### Workshop Summary

**Fifth EMPHNET Regional Conference | Pre-conference Workshops**  
**Marrakech, Morocco | December 5, 2016**

<table>
<thead>
<tr>
<th>Date</th>
<th>Workshop Title</th>
<th># of Participants</th>
<th>Duration</th>
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<tr>
<td>Dec 5th</td>
<td>FETP-Frontline in the EMRO Region</td>
<td>25-30</td>
<td>1 Day</td>
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<tr>
<td>Dec 5th</td>
<td>Biostat Analysis in Research for Public Health Scientists</td>
<td>25-30</td>
<td>1 Day</td>
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<tr>
<td>Dec 5th</td>
<td>Routine Immunization</td>
<td>25-30</td>
<td>1 Day</td>
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### Day 1 | December 6, 2016

**Joint Day EMPHNET & MediPIET**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 1</th>
<th>Session 2</th>
<th>Session 3</th>
<th>Venue</th>
</tr>
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<tr>
<td>08:30-09:00</td>
<td>Registration</td>
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<tr>
<td>09:00-10:30</td>
<td>Opening Ceremony [Guest Speakers: Officials &amp; Authorities]</td>
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<tr>
<td>10:30-11:00</td>
<td>Coffee Break</td>
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<tr>
<td>11:00-12:00</td>
<td>Opening Ceremony [Key Note Speakers: Conference Themes] (EMPHNET &amp; MediPIET)</td>
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<tr>
<td>12:00-12:15</td>
<td>Break</td>
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<tr>
<td>12:15-13:30</td>
<td>Roundtable 1 [Creating Synergies between Regional Public Health Network] (EMPHNET &amp; MediPIET)</td>
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<td>13:30-14:30</td>
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<td>14:30-16:00</td>
<td>Respiratory Diseases (6) (EMPHNET)</td>
<td>Surveillance System (6) (EMPHNET)</td>
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<td>16:00-16:30</td>
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<td>Palm Plaza Hotel</td>
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<td>16:30-17:45</td>
<td>Outbreak Investigation-RD (5) (EMPHNET)</td>
<td>Outbreak Investigation-VPD (5) (EMPHNET)</td>
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<td>17:45-18:00</td>
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<td>18:00-19:00</td>
<td>Roundtable 2 [Equipping and Mobilizing Rapid Response Teams to Rise to Current Challenges] (EMPHNET)</td>
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## Day 2 | December 7, 2016

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<td>Roundtable 3</td>
<td>Global Health Security (GHSA)</td>
<td>Palm Plaza Hotel</td>
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<td>10:15-11:15</td>
<td>Antimicrobial Resistance (4)</td>
<td>Maternal Health (4)</td>
<td>Other (4)</td>
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<td>11:15-11:45</td>
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<td>Coffee Break</td>
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<tr>
<td>11:45-13:15</td>
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<td>Noncommunicable Diseases (6)</td>
<td>Vaccine Preventable Diseases (6)</td>
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<td>Roundtable 4</td>
<td>Viral Hepatitis</td>
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<td>15:45-17:15</td>
<td>Zoonotic &amp; Vector Borne Diseases (6)</td>
<td>Noncommunicable Diseases (6)</td>
<td>Child Health (6)</td>
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<td>17:45 - 19:00</td>
<td>Roundtable 5</td>
<td>Leadership &amp; Management: A Critical Link in Public Health Workforce and Institutions Development</td>
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## Day 3 | December 8, 2016

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<td>Roundtable 6</td>
<td>EORisk Management Challenges &amp; Solutions</td>
<td>Palm Plaza Hotel</td>
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<td>10:15-11:15</td>
<td>Hepatitis and HIV (4)</td>
<td>Maternal Health (4)</td>
<td>NCD-Cancer (4)</td>
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<tr>
<td>11:45-13:15</td>
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<td>Poster Presentations (33)</td>
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<td>15:45-16:45</td>
<td>Roundtable 7</td>
<td>Polo Eradication</td>
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<td>16:45 - 17:15</td>
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<td>17:15 - 18:15</td>
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<td>Closing Ceremony</td>
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Background
Cancers are second leading cause of death in Iraq, accounted for 9.4% of all deaths in 2015. Cancer burden continues to grow with annual incidence of 61.7 per 100,000 population. Breast and bronchus/lung cancers are top types among adults.

Purpose
We aimed to describe pattern of cancer morbidity and mortality using cancer registry in Missan Governorate, Iraq, 2012-2015.

Methodology
We reviewed cancer data available in cancer registry in Missan during 2012 through 2015. Cancer registry is a double check system that documents new cancer cases beside deaths. Data collection tool includes demographics, topography/morphology coded by ICD10 and stage at diagnosis. We reviewed all-cause death data to estimate cancer proportionate mortality. We computed incidence and mortality rate for each year and calculate averages. We compared age specific rates and described cases by age, sex and cancer primary site.

Results
We captured 2,375 new cancer cases and 803 cancer deaths. The average annual incidence was 57.5 per 100,000 population; male to female ratio was 0.88:1. The highest incidence was among elderly aged >64 year. The commonest cancer sites were breast (474, 20%) and bronchus/lung (278, 11.7%). Among females, breast cancer was more incident (461, 36.5%) while bronchus/lung cancer was the commonest among males (208, 18.7%). Metastasized cancer noted in 60.2% of all cases and in 66.4% of breast and cervical cancer cases. Brain cancer and leukemia accounted for 37.5% among children <15 year. The average annual mortality rate was 19.5 per 100,000 population with highest rate among elderly. Average annual proportionate mortality was 6.7%. Bronchus/lung cancer was the leading cause of death.

Conclusions
Cancer incidence and mortality in Missan are lower than national ones with similar top types. Elderly people are the most affected group. Majority of cases presented in advanced stages particularly female cancers. We recommend enhancing early cancer detection programs among high risk groups.

Background
There is an increase in the prevalence of cancer in Nigeria with a change in disease pattern from predominantly infectious to one with both communicable and non-communicable diseases.

Purpose
This study was carried out to determine the pattern and outcomes of Cancers in Federal Teaching Hospital, Ido-Ekiti, Ekiti State, Nigeria: An 8-Year Review.

Methodology
This retrospective study reviewed data on patients diagnosed with cancers as recorded in the database of the Cancer Registry of the Federal Teaching Hospital, Ido Ekiti, Nigeria from 2007 to 2015. The data was obtained from the cancer registry of the hospital with a checklist and analysed with SPSS version 15 using descriptive statistics.

Results
There were 787 diagnosed cancer patients on record in the cancer registry within the eight-year period under review. The commonest site of affection was the breast (31.3%) followed by the Prostate (26.7%) and cervix (7.9%). The mean age for the 3 most common cancers is 54.2 ± 19.4. Of all the patients seen, 96.6% were symptomatic and 3.4% were not while 97.7% were alive and 2.3% dead at the time of this survey. Patients with age 20-39 and having primary education were about 3 time more likely to have cancer of the breast than cancer of the cervix, (P=0.024, P<0.001). There is no difference in the likelihood of those with secondary education having either breast or cervical cancer (OR=1)

Conclusions
There was a relatively high proportion of young adults among patients with cancer. To reduce cancer prevalence, stakeholders need to encourage early screening and diagnostic measures among young adult, reduce exposure to risk factors for cancers and subsidize or waive treatment costs for patients.
Background Colorectal cancer (CRC) is a heterogeneous disease, affects all racial and ethnic groups and caused by interaction of genetic and environmental factors. It is the third most common cancer in men and the second in women worldwide.

Purpose This study was conducted to describe the epidemiological characteristics of CRC in Iraq over 10-year period; 2002-2011.

Methodology Clinical, demographic, and geographic data for all CRC were retrieved from registries of Iraq Cancer Board. Detailed tumor data (histological types, site, grade, and stage) were obtained from patients’ records in Amal oncology hospital, Baghdad. Provincial population data were obtained from the Central Statistics Office.

Results A total of 7,246 cases of CRC were registered during 2002-2011. The crude incidence rate increased from 2.8/105 pop in 2002 to 3.3/105 pop in 2011, and ranked 6th -7th among all cancers. Male was more affected than female in all age groups (Male: Female ratio 1.1:1-1.3:1). The age specific incidence rate was highest among peoples aged 60+ years (median for 10-year period: 36/105 pop) compared to other age groups. The highest average incidence rate for 10-year period was in Kirkuk province (3.2/105) and the lowest was in Saladin (1.1/105). Average incidence rate of CRC was higher in the Northern provinces (2.24/105) as compared to southern provinces (1.53/105). Rectum was the affected site in 49% of patients. Adenocarcinoma of moderate differentiation represented 85% of histological types. Around 54% of patients presented at stage 3 (regional spread) or more (distant spread).

Conclusions Although WHO standards place Iraq in the low CRC incidence stratum (2-4/105 pop), but the incidence is increasing and late diagnosis is common. Developing a national prevention strategy including screening program is recommended.

Background Colorectal cancer (CRC) is the third most common cancer globally. In Jordan, it is the number one cancer among men and the second most common cancer among women; comprising 15 % and 9.4 % respectively of all males and females’ diagnosed cancers.

Purpose This study aims to evaluate the knowledge and perceptions about colorectal cancer risk factors, signs and symptoms in Jordan and to provide useful data about the best modes of disseminating preventive messages about the disease.

Methodology Stratified clustered random sampling technique was used to recruit 300 males and 300 females aged 30 to 65 years without a previous history of CRC from four governorates in Jordan. A semi-structured questionnaire and face to face interviews were used. Descriptive and multivariate analysis was used to assess the women knowledge and perceptions about CRC.

Results Both males and females perceived their CRC risk to be low. They had low knowledge scores about CRC with no significant association to sex (P= 0.47). From a maximum knowledge score of 18 points, the median scores of males and females were 4 points (SD = 2.346, Range 0-13) and 4 points (SD= 2.329, Range 0-11) respectively. Better knowledge scores were associated with governorate, higher educational level, older age, higher income, having a chronic disease, having a family history of CRC, previously knowing someone who had CRC and their doctor’s knowledge about their family history of CRC.

Conclusions There is low level of knowledge about CRC and underestimation of risk among the study participants. This designates the need for public health interventions to create awareness about the illness. It also calls for further research to assess the knowledge and perceptions about CRC early detection examinations in Jordan.
Background Cancer remain one of the leading cause of morbidity and mortality in the developed world. Pancreatic cancer has a poor prognosis, even when diagnosed early. Pancreatic cancer typically spreads rapidly and is seldom detected in its early stages, which is a major reason why it’s a leading cause of cancer death. Signs and symptoms may not appear until pancreatic cancer is quite advanced and complete surgical removal isn’t possible. In Jordan approximately 4675 new cancer cases were diagnosed and 2631 cancer deaths.

Purpose To define incidence and mortality rate trends of pancreatic cancer in Jordan from 2007 to 2011.

Methodology Retrospective 5 years reviewed data during the period 2007-2011. Source of data: Jordan national Cancer registry represents a data source for cancer incidence and Department of mortality coding represents a data source for cancer mortality.

Results The incidence rate of pancreatic cancer for male between 2007 and 2011 remained not stable (1.19, 1.66, 1.1, 1.81, 1.52 cases per 100,000) the mean incidence rate was 1.46 cases per 100,000. For women incidence rate was (1.12, 0.92, 1.04, 1.25, and 1.02 the mean incidence rate was 1.07). At the same time mortality rate was higher from incidence rate at the same period mean mortality rate for men was 1.94 deaths per 100,000, for women it was 1.35.

Conclusions The incidence of pancreatic Ca 2007-2011 was not stable. Incidence and mortality in men higher than in women. Mortality rate at all years was higher than incidence. To improve the completeness of cancer registry another source of reporting, like forensic medicine, mortality registry, radiology centers and clinical diagnosis not only histological diagnosis.

Background Breast Cancer (BC) is the most commonly diagnosed cancer in women worldwide with an estimated 1.67 million new cancer cases in 2012 (25% of all cancers). It is the second most common cancer in the world. Incidence rates vary nearly four-fold across the world regions with rates ranging from 27 per 100,000 in Middle Africa and Eastern Asia to 92 in Northern America. In Jordan, it ranks first among cancers diagnosed in women and is the fifth most common cause of death.

Purpose The aim of this study was to present the incidence trend of BC among Jordanian women over the 10-years period.

Methodology Data about BC was taken from Jordan Cancer Registry (JCR) from 2003 to 2012 were utilized. Official approval to do the study was taken from the registry. All cancer cases that were diagnosed during this period were included, data on age, sex, primary site, morphology, grade and stage were collected and filtered.

Results In the year 2003 there were 551 cases of BC among women accounting for 31.8% of all newly diagnosed cancer cases compared with 994 cases in 2012 which accounting 37.3%. The total number was 8126 cases in this period. Age standardized incidence rate of BC increased dramatically during these years from 32.2 to 53.9 per 100,000. The median age at diagnosis of BC in females was shifting from 45 years in 2003 to 51 years in 2012, ranging from 20 years to 91 years.

Conclusions The results of our study are consistent with international studies. There is an increasing incidence trend of BC in Jordan. Thus, health education programs to rectify the lack of women awareness about BC and effective screening and early detection are urgently needed.
NCD-Cancer

Abstract Code: 2016-FWBD-261
Presenter Name: Mr. Mohamed Lafi | Author: R. Shaheen, C. Jabari | Country: Palestine
Presenter Email: lafim@who.int
Title: Comparative Assessment of Breast Cancer Awareness of Women in Palestine

Background Breast cancer is the most common malignancy and leading cause of cancer mortality for women in Palestine.

Purpose Identify barriers to early detection of breast cancer in Palestine.

Methodology Two hundred Palestinian women 30 years and older were surveyed between May-July 2014: 100 Gaza (GW), 57 West Bank (WBW), 43 Jerusalem (JW). Survey examined women’s knowledge, attitude, and practice toward breast cancer. Data analysis using excel allowed for comparative results among territories.

Results Almost 90% of women acknowledged breast cancer is common, treatable, and curable if detected in early stage. Only 50% of women identified aging and positive family history as risk factors. While 70% of women would go to the doctor if breast problem encountered, only 22% GW, 33% WBW, 52% JW considered breast screening. Only 5% of WB and GW were offered clinical breast examination by doctors compared to 40% of JW. Almost 73% of women would agree to have a mammogram if recommended by their doctors, only 13 % GW, 28% of WBW, 72% JW had a mammogram. Half of GW and 25% of WB and Jerusalem women cannot afford a mammogram. Majority of GW (88%) and WBW (73%) are not satisfied with their local quality of medical resources compared to 46% JW. Only 3% GW, 25% WBW, 35% JW preferred to get a breast work up abroad. About 60% of women believe breast screening is culturally acceptable and would get family encouragement. About 80% believe it’s important to target the whole family including men with awareness campaigns, using religious figures and media as good tools for raising awareness.

Conclusions Geographic, attitude, financial and resources’ barriers to early detection of breast cancer exist among Palestinian women and vary in severity in different cities. Targeted and realistic health care solutions are necessary to raise awareness and to overcome the specific barriers.

Background Breast Cancer (BC) is the leading cause of cancer-related deaths in women worldwide and accounts for 16% of all female cancers. In Yemen, BC is the most common cancer among Yemeni women where it accounts for 21% of all women’s cancers. Knowing the possible risk factors is a prerequisite for designing any BC prevention program.

Purpose Assess the risk factors for BC among women at Hadramout Al Wadi.

Methodology The study was conducted at Hadramout Al Wadi Oncology Center (HAWOC) where 105 BC cases were matched with 210 controls for district, age ± 5 and year of diagnosis. Cases were women registered at HAWOC during 2011-2015 and diagnosed as having BC by mammography and/or histopathology. Controls were women registered at HAWOC as having no BC as confirmed by a negative mammography. Cases and controls were interviewed using a pre-designed questionnaire cover previously known risk factors. Odds ratio (OR) with 95% confidence interval (CI) was calculated to test for significance.

Results The following risk factors were identified: women who never breastfeed 2.5 (1.1-5.7), being single/divorce/widowed: OR 2.0 (CI 1.3-3.4), and being in the post menopause: OR 1.8 (CI 1.1-2.3). Contrarily, contraceptives use for > 36 months found to be a protective: OR: 0.4 (CI 0.2-0.8). Other known risk factors previously reported such as first-degree relative family history, oral contraceptives use, age at marriage and age at menarche were found not to be significantly associated with BC among this population.

Conclusions There is a need to increase public awareness regarding BC and its possible risk factors as well as importance of regular breast self-examination and screening. Future larger scale research should be conducted to confirm the lack of association between other known BC risk factors that was not found to be related among this population.
**Background**
The incidence of breast cancer is rapidly increasing in Yemen with an indication of constituting one-third of female cancers. The main problem in Yemen remains very late presentation of breast cancer, most of which should have been easily recognizable. Since stage of disease at diagnosis is the most important prognostic variable, early diagnosis is an important option to be considered for control of breast cancer in low resourced settings like Yemen.

**Purpose**
Describe breast cancer knowledge, perception and breast self-examination (BSE) practices among a sample of Yemeni women.

**Methodology**
This is a cross-sectional study among 400 women attending four reproductive health centres in Aden, Yemen through face-to-face interview using a structured questionnaire during April – July 2014. We collected data on sociodemographic characteristics, knowledge about breast cancer, and screening practices as well as respondents’ perceptions that based on the five sub scales of the Health Belief Model (HBM): perceived susceptibility, perceived severity, perceived barriers, and perceived benefits and self-efficacy. The response format was a five–point Likert scale. Statistical Package for Social Sciences (SPSS 20) was used for statistical analysis. Statistical significance was set at p< 0.05. Logistic regression analysis was done with BSE as dependent variable.

**Results**
The mean age of women was 26.5 (S.D=5.6). The majority (89.0%) had never ever performed any screening. Two-thirds of respondents had poor knowledge. Perceived BSE benefits and self-efficacy and lower BSE barriers perception were significant independent predictors of BSE practice.

**Conclusions**
Poor knowledge and inadequate BSE practices are prevailing. The need for implementing culturally sensitive targeted education measures is mandatory effort to improve early detection and reduce the burden of breast cancer.

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**Background**
Lung cancer continues to be the leading cause of death worldwide. In Tunisia, lung cancer represents the first cancer for men with a standardized incidence of 32.5 case/100000 (registry cancer northern Tunisia 2004-2006). Nowadays, it represents also one of the most frequent causes of hospitalization in Mami Hospital for lung diseases. Understanding how lung cancer is managed and which treatment is more efficient are needed. In January 2016, Mami Hospital Medical board decided to implement a Hospital-based Cancer Registry for Lung Cancer.

**Purpose**
Our study aims to describe the experience of Mami hospital in setting up a hospital based registry for lung cancer.

**Methodology**
Since January 2016, all new lung cancer admitted to the Mami hospital were enrolled. Exclusion criteria were lack of histological confirmation, secondary LC and patients hospitalized before 2016. Socio-demographic details, diagnostic, treatment and prognostic data are collected for each patient.

**Results**
During the first 6 months, 209 patients were recorded. The mean [SD] age was 60.23 [± 13.12] years, male to female ratio was 6.57 and most of them were smokers (89.8 %). 45.2% of patients come from others governorates. Adenocarcinoma (44.8%), squamous cell carcinoma (27.6%) and small cell carcinoma (17.2%) are the most frequent lung cancer type. Forty-three percent of patients were diagnosed with metastases. Multidisciplinary teams (MDTs) took most therapy decisions (75%) which were followed in 80% of cases. Half of patients received chemotherapy, 45% surgery, and 20% radiotherapy. The average [SD] of duration of hospital stay was 17.25 [± 13.11] days and the median diagnostic delay was 76 days (22-336 days).

**Conclusions**
The hospital-based cancer registry is a highly interesting epidemiological tool which could give feedback information and help physicians to reorient therapy decision and enhance best practices.
Maternal Health

Abstract Code: 2016-OTH-31

Presenter Name: Dr. Badr Abdulla | Country: Iraq

Presenter Email: aano441@yahoo.com

Title: Trends and Epidemiological Characteristics of Maternal Deaths in Diwania province 2015

Background Each day about 1000 women die worldwide because of complications related to pregnancy and childbirth. Developing countries account for 99% of the deaths and have the highest maternal mortality ratio MMR. The vast majority of these deaths would be avoidable if their causes were known. In the absence of good vital registration, measuring causes of maternal mortality is a challenge.

Purpose To determine trends and epidemiological characteristics of maternal death MD in Diwania province 2015.

Methodology Retrospective descriptive review of all death data among child bearing age women maternal on (2015) in hospitals (5 public and 3 private) from 10th Jan to 6th March 2016. We used WHO definition of MD. (death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.).

Results The mean maternal age at death was 30 years The leading causes of death were thromboembolic events 8(44%), haemorrhage 4(22%), septicaemia 3 (17%), and 3 (17%) hypertensive and cardiac diseases. Out of 18 deaths, there were 16 (89%) among housewife, 15 (83%) gestational age was more than 20 weeks, 15 (83%) the gravity was less than 4, 9(50%) deaths among rural mothers, 15 (83%) among illiterate ,15 (83%) had no antenatal care ANC and 15 (83%) had existing risk factors. MMR was 47.5 /100,000 live births. The stages of death were during postpartum 10 (56%), pregnancy 6(33%), and 2 (11%) during labour.

Conclusions No ANC, illiterate, presence of pre-exciting risk factors, low socio-economic class, and gravity less than 4 were associated with increased risk of maternal death.

Maternal Health

Abstract Code: 2016-HIV/STI-70

Presenter Name: Ms. Mona Berjawi | Country: Lebanon

Presenter Email: mona_berjawi@hotmail.com

Title: Evaluation of Knowledge and Compliance to Multivitamins and Minerals in Lebanese Pregnant Women

Background Pregnancy is a critical period for both woman and baby where the existence of limited studies in Lebanon about supplement intake, nutritional education, and adherence are considered important tools for promoting a healthy lifestyle.

Purpose To assess nutritional supplements intake, knowledge, and compliance to multivitamins and minerals in Lebanese pregnant women and predict their determinants.

Methodology A cross-sectional observational study was conducted in nine hospitals where 574 Lebanese women were interviewed using a standardized questionnaire 24 hours post-delivery during January-May 2016. The level of compliance was assessed using the 4-item Morisky Medication Adherence Scale where data was analyzed using SPSS, version 20.

Results Participants reported an intake of multivitamin (65.9%), iron (88.2%), folic acid (69.9%), calcium (71.3%), and vitamin D (33.4%) during pregnancy. Logistic regression analysis revealed that predictors of lower intake of multivitamin and minerals were pre-pregnancy obesity, multiparous women, living in Mount Lebanon and South, and those who used to take pre-conceptual folic acid (p-value<0.05). The lower use of iron was associated with women who didn’t receive diet advice, living in South area, and having low adherence level. Nonsmoker’s participants with higher educational level, used to take pre-conceptual folic acid, had medium-high adherence level, and lived in different area except for North and South were more likely to take folic acid during pregnancy. Among all the participants, 12% and 17.2% got high and low nutritional knowledge scores respectively. Older age was the most predictive factor for higher nutritional knowledge of pregnant women in linear regression model (standardized beta= 0.164). Furthermore, only 28.2% of women had high level of adherence where folic acid intake was the most powerful factor for higher adherence (standardized beta= -0.182).

Conclusions Public health strategies should emphasize the importance of supplements intake by promoting nutritional education programs to increase nutritional knowledge and adherence to supplements.
Background Early breastfeeding is feeding baby within first hour after birth. It provides first milk or colostrum having protective factors and enhance the immunity of baby. Poor feeding practices are major contributor to the disease burden and infant mortality. The study assessed prevalence of timely initiation breast feeding and identified significant challenges for timely start of breast feeding.

Purpose • To assess the prevalence of timely initiation breast feeding among mothers in rural areas of Muzaffarabad. • To identify the significant challenges for timely start of breast feeding.

Methodology A Cross Sectional study was conducted in the rural areas (2 Union councils) of Muzaffarabad A total sample of 202 Mothers were selected using two stage Random Sampling method. Structured questionnaire was used and comparisons were performed using Chi-square test.

Results Among the total 202 selected mothers, 66% reported normal vaginal deliveries while 34% of them had caesarean section. Among the vaginally delivered mothers, 35.1% started timely breast feeding while those with the h/o C-section reported delayed initiation of breast feeding. Average time for initiation of Breast feeding among vaginally delivered mothers remained 4.5 hours (SD±2) and 7.1 hours (SD±2.3) among other. Mothers older than 31 years of age and with low socioeconomic status started timely breast feeding (p<0.05). Deliveries at proper health care facility by trained birth attendants, influenced timely initiation of breast feeding (p<0.05). Parity, knowledge, type of family (Extended/Nuclear), supportive and encouraging health care provider remained statistically associated with early start of breast feeding (p<0.05).37.6% female shared problems like inadequate milk supply 69%, sore nipples 15%, low birth weight 12% and breast infections 4%.

Conclusions There was low prevalence of early initiation of breastfeeding in rural areas of Muzaffarabad attributed to lack of proper knowledge, among the delivered mothers. It is important to increase awareness regarding benefits of early initiation of breast feeding in mothers and health care providers.

Background Child bearing age (CBA) women in Pakistan experience unwanted pregnancies due to poor access and utilization of family planning services, insufficient availability of modern contraceptive methods, lack of access to commodities and partner approval.

Purpose A cross sectional survey was done to assess the barriers to accessibility and utilization of contraceptives among married population in urban areas of Karachi.

Methodology A total of 210 married women and men were accessed by employing a community-based, cross-sectional descriptive study design. A multistage random sampling technique was used in selection of study participants. Face-to-face interviews were conducted to collect information on demographic, socio-economic status and barriers to contraceptive availability by using a pre-tested closed-ended questionnaire. Data was entered and analyzed using SPSS version 17.0.

Results The mean age of study participants was 26 ± 6.65 years with a predominance of males n=110 (52%). The majority n=200 (95%) of respondents had knowledge about modern methods of family planning. The most frequent method of contraceptive used by males and females was condoms n=103 (49%) and oral contraceptive pills n=56 (27%) respectively. The significant barriers to utilization of contraceptives were side effects n=88 (41.9%) followed by religious beliefs n=60 (28.6%). Affordability and accessibility to the facility and services were strongly associated (p-value<0.001) with the contraceptive utilization. Attitude was significantly associated with contraceptive utilization (p-value <0.001).

Conclusions Barriers to utilization of contraceptives exist even in the urban settings. Introduction of behavioral-change communication program in the community is highly recommended with objectives to remove the barrier and knowledge gaps regarding contraceptive methods.
Maternal Health

Abstract Code: 2016-OTH-168

Presenter Name: Dr. Rami Al Rifai | Author: R. Al Rifai, I. Fadl Adam, K. Nakamura, M. Kizuki, U. Vanching
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Title: Relationship Between Implementing Interpersonal Communication and Mass Education Campaigns in Emergency Settings and Use of Reproductive Healthcare Services: Evidence from Darfur, Sudan

Background There are an increase number of refugees and internally displaced persons’ camps due to the growing conflict in Eastern Mediterranean region. Cross-border refugees and internally displaced persons experiencing dire life circumstances that affect their health and access to healthcare services.

Purpose To examine changes in women’s awareness and utilization of reproductive healthcare services in emergency settings following provision of interpersonal communication (IPC) and mass education campaigns, and to describe factors associated with reproductive healthcare service use in internally displaced person (IDP) camps.

Methodology From three camps containing 88,984 IDPs in Darfur, Sudan, 640 women aged 15−49 who had experienced pregnancy in the camp during the previous 2 years were enrolled in each of two independent cross-sectional surveys 26 months apart. Changes unawareness of the existence of antenatal care (ANC) and tetanus toxoid (TT) vaccination services, reception of ANC and TT vaccination, place of delivery and use of postnatal care (PNC), were measured.

Results The percentage of women who received home visits, and attended in-clinic sessions and public meetings increased from 61.6% to 86.7%, from 43.0% to 68.8%, and from 3.8% to 39.8%, respectively, between the initial and follow-up surveys. More women were aware of ANC (OR 18.6, 95% CI 13.1-26.5) and TT vaccination (OR 3.2, 95% CI 2.4-4.4) in the follow-up than the initial survey, after multivariable adjustment. More women received ≥3 ANC visits (OR 8.8, 95% CI 6.4-12.0) and ≥3 doses of TT (OR 2.5, 95% CI 1.9-3.3), delivered at a healthcare facility (OR 5.4, 95% CI 4.0-7.4) and received a PNC visit (OR 5.5, 95% CI 4.0-7.7) in the follow-up than in the initial survey, after multivariable adjustment.

Conclusions Awareness about and utilization of reproductive healthcare services were higher in the follow-up survey. An integrated IPC and mass education campaign is effective for improving women’s reproductive health in emergency settings.

Maternal Health

Abstract Code: 2016-OTH-365

Presenter Name: Mr. Adel Abdalla | Country: Sudan
Presenter Email: dumanet@yahoo.com

Title: Female Genital Mutilation in Sudan, 2014

Background Female genital mutilation is a big challenge and called pharaonic circumcision and it is wide spread in Sudan.

Purpose To determine the female genital mutilation and the associated factors in Sudan in 2014.

Methodology Data from Sudan Multiple Indicator Cluster Survey (MICS-UNICEF) which carried out in 2014 was used in this research. It is a household survey included women aged between 14 – 49 years old.

Results Total numbers of 21947 daughters were included in the survey 6249 (28.5%) from urban and 15698 (71.5%) from rural areas with mean age 9.23±7.9. All of them heard about female circumcision before. 89% of daughter circumcised with any type of the female circumcision. When women asked if they have daughter circumcised, 25.7% of them states that they circumcised their daughters before. Date of circumcision is varied between one year and 14 years. Regarding person who conducted circumcision, 70.9% daughters were circumcised by trained midwife. This survey collected data from all 18 states in Sudan. 95.2% of women included in this survey are currently married. This is an association between history of ever circumcised women and their marital status (OR= 1.26, CI (1.054 – 1.52) p. 0.011). There is also slight association between Daughter circumcision in rural and urban area and is statistically significant (OR= 1.3, CI (1.1747 - 1.3586), p 0.0001. An association was also observed between daughter circumcision and the level of education and it was statistically significant (p 0.000).

Conclusions Female genital mutilation is still problem in Sudan especially in rural area and among people with low education level. More efforts are needed from different partners to terminate is dangerous practice.
Maternal Health

Abstract Code: 2016-OTH-26
Presenter Name: Prof. Huda Basaleem  | Author: K. Al-Sakkaf  | Country: Yemen
Presenter Email: hudabasealeem92@yahoo.com
Title: Women’s Safe Motherhood Seeking Behaviour in Four Districts in Sana’a, Yemen: Quantitative and Qualitative Analysis

Background In Yemen, inappropriate safe motherhood seeking behavior, perceived low services quality and cultural barriers are contributing factors to inadequate services utilization and high maternal deaths. However, there are limited data in this regard.

Purpose Investigate sociodemographic and services factors associated with safe motherhood seeking behaviour and to explore respondents’ perception regarding services’ factors in four districts in Sana’a as an evaluation of the World Bank supported Safe Motherhood Initiative to design effective interventions before nation-wide scale-up.

Methodology The quantitative study used a cross-sectional design and complex multistage probability sampling of 1678 women who gave their oral consent during January–March 2013 in Sana’a through a house-to-house survey. Participants were also approached in ten health centers and two hospitals serving the targeted population in these districts with a questionnaire of 171 questions addressed reproductive history, antenatal, obstetric, and post-natal care for the youngest under-five child. In the qualitative phase, eleven focus group discussions among 29 males and 75 females had been conducted using an interview guide. Inductive content analysis was used to explain and inform an alongside quantitative analysis.

Results The mean age at marriage was 17.6 years. The majority of women had professional antenatal care (97.7%). Home delivery was reported by half of the respondents. Eighty percent did not receive postnatal care. Family planning was encountered among 60.3%. The qualitative inquiry explored: “consensus about the need for antenatal care”; “different views about the effectiveness of the labor services”; “inconsistencies about the side effects of family planning methods;” “women and men differently view the family planning decision maker”; and “health education: from not existing to good services”.

Conclusions Women’s safe motherhood seeking behaviour appears far from optimum. Inadequate awareness and decision making were obvious. Effective measures need to be considered at the community and health sector level.

Maternal Health

Abstract Code: 2016-OTH-316
Presenter Name: Mr. Achenef Asmamaw Muche  | Author: A. Adekunle  | Country: Ethiopia
Presenter Email: ashua2014@gmail.com
Title: Gender-Based Violence: A Correlates of Adverse Reproductive Health Outcomes Among Married Women in Northwest Ethiopia

Background Adverse reproductive health outcome (unwanted pregnancy, abortion and/or still birth) are a major sexual and reproductive health problems worldwide.

Purpose This study was done to assess the magnitude of adverse reproductive health outcomes and its correlates with gender-based violence.

Methodology A community-based cross-sectional study was conducted from January to June 2015 using the World Health Organization multi-country and Ethiopian Demography Health Survey (EDHS) questionnaire and to measure adverse reproductive health outcome and violence against women. A multistage random sampling technique was used to select households from community. Trained data collectors interviewed 832 married women were selected by systematic sampling technique in Debre Tabor, Northwest Ethiopia. Epi info version 6.0 for data entry and SPSS version 20 for analysis were used. Data were principally analyzed using binary logistic regression.

Results Three hundred and eleven (37.4%) of women had experience of at least one type of adverse reproductive health outcomes in their life time, such as unwanted pregnancy (22.2%), abortion (16.8%) and still birth (5.8%). Women who experienced gender-based violence (AOR=1.28; 95%CI:1.08-1.98), Psychological violence (AOR=1.38:95%CI;1.05-2.29), Physical violence (AOR=2.48; 95%CI:1.60-3.85), Sexual violence (AOR=1.31:95%CI:1.01-1.99) were factors associated with an increased risk of adverse reproductive health outcomes. Psychological violence (AOR= 1.94; 95%CI; 1.07-3.50), physical violence (AOR=1.88; 95%CI; 1.13-3.12) and sexual violence (AOR=1.84; 95%CI; 1.17-2.28) were factors associated with an increased risk of unwanted pregnancy. Physical violence (AOR= 1.19; 95%CI; 1.12-2.83), sexual violence (AOR=1.80; 95%CI; 1.11-2.93) were factors associated with an increased risk of abortion. Physical violence (AOR= 2.10; 95%CI; 1.86-5.11) was factor associated with an increased risk of still birth.

Conclusions Adverse reproductive health outcome was a serious problem and gender-based violence led to significantly increased risk of adverse reproductive health outcomes among married women. Multifaceted interventions such as male counseling, increasing awareness on the consequences of Gender-Based Violence (GBV) will help to reduce adverse reproductive health outcomes.
**Child Health**

**Abstract Code:** 2016-FWBD-346

**Presenter:** Dr. Mahnaz Hamed  |  **Country:** Afghanistan

**Presenter Email:** mahnaz406@gmail.com

**Authors:** S. George, Y. Ping

**Title:** The Prevalence of Selected Major External Birth Defects at a Hospital in Kabul, Afghanistan, 2016

**Background**

Birth defects (BDs) affect not only the quality of life of the child but also place significant financial and social burdens on families and society. Few data are available on the burden of BDs in Afghanistan, a country affected by poor nutrition, poor health and prenatal care, poor environmental health, and exposure to toxins in a war-ravaged country, all of which potentially increase the incidence of BD. We are performing a year-long prospective study on the prevalence of major external BDs at the largest maternity hospital in Kabul. We report four-month data collected 01 March to 30 June 2016.

**Purpose**

To estimate the prevalence of selected major BDs.

**Methodology**

We examined the prevalence of selected major external BDs among all deliveries (including stillbirths) through the 7th day after birth at the largest maternity hospital in Kabul. BDs assessed include neural tube defects (NTDs), talipes, orofacial clefts, genitourinary defects, musculoskeletal defects, omphalocele, and gastroschisis. Data were abstracted using WHO BD forms.

**Results**

Among 10,493 deliveries, 71 (0.68%; 68/10,000) had a major BD. Of the 71, 27 (0.26% of all births; 38.0% of all BDs) were NTDs (26/10,000); 40 cases were male, 27 cases were female and four cases were sexually ambiguous. The mean age of mothers and fathers was 31 and 33 years, respectively. Seventeen cases (23.9%) were stillborn and the most common BD among them was a NTD (10 cases, 58.8% of all stillbirths). An additional 11 (20.3%) of the 54-nonstilbirth cases died within seven days of birth (total mortality, 28—39.4%-of the 71 infants). Of the 11 nonstilbirth cases dying within one week of birth, the most common BD was a NTD (three cases) and congenital hydrocephalus (3 cases).

**Conclusion**

Our report indicates a high prevalence of NTD and other BDs. We are beginning studies to understand the risk factors associated with these defects.

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**Child Health**

**Abstract Code:** 2016-EOH-48

**Presenter Name:** Dr. Sayed Abdul Razaq Sadat  |  **Country:** Afghanistan

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**Title:** Mortality in Low Birth Weight Babies Was Reduced in the Neonatal Unit of the Abu Ali Sina Balkhi Regional Hospital When They Were Separated from Other Neonates

**Background**

Prevalence of low birth weight (LBW) is around 5% in developed countries and it varies between 5-30% in developing countries. LBW is responsible for 60% of infant mortality in the first years of life and it increases by about 40 fold the risk of neonatal mortality in the first 4 week of life. Afghanistan has one of the worst neonatal outcomes in the world. The neonatal mortality rate is about 45/1000 live births.

**Purpose**

The aim of this study is to determine the LBW mortality, the most frequent causes of LBW and the result of the intervention (separation of LBW babies from other neonates) in decreasing mortality.

**Methodology**

The study was a prospective, intervention trial conducted among 246 mothers with their neonates for baseline and 246 for intervention in the Abu Ali Sina Balkhi regional hospital. Convenience sampling was used to recruit the study subjects.

**Results**

A summary of the results of the intervention versus baseline study showed that the mortality significantly decreased by 8% among LBW, 28.6% among VLBW and 50% among extremely low birth weight, (mortality decreased: 6%, 95% CI: 3.1-9.1), alpha 0.001. There is significant improvement in preterm by 6.6%, term 3.2%, post term 10%. The result is similar among premature and small for gestational age with significant improvements of 9% and 100%, Alpha is 0.000. The most frequent cause is Asphyxia, LBW and Sepsis, Alpha is 0.000.

**Conclusion**

Simple interventions such as separation of the LBW babies from others can reduce mortality. In conclusion our study highlights the urgent need to reduce LBW mortality in the hospitals, promotes improved neonatal care by encouraging the implementation of standard criteria thereby seeking to decrease LBW mortality. It demonstrates a new, simple, cost effective, window of opportunity for the public health intervention.
**Background**
Diarrhea is one of the main causes of morbidity and mortality among children under five years of age; there are approximately one billion of diarrheal episode happening every year with nearly 2.5 million deaths. The improvement in primary health care reduce the burden of disease in many developing countries where there isn’t sufficient data on risk factors of diarrheal.

**Purpose**
The main objective of conducting this study is to determine the risk factors of diarrhea among children under five years old in North Badea of Jordan.

**Methodology**
A case control study carried out in North Badea, 100km north of Amman within the period between 21 June to 21 September 2011.

**Results**
The age group of children in this study ranged between 3 and 59 months with mean age, SD of 27.7, 15.7 respectively for cases and 26.3, 15.3 months for controls. 52% of cases and 55% of controls were males. Multivariate analysis, illustrate that usage of collection water is associated with increased risk of diarrhea OR=226 ,95% confidence interval(CI) 81.5 to 63.1). Not washing hands with water and soap after using the bathroom OR=13, (CI)130 to 4.6). or before food preparation OR=8.8, (CI) 49.8 to 1.6) was significantly associated with increased risk of diarrhea. Insufficient chlorine residual in water in the houses and presence of flies in the kitchen increased the risk of diarrhea, OR=25.7, (CI=104.6-6.3) OR=7.8, (CI=22.9-2.7) respectively.

**Conclusions**
Using unsafe water for drinking or cooking, poor hygiene practices such as no hand washing, insufficient chlorine residual in water at houses and presence of flies in the kitchen are associated with increased risk of diarrhea for STUDY GROUP. Therefore, the ministry of water and irrigation should take its role in monitoring the quality of water used for drinking and periodic testing of water. Health education programs about the proper hygiene practices should be encouraged.

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**Background**
Low birth weight (LBW) is a major determinant of infant mortality and morbidity. It is generally recognized that the etiology of LBW is multi factorial.

**Purpose**
to determine the risk factors of LBW among new-borns in Al Zahra Hospital, Al Najaf Al Ashref province.

**Methodology**
a case control study was conducted in Al Zahra hospital Between November 2015 – Jan. 2016. The data information was collected by direct interviewing the mothers of newborns. Basic demographics and epidemiologic data gathered from all cases and double number of healthy controls, resided in Al Najaf Al Ashref province, to identify potential risk factors. Association of the risk factors under study was assessed by applying chi-square test. To assess the strength of association the odds ratio and 95% confidence interval of odds ratio was calculated.

**Results**
The total number of cases was148, about 83(58%) of newborns were females. Majority of mothers 128(92%) were at age group 18-34 years and about 97(68%) of mothers had incomplete antenatal visits. Significant risk factors identified during analysis included pregnancy-induced hypertension \([OR=2.65(1.46-4.80)]\), gestational age < 37 weeks\([OR=5.92(3.53-9.92)]\), inadequate antenatal care\([OR=2.38(1.51-3.73)]\), smoking\([OR=4.54(1.37-15.02)]\), illiterate mothers\([OR=1.78(1.16-2.73)]\), mothers with chronic diseases\([OR=2.22(1.25-3.94)]\), low income\([OR=1.65(1.07-2.53)]\).

**Conclusions**
It is generally recognized that the aetiology of LBW is multi factorial and many risks for LBW can be identified before pregnancy occurs. Increasing the use of health services during pregnancy, concerted media campaign regarding the effect of maternal education, tobacco consumption, socioeconomic status, were recommended.
**Background** Stunting is a key public health concern in several developing nations including Pakistan. According to PDHS 2012 and NNS 2011-12, Sindh province is reported to be severe stunting among <5 years and threatening household food insecurity.

**Purpose** Assessed stunting rates, household food insecurity and their association, in order to inform nutrition policy and program design for communities facing malnutrition and food insecurity.

**Methodology** A comparative cross-sectional study was conducted in rural setting of Naushahro Feroze district in Sindh province, Pakistan. All randomly selected households with children aged 23 to 59 months in UC Dabhro (Darbelo), District Nausharo Feroze were interviewed and investigated. A total of 106 children and their 106 households were studied. Food security data were collected using the Household Food Insecurity Access Scale. Stunting status of the children was assessed by measuring Height-for-Age and WHO Anthro software for standard deviation (SD, Z-scores). Statistical analysis was done using SPSS-20 software package.

**Results** The prevalence of stunting was 56.6%. Of the 106 households studied 24.5% were food secure while 21.7%, 19.8% and 36% had mildly, moderately and severely food insecure respectively. Results showed significant association of stunting and household food insecurity in low income families, illiterate and unemployed parents, large and Joint families, p value <0.005.

**Conclusions** Short and long term measures are required to mitigate food insecurity and stunting (malnutrition) in these settings especially with low income and low educated households.

**Background** Dr. Nasim Ilyas along with other co-authors namely Dr. Muhammad Imran and Dr. Saleem Murtaza Khan conducted this study to assess IYCF practices, 6-24 months of age using WHO indicator in Children Hospital, PIMS, Islamabad, Pakistan from 20/03/2012 to 20/09/2012.

**Purpose** To determine the infant and young child feeding (IYCF) practices, 6-24 months of age using WHO indicator in Children Hospital, PIMS, Islamabad.

**Methodology** This cross-sectional descriptive study was carried out at Lactation management clinic, Children Hospital, PIMS, Islamabad from 20/03/2012 to 20/09/2012. A total of 305 mother-baby pairs were included in the study. Information collected regarding IYCF practices was entered in the Performa. A scoring system was used to access the outcome of the study.

**Results** The WHO core indicators for IYCF were as follows; early initiation of breastfeeding in 64.9%, exclusive breastfeeding under 6 months in 68.6%, continued breastfeeding at 1 year in 57%, introduction of solid, semi-solid or soft foods before 6 months in 71.1%, minimum dietary diversity in 26.9%, minimum meal frequency of 3-4 times a day in 60.3%, minimum acceptable diet and consumption of iron rich or iron fortified foods in 21.3%. Commonly used food groups were staple foods (cereals, rice, potato) in 95.7% and milk products (milk, cheese, yogurt) in 91.5% children. The mean score for IYCF practices was 3.58±1.39. IYCF practice scores were poor, good and ideal in 49.8%, 46.9% and 3.3% respectively. The mean IYCF practices score was not significantly different between rural-urban residence or the professional status; p = >0.05.

**Conclusions** Infant and young child feeding practices observed in this study are far from the ideal situation.
Background: High default rate is still a major challenge for the success of Severe Acute Malnutrition (SAM) programs. Children who default from completing treatment have 6.6 risk of death. In Sana’a city, available data indicated 59% defaulter rate among SAM children treated at outpatient therapeutic centers (OTCs) during 2014. Identify defaulting risk factors is important to guide intervention and improve program outcomes.

Purpose: To identify risk factors for defaulting from OTCs.

Methodology: We conducted a prospective cohort facility based study where data collected at admission about SAM children aged 6-59 months who are newly admitted at Sana’a OTCs during August and September 2015 and at discharge from the program. Odds ratio (OR) with 95% confidence interval (CI) used to measure the magnitude of association.

Results: A total of 339 SAM children were admitted. The default rate found to be 55%. The identified risk factors for default were: poor accessibility (e.g. unavailability of OTC in the resident area), poor satisfaction with staff and system (e.g. long waiting time, poor confidence in staff, and unavailability of Plumpy Nut/medications), treatment related (e.g. child did not gain weight, and did not like Plumpy Nut), and poor OTCs services acceptability (e.g. difficulty in attending OTC in weekly basis, unsuitable working time, and lack of family support).

Conclusions: SAM default rate in Sana’a city is still three-folds more than SPHERE standard therefore there is a need for regular monitoring of defaulter rate and establishing community mobilization team. Increase community awareness about importance of completing follow up visits, expansion of OTC services, ensure regular medications and Plumpy Nut supply, and train OTCs staff on communications skills and SAM treatment protocols were recommended.

Background: Infection by the hepatitis B and hepatitis C viruses are the most common cause of nosocomial infection that can lead to cirrhosis and cancer. More than one million persons die every year due to complications of hepatitis B and hepatitis C including cirrhosis and liver cancer. Despite strict infection control procedures, blood donor screening, availability patient and staff vaccinated against hepatitis B haemodialysis is still a considerable source for transmission of viral hepatitis B & C.

Purpose: To measure the seroconversion rate of hepatitis B and C among hemodialysis patients in three hospitals in Baghdad, 2015.

Methodology: A retrospective incidence study was conduct on maintenance hemodialysis patients in Alkindi, Karama and Baghdad hospitals. Data obtained from patients records in the hemodialysis centers in these hospitals. A positive seroconversion was defined as any hemodialysis patient having positive ELISA test for HBsAg or anti-HCV antibody who was negative to these tests at the start of hemodialysis.

Results: The total number of hemodialysis patients in the three hospitals was 886. Currently there are 251 patients positive for HCV (prevalence 28%). Around 21% (169 Patients) were seroconverted to HCV. There are 21 patients with HBV (prevalence 2%). The number of patients who were seroconverted was four (seroconversion rate 0.4%). There are eight patients with combined HBV and HCV. The prevalence of HCV is 49%, 7.9%, and 56% in Alkindi, Karama and Baghdad Hospitals, respectively, and the seroconversion rate in these hospitals was 37%, 4.5% and 50%, respectively. The prevalence of HBV was 4.5%, 0.9%, and 4% in Alkindi, Karama and Baghdad Hospitals, respectively, and the seroconversion rate in these hospitals was 0.5%, 0% and 1.6 %, respectively.

Conclusions: There is a serious risk of nosocomial infection particularly for hepatitis C in the hemodialysis centers in Baghdad. Close monitoring and analysis of different activities implemented in hemodialysis center.
Background Intravenous drug use is one of the major causes of HIV epidemic in Pakistan which is concentrated among key population groups with incidence as high as 52% in some cities of Punjab.

Purpose The study intended to assess the epidemiological characteristics among the HIV positive injection drug users, to determine the associated risk factors and to give recommendations to the concerned authorities for necessary actions.

Methodology We conducted an exploratory study in district Rahim Yar Khan in May, 2014, using secondary data from January, 2013 to February, 2014 from health department, community welfare organization and local Non-Governmental Organization (NGO). Interviews were conducted with the enrolled clients, HIV tested Intravenous drug users and their spouses on a pretested structured questionnaire.

Results A total of 610 Intravenous drug users and 60 spouses/sexual partners were identified and interviewed. Prevalence of HIV was 33.6% (n=205) among injection drug users and 15% (n=9) in spouses/sexual partners respectively. Male to female ratio was 20:1 with mean age of 20.6 years. Fifty-eight percent (n=354) started drug use at the age of 18-25 years. Fifty-five percent (n=335) were labourer on daily wages while 35.6% (n=217) were beggars. Among all enrolled clients, 60% (n=366) never went to school and 35% (n=213) had education above primary level. Among 45% (n=274) sexually active participants, 90% (n=247) had never used condom and 86% (n=236) had no knowledge of HIV/AIDS.

Conclusions Poverty, unemployment and lack of education were observed as some of the associated risk factors. On our recommendations, district government made a liaison with the district teaching hospital for mapping, registration and free of cost base line investigations of high risk group. A “living support program” for harm minimisation awareness was launched with the help of community welfare department and NGO.

Background Sundas Foundation (NGO; arranges blood camps for patients) reported high prevalence of HIV among volunteer prisoner donors. It initiated intense media coverage and inquiries by the provincial legislative assembly. So the Inspectorate of Prisons Punjab planned to conduct this study.

Purpose To assess the prevalence and risk factors for HIV infection among prisoners in prison X of Punjab Province.

Methodology All willing Prisoners incarcerated in prison X were screened for HIV infection during 15th February – 31st August, 2013. All HIV positive cases were tested for Hepatitis-C and Tuberculosis too. CD 4 count and haemoglobin were low among 48% cases. For case-control analysis, 22 cases and 44 controls were selected. Cases were more likely to be involved in addiction (OR 11; 95% C.I. 2.8-43), injection drug use (OR 9.7; 95% C.I. 2.0-44), narcotics sale & theft (OR 7.0; 95% C.I. 2.3-24), sex with commercial sex workers (OR 34; 95% C.I. 3.0-335) and homosexuality (OR 16; 95% C.I. 1.8-144).

Conclusions Prevalence of HIV among prisoners was 14 times high than general population. Multiple risk factors for HIV transmission were identified among prisoners. Screening of prisoners at the time of entry, targeted health education and risk reduction programs were recommended for prisons. Sundus Foundation decided not to collect prisoner blood donations in future.
Hepatitis and HIV

Abstract Code: 2016-OTH-75

Presenter Name: Ms. Nabil Al abhar  | Authors: A. Al Hababi, E. AL Gunaid, G. Moghram, A. Al Serouri  | Country: Yemen

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Title: Occupational Exposure to Needle Stick Injuries and Hepatitis B Vaccination Coverage Among Clinical Laboratories Staff, Sana’a City, Yemen, 2015

Background Laboratories staff (LS) handling blood or biological samples is at risk for accidental injury or exposure to blood-borne pathogens with possible disastrous and long life implications. Hepatitis B virus (HBV) vaccination of LS can minimize these risks.

Purpose To determine incidence of occupational exposure to needle stick injuries and hepatitis B vaccination coverage among clinical laboratories staff.

Methodology Across-sectional survey was conducted on clinical LS who are involved in handling and processing laboratories’ samples at the main public and private clinical laboratories at Sana’a city. Data collection was done using a semi-structured questionnaire based on available standards. The quality control officer at each laboratory was trained to distribute the questionnaires and ensure proper filling. After reviewing, coding and cleaning the questionnaires, data was entered and analyzed using frequencies and percentage as well as searching for possible associations where P <0.05 was be considered statistically significant.

Results A total of 362 respondents participated, 60% reported injury while working in laboratories of them 15% were injured during the last 3 months where only 55% received first aid after injury exposure. Although the history of injury is higher among males (63%) than female (58%), and among non-postgraduate respondents (62%) than graduates (56%), these differences were not statistically significant. Only 76% was vaccinated for HBV. The risk of injury was significantly lower among those who received the biosafety manual. Furthermore, both vaccination coverage and receiving first aid found to be significantly higher among private LS and those who received the biosafety manual.

Conclusions Occupational exposure to needle stick injuries is still a major problem among LS. Strengthening supervision, legalizations of HBV vaccination for all LS, and optimal LS practices regarding management of sharps can minimize risks and prerequisites.

Non-Communicable Diseases

Abstract Code: 2016-FWBD-98

Presenter Name: Dr. Abdulrazaq Hasnawi  | Country: Iraq

Presenter Email: farislami@gmail.com

Title: Epidemiological Profile of Type 1 Diabetes Mellitus, Karbala Province, Iraq, 2013

Background Type1 Diabetes Mellitus (T1DM) accounts for 5-10% of DM. Annually, 76,000 children aged <15 years develop T1DM worldwide; 9,100 in the Middle East and North Africa. The morbidity and mortality in developing countries are increasing due to lack of basic means for having reasonable glycemic control. In Iraq, Ministry of Health had some data on T2DM, but limited data on T1DM.

Purpose To estimate incidence, prevalence, identify basic characteristics, and control status of T1DM, Karbala Province, Iraq, 2013.

Methodology Two designs were used: a cross sectional study to assess the prevalence, demographic and clinical data and a longitudinal incidence design. All T1DM patients lived and registered in Karbala province aged <15 years were included. Patients were searched for using the registry books in the popular clinics, school health, and Karbala DM clinic. Data were collected using the registry books which provide information new and total number of patients besides basic demographic data, address and medications and direct interview to obtain clinical data. Controlled DM defined as having HbA1C of <7. Estimated midyear population was obtained from the statistics department in Karbala Province.

Results The total number of T1DM patients <15 years was 199; 190 identified; and 54 were newly registered in 2013. T1DM prevalence is 39.75/100,000 and the incidence is 10.78/ 100,000 of <15. Females were 51.1%, mean age was 9.21 + 3.38 years and 67.4% were urban. About 21% had positive family history of T1DM. About 32% had controlled DM. About 22% presented as diabetic ketoacidosis (DKA). During 2013, 15% developed DKA and 9% developed hypoglycemia. About 11% admitted to the emergency word and 48.5% required hospital admission.

Conclusions Apart from Gulf States, the incidence and prevalence are close to neighboring countries. T1DM constituted a burden on health facilities and patients’ families. Education on adherence to therapy, diet and modified lifestyle are recommended.
Background The prevalence of Non-Communicable Diseases (NCDs) is increasing throughout the world. In the year 2000 there were 31 million NCD deaths, and this number is projected to increase to 52 million by 2030. Lifestyle changes, particularly unhealthy diet and physical inactivity (PI) have been contributed to the increased prevalence of NCDs.

Purpose to measure the prevalence and identify high risk groups of PI among adults with hypertension and/or diabetes in Baghdad, Iraq, 2015-2016.

Methodology A cross-sectional study conducted on a sample of 584 male and female adults with hypertension and/or diabetes who attended Primary Health Care Centers (PHCCs) for any complaint. Patients with comorbid illnesses or severe complications that make the interview not feasible were excluded. Two questionnaires applied and filled by direct interview. The first questionnaire for socio-demographic information and the second was the WHO 16-item Global Physical Activity Questionnaire (GPAQ), scored as per standard protocols used to measure the physical activity variables. A metabolic equivalent task (MET) score of less than 600 per week indicates PI.

Results The mean age of the patients was 48.9±11.8 years; 57.2% were females; 69.5% were currently married; and 83% were from urban areas. Around 73% had HTN, 53% had DM (92% type2 DM), and 27.1% had both HTN and DM. The prevalence of physical inactivity was 58% (95% CI: 53.5-61.5%). The study population was found to be least active in the leisure time domain (6.7%) compared with the work (45.7%) and transport (47.6%) domains. Logistic regression analysis revealed the following significant risk factor: Aging (OR=1.047), Divorced/Widowed (OR=1.323), Retired/housewives (OR=1.331), Illiteracy (OR=1.439), obesity (OR=1.46) and lack of advice on OI (OR=3.443).

Conclusions Physical activity is a neglected part of lifestyle pattern of HTN and DM patients. Advising the patients on the physical activity is the most important recommendation that can make a significant impact.

Background Saudi Arabia faces one of the highest prevalence rates of type 2 diabetes mellitus (T2DM) globally. However, there are no credible local data on the trends and future projections of the disease. In addition, the relevant international studies underestimated the true prevalence rates.

Purpose To study trends in T2DM prevalence in Saudi Arabia, predicted its future levels up to 2022, and quantified the impact of reducing some risk factors on disease prevalence trends.

Methodology The “Saudi IMPACT Diabetes Forecast Model” integrates data on population, obesity and smoking prevalence trends in Saudis aged ≥25 years to estimate trends in T2DM prevalence (1992-2022) using a Markov modelling approach. Model incorporated the estimated diabetes incidence, case-fatality, total mortality, RR of diabetes if obese, and RR of diabetes if smoker. Model data inputs were obtained from different sources, including local departments, medical literature and assumptions. Model results were validated against local data and the Global Burden of Disease study, where the model produced reasonably close results to both studies.

Results Prevalence of T2DM among adult Saudis was estimated to rise substantially between 1992-2022 from 8.5%-39.5%, if the current observed trends in obesity and smoking continue to increase. In men, prevalence was predicted to increase from 8.7%-39.2%, while in women, it will rise from 8.2%-39.8%. If the trends in obesity start to decline by 10% between 2010-2022, a relative reduction of 5% in diabetes prevalence could be achieved. If the prevalence of obesity was halted at the 2010 levels, a 2% relative reduction in diabetes prevalence could be attained by 2022.

Conclusions T2DM is a major public health challenge in Saudi Arabia, and its burden will increase substantially in the next decade. Preventive measures directed to reduce risk factors, particularly obesity, can result in reasonable reduction of T2DM prevalence, and therefore should be an urgent action.
Background Obesity is currently a global pandemic. In 2007, the prevalence of overweight and obesity in Jordan was 66.4%. There is limited research examining the association of body mass index (BMI) and demographic determinants in Jordan.

Purpose The study aimed to determine the prevalence of overweight and obesity, and to explore its association with demographic determinants, and correlates in Ajloun and Jarash governorates, Jordan.

Methodology A systemic multistage sample was used to select 1800 households from Ajloun and Jarash governorates in Jordan during October, 2011. A randomly selected member of adults aged 18 years and older was selected, and personally interviewed from each household. The main outcome measure (overweight or obese) was defined as a BMI 25 kg/m2. BMI association with selected socio-economic determinants was explored using multivariate logistic regression.

Results Among all participants 60.4% were either overweight, or obese with no statistically difference between Jarash (60.3%) and Ajloun (60.4%). Multivariate analysis showed that females (OR: 1.4 [95% CI: 1.1-1.8]), participants with a total family income < 300 JDs per month (OR: 1.3 [95% CI 1.0-1.6]), and unemployed (OR: 1.4 [95% CI 1.1-1.8]) were more likely to be overweight or obese. The odds for overweight or obesity has increased significantly with every year increase of age (OR: 0.95 [95% CI 0.94-0.96]). Governorate and education were not significant predictors.

Conclusions Overweight and obesity were considerably prevalent in both governorates. Interventions to reduce overweight and obesity, such as diet and physical activity programs should be designed and implemented considering significant socio-demographic determinants (sex, age, income, and employment status).

Background The prevalence of childhood obesity has been increasing at worrying rates across the globe. This pattern has been noted in developing countries undergoing rapid epidemiological transitions, including Eastern Mediterranean Region. Beside emotional and psychological problems, childhood obesity can lead to life-threatening conditions including diabetes, high blood pressure, heart disease, cancer, and other disorders like liver disease, early puberty or menarche, sleep problems, skin infection, and asthma. Children should be considered the priority population for intervention strategies.

Purpose To measure the prevalence and identify behavioral determinants of overweight and obesity, among primary school children, Baghdad, Iraq.

Methodology A descriptive cross-sectional study involved a random sample of 620 students obtained from a random sample of 10 primary schools, followed by a systematic random sampling applied in each school to achieve the sample size. A questionnaire sent to the parents to gather socio-demographic characteristics, dietary habits, daily physical activity, steroids drug use, family history of obesity, and parents’ education and job. The height (cm), weight (Kg), BMI (Kg/m2) and BMI-for-age were done for each student. Child weight status categorized based on WHO 2007 Growth Reference.

Results The prevalence of overweight and obesity were 16.3% and 14%, respectively. Binary analysis revealed the following significant risk factors: Female sex, increased age, breakfast skipper, high daily meal frequency, more sweets and bicarbonate beverages consumption, child inactivity, not having sports, Steroids drug use, family history of obesity, high father BMI, and high mother BMI. Logistic regression revealed the following significant risk factors; high meal frequency (OR: 2.6; P=0.006), more sweets and bicarbonate beverages (OR:2.2, P=0.002), positive family history of obesity (OR:2.5; P=0.01), child inactivity (OR: 3.1; P=0.001) and not having sports (OR: 4.1; P=0.000).

Conclusions The prevalence of overweight and obesity were high among primary school children. Early intervention to combat childhood obesity should be considered.
Non-Communicable Diseases

Abstract Code: 2016-NCD-108
Presenter Name: Dr. Walaa Talib Yousif | Country: Iraq
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Title: Post-Traumatic Stress Disorder Among Internally Displaced Persons in Baghdad, Al Karkh, 2015

**Background** Since June 2014, more than 3 million Iraqi people left their homes and converted into Internally Displaced Persons (IDPs). IDPs are scattered in different provinces. The majority are living within the host community; some live in the mosques and official buildings and few are in the camps. The critical current situation in Iraq and the violence affecting the population especially the IDPs can result in different degrees of psychological traumas that precipitate Post-traumatic stress disorder (PTSD).

**Purpose** To estimate the prevalence of PTSD among IDPs and identify high risk groups.

**Methodology** A cross sectional study conducted on convenient clusters of IDPs aged 12+ years resided in mosques in Saydia area in Baghdad Al- Karkh. Data were collected using a standardized questionnaire to gather basic socio-demographic data and PTSD checklist, which consists of three parts: “avoiding”, “storming emotion” and “physical reactions”. The questionnaire and the checklist were filled through direct interview with IDPs. PTSD was considered if the score was more than 22. Very high score was considered if the score was > 68, high if its 45-67 and moderate if its 22-44.

**Results** The total number of the study group was 315 IDPs. Female to male ratio is 1.14:1. Around 59% aged 12-35 years, 34% aged 36-55 years and 7% aged above 56 years. About 44% came from Ninawa, the remaining were from Anbar. The prevalence of PTSD was 90.5%, classified as 8.6% very severe PTSD, 49.5% as severe, 32.4% as moderate. The prevalence of PTSD was significantly higher among females (52%) than males (38%) (P=0.04). No significant associations found between PTSD and age, previous residence and educational status (P>0.05).

**Conclusions** PTSD is very common among the IDPs, particularly females and those coming from Anabr. Larger scale survey among IDPs in other parts of Iraq and urgent psychological support are recommended.

Non-Communicable Diseases

Abstract Code: 2016-FWBD-157
Presenter Name: Dr. Ghazi Sharkas | Authors: T. Saheb, K. Arqoub | Country: Jordan
Presenter Email: ghazisharkas@yahoo.com
Title: Sedentary Lifestyle Among Adults in Jordan, 2007

**Background** Sedentary lifestyle is a major risk factor for physical and mental problems, such as cardiovascular, musculoskeletal diseases, and psychological stress. About 60% of the world’s population is not sufficiently physically active in leisure time or during work and social activities.

**Purpose** This study aimed to determine the prevalence of inactive Jordanian adults and describe their demographic and behavioral characteristics.

**Methodology** The study used data from the behavioral risk factors surveillance survey (BRFSS) which was conducted in Jordan in 2007. The sample size was 3654. Respondents who were physically inactive for more than 240 min daily (sleep time not included) were considered to have a sedentary lifestyle. Data were analyzed with the program SPSS.

**Results** The prevalence of sedentary lifestyle was 82.8% (2965 respondents), with a mean sedentary time of 587 min (95% confidence interval 581–594 min). Among the physically inactive adults, 52.6% were men, one third of them aged 35–44 years. Sedentary lifestyle was reported by 30% of those with secondary level of education or above. Of those with sedentary lifestyle, 37.6% were housewives and 37.5% were employees; 66% of them were overweight and obese. Of the physically inactive people, 2.5% had history of heart failure and 1.3% had history of cerebrovascular accidents; 57.2% of them tried to engage more in physical activity and almost three quarters of them were interested in improving their dietary habits.

**Conclusions** Most Jordanian adults have sedentary lifestyle, which emphasizes that there is a public health problem. Many of them are attempting to change their sedentary status. Therefore, there is an urgent need to launch an applicable national plan that enables people to practice a healthier lifestyle.
Non-Communicable Diseases

Abstract Code: 2016-MCH-272
Presenter Name: Ms. Dalal Youssef  | Author: N. Ghosn  | Country: Lebanon
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Title: Road Traffic Injury Surveillance in the Bekaa, Lebanon 2013-2015: A Descriptive Analysis from Emergency Department Based Surveillance System

Background  Road traffic injuries (RTIs) are one of the leading causes of death and disability worldwide. In Lebanon, 7% of all reported death from hospitals in 2010 were due to external causes including RTI. The only data available are the police statistics which report the number of death without any information about severity.

Purpose  RTI surveillance is recently established in the Bekaa to acquire better knowledge about the epidemiology of RTI and to test functionality of such surveillance system.

Methodology  All hospitals (public and private) in the Bekaa (n=25) are asked to complete a standardized form for any injured patient resulting from a RTI, presenting to the emergency departments (ED). The form includes data on demographic, external cause, body lesions, vital clinical presentation at ED. Forms are sent to the epidemiological surveillance program where data is coded using ICD-10, entered and analyzed using epidata and SPSS.

Results  1576 cases were reported between 2013 and 2015. In 2015, the male to female ratio was 2.16 and the highest percentage of cases (44.4%) was in the age group [15-29]. 51.3% of the accidents occurred during the afternoon time. Head (46%) and extremities (75%) were the most injured part in the body. Between 2013 and 2015, a decrease of 0.7% in revised trauma score (RTS) less than 4 and an increase of 3.9% of injury severity score (ISS) ranged between 15 and 75 was shown (p=0.04). The probability of survival at one month was improved, an increase from 86.1% in 2013 to 94.1% in 2015 was registered (p=0.035).

Conclusions  The RTI affected basically the youthful population. RTI surveillance system shown its success in Bekaa region in collecting accurate data on injuries severity. In the future, there is need to compare the surveillance data with the other sources as the police and the red cross data.

Non-Communicable Diseases

Abstract Code: 2016-MCH-61
Presenter Name: Dr. Eshrak Alfalahi  | Author: A. Assabri  | Country: Yemen
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Title: Burden of Road Traffic Injuries (RTIs) in Sana’a city, Yemen, 2015

Background  Millions of people die yearly on world’s roads with multi-sectorial involvement of its consequences. No well-established surveillance system in Yemen to address exact burden of RTCs to set preventive strategies.

Purpose  Study aims to describe Pattern of RTIs in Sana’a city. Results of this study may be used by MOPH&P for surveillance planning.

Methodology  A hospital-based study conducted in two referral hospitals, from 24 August to 8 October 2015. A sample size of 156 casualties was calculated using open-epi. All road traffic injuries cases presented to Emergency Departments (ED) during study period were studied and analyzed. Data were collected everyday by trained data collectors in ED. A pretested questionnaire modified from WHO injury surveillance form was used to collect data by trained data collectors under our direct supervision.

Results  82% were males and 18% were females. The highest percent (34%) were among age group 20-29. There were 28% children below 16 years of age. The highest percent of injuries was among vehicles occupants (38%). Pedestrians constituted 32%, of them 48% were injured by four wheelers, while motorized two wheelers injured 32%. None used seat belt or helmet. 15% of 2-wheeled riders aged less than 18 years. Risky driving behaviors contributed in 85% of the casualties. Furious driving represented 37%, with significant relation with severity (chi-square=24, df=12, P=0.02). Head injuries represented the highest percent among drivers and passengers of 4-wheeled (43% and 46% respectively). Lower limbs injuries represented the highest among motorcycles riders and passengers (44% and 53% respectively). Case fatality rate of 6.8/100 casualties was recorded.

Conclusions  Establishment of a multi-sectorial integrated injury surveillance system is a must. It is time to consider RTI classification for different road users and to improve access to adequate pre-hospital and hospital trauma care. There is an urgent need for traffic laws enforcements.
Non-Communicable Diseases

Abstract Code: 2016-OTH-53

Presenter Name: Mrs. Reem Abu Shomar  | Authors: I. Lubbad, W. El Ansari, I. Al Katib, H. Alharazin  | Country: Palestine
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Title: Smoking, Awareness of Smoking-Associated Health Risks, and Knowledge of National Tobacco Legislation in Gaza, Palestine

Background Tobacco use is risky behavior among youth that extends into adulthood and considered as a risk factor shared by four major non-communicable conditions. Tobacco use and the treatment/management of tobacco-related diseases incur financial burdens, particularly for low-income countries.

Purpose To assess university students’ extent of smoking, knowledge of smoking health risks, and awareness of existing national anti-smoking laws.

Methodology Self-administered questionnaire was employed across 7 universities (1,104 students, equal proportions of males and females) located in Gaza Strip, Palestine.

Results About 55% of participants reported ever smoking, 31% were current cigarette smokers, and 36% were ‘strictly’ (only) narghile (water pipe) smokers. Mean age of smoking initiation was 17 years. Smokers had less knowledge of smoking associated health risks than non-smokers. Students’ knowledge of existing anti-smoking laws was generally low (11.3–25.5%) and significantly more smokers had knowledge about existing laws than non-smokers. About 81% of current smokers tried to quit smoking at least once during their life, 53% felt ready to quit smoking if cessation assistance was provided, 17% were not ready to quit, and 30% were reluctant/felt unsure if they were ready to quit. Most students (94.3%) reported that there were no smoking cessation centers, or did not know if such centers existed.

Conclusions There is a lack of knowledge about the existing national anti-smoking legislation among university students. Multi-level interventions and actions are required by policymakers, educators, and non-governmental agencies to prevent smoking among university students, and to educate them on tobacco cessation counselling, on the dangers of tobacco use, and about effective stress management strategies to help them cope with stressors. Smoking cessation interventions are required to address both cigarette and narghile use. Efforts need to be invested in ensuring compliance with legislation and for follow-up activities to enforce the anti-smoking laws through coordinated actions across ministries and departments.

Background NCDs are considered the primary cause of death among adults, being implicated for most (78%) of the total deaths in Kingdom of Saudi Arabia (KSA) during 2014, of which CVDs were responsible for about (46%) of these deaths. KSA was exposed to a vast epidemiological transition, rapid urbanization and ageing population. Subsequently, major modifications have happened in lifestyle behaviors such as: increased caloric and high fat-diet consumption; reduced physical activity and dramatic increase in obesity prevalence among different age-groups. This has all lead to increased prevalence of NCDs, including diabetes mellitus and CVDs.

Purpose This study is aiming to assess the prevalence of noncommunicable disease risk factors (NCDRFs) among Saudi university employees and their families. As well as estimate the cardiovascular risk (CVR) amongst the study population in the following 10 years.

Methodology A cross-sectional study was conducted on 4,500 university employees and their families aged ≥ 18 years old, using the WHO STEPwise approach to surveillance of NCDRFs. Cardiovascular risk (CVR) was then calculated for participants using the Framingham Coronary Heart Risk Score calculator.

Results The mean age of participants was 39.3±13.4 years. The prevalence of NCDRFs was as follows: low fruit/vegetable consumption of <5 portions/day (88%), physical inactivity (77%), overweight/obesity (BMI ≥25 kg/m2 and ≥ 30kg/m2 respectively, 72%), obesity (36%), abdominal obesity measured by WHtR (59%), dyslipidaemia (22-37%), diabetes (22%), hypertension (22%) and current tobacco use (12%). One quarter of participants were estimated to have >10% risk to develop cardiovascular disease (CVD) within the following 10-years.

Conclusions The prevalence of NCDRFs was found to be substantially high among the study population. To combat the future expected burden of NCDs, particularly CVDs, a proposed prevention program for employees’ cardiovascular wellness should be designed and recommended to be implemented and institutionalized within the university.
**Background** End-stage renal failure (ESRD) has become a major public health problem and it is highly prevalent globally. More than (1.4) million patients receiving renal replacement therapy (RRT) globally, with an annual incident rate reaching 8%. In Yemen 7000 new patients every year, the estimated annual incidence of ESRF in Sana’a region is 385 per million population.

**Purpose** Identify the risk factors of ESRF in Sa’adah governorate of Yemen and provide recommendations to prevent and control ESRF.

**Methodology** A hospital based case control study of ESRF patients attending Aljomhory Hemodialysis center in Sa’adah. We interviewed 349 persons, 86 of them were cases attending Aljomhory HD center for regular hemodialysis and 263 were control who are healthy persons, the case definition of ESRF is GFR (< 15 mL/min/1.73 m²) or very high albuminuria (>300 mg/24 h).

**Results** The mean age for the cases and control was 43.3 ± 17.7 and 32.3 ± 12.98 years respectively, with slight male predominance among cases 55%. Illiteracy rate was 49% and 38% among cases and controls respectively OR 2.13 (95% CI, 1.28-3.55). Hypertension was 49%, 10% among cases and controls respectively OR 8.3 (95% CI, 4.5-14.9). Diabetes mellitus was 13%, 5% among cases and controls respectively OR 3.05 (95% CI, 1.2-7.32). Urolithiasis was 41%, 3% among cases and controls respectively OR 21.87 (95% CI, 9.6-49.9). Recurrent infection of kidney or urinary tract was 79%, 28% among cases and controls respectively OR 9.64 (95% CI, 5.34-17.31). Family History of ESRF 29%, 5%, among cases and controls respectively OR 7.88 (95% CI, 3.81-16.29)

**Conclusions** Hypertension, Recurrent urinary tract infection, urolithiasis, family history of ESRF and diabetes mellitus were potential risk factors for ESRD in Sa’adah, north of Yemen. Follow up for those factors well help to prevent and control ESRF.

**Background** Afghanistan is suffering from double burden of diseases including communicable and non-communicable.

**Purpose** The aim of this study was determine the risk factors for NCDs and among adults population in Kandahar City, Afghanistan.

**Methodology** A provincial cross-sectional study was conducted from October to November 2015 on the prevalence of NCD risk factors using the WHO STEPS adapted instrument. The study enrolled a random sample of 1165 adults of age group of 25-70 years. Data were collected using a structured questionnaire for assessing non-communicable diseases and their risk factors. Fasting venous blood sample was collected to assess the lipid profile and fasting blood sugar. Anthropometric measurements of the participants were also taken. Data was analyzed using SPSS version 20.

**Results** Out of all respondents 597 (51.2%) were females and 568 (48.8%) males with a mean age of 38.3±11.2 years. Around two thirds (73.2%) were illiterates and (79.3%) were married. 9.7% were smokers and (16.3%) were mouth snuff users. Sixty percent of respondents ate fruits less than 3 days per week and 60% ate vegetables three days or more per week. Almost 6% of practiced vigorous physical activity and 21.3% of subjects reported doing moderate physical activity. More than half of subjects were overweight or obese. 32.2% had high blood pressure and 22% percent recorded diabetic. Level of high cholesterol was 30.4%, high triglycerides was 35.7%. Furthermore, high level of low density lipoprotein (LDL) was 50.9% and high level of high density lipoprotein (HDL) was 46.6%. The mean level of total cholesterol, HDL, LDL and triglycerides 183 mg/dL, 45.8mg/dL, 107.3 mg/dL and 154.6 mg/dL were respectively.

**Conclusions** The findings of study revealed the country is experiencing both communicable and noncommunicable at the same time. It is recommended on focusing of interventions to prevent and control the noncommunicable diseases.
Background Arbaeenia is the largest religious MG in Iraq. MG associated with variety of health ailments that increase the morbidity and mortality among attendees.

Purpose to assess the availability of basic services, human resources, different medical supplies, equipment and medications in Mobile Clinics established during Arbaeenia MG and comparing availability of the basic supplies between Ministry of Health (MOH) and non MOH clinics.

Methodology A cross sectional study was conducted on all Mobile Clinics established along the way of Ya-Hussein to the end of boundaries of Najaf province with Karbala province, held to provide health services to the visitors of Arbaeenia MGs who used to come walking from the nearby provinces to Karbala city. A checklist was developed to identify availability and adequacy of basic services, human resources, necessary equipment, supplies and medications.

Results The total number of Mobile clinics was 72; 9 were related to MOH; the remaining non MOH was established by other governmental and non-governmental agencies. The average number of patients managed /Day in 75% of mobile clinics was more than 1000 patients/day. The structure, space, and available basic services are inadequate particularly in non MOH clinics. In non MOH clinics, physicians were present in 46% of clinics while about 89% in MOH. The mean number (MN) of available medical equipment in MOH clinics was 10.7 while 5.3 in Non MOH. The MN of available Drugs in MOH clinics was 11.9 while 8.8 in Non MOH. The MN of available basic supplies for infection control in MOH clinics was 7 while 4.8 in Non MOH.

Conclusions Although Mobile Clinics provide services to large number of people, there was a profound shortage in availability and adequacy of the basic services, supplies and medications particularly in non MOH clinics. Setting standards for basic services, list of basic medical supplies and medications are recommended.

Background The measurement of the level of health community is usually undertaken by studying mortality and morbidity due to different causes. In practice, mortality statistics are easier to come by than morbidity data, and can provide much useful information on the disease patterns in the community.

Purpose The objective of the study is to define the cause of death in Jordan.

Methodology Cross sectional study. Reviewing all death notification forms for the year 2012 Coding all causes of death using ICD-10. Selecting the leading cause of death using WHO rules. Analyzing data using SPSS.

Results A number of 15,557 death notification forms were reviewed and classified, taking in consideration the selection criteria for the underlying cause of death according to the International Classification of Diseases (ICD-10). The mortality data analysis showed that the top 4 leading causes of death are: 1. Circulatory system diseases (36.7%), where Ischaemic heart diseases rank first (11.4%), followed by Hypertensive diseases (10.6%) and Cerebrovascular diseases (9.1%) 2. Neoplasm's (16.2%) Malignant neoplasm of trachea, bronchus and lung (2.5%) followed by small intestine, colon, rectum and anus (1.8%) and MN of breast (1.7%) 3. External causes of mortality (9.1%), due mainly to Transport accidents (5.9%); 4. Endocrine, nutritional and metabolic diseases (8%) with Diabetes mellitus (7.2%) being the main cause. 29% of infant deaths due to Respiratory distress of newborn and respiratory conditions originating in the perinatal period. And 30% of infants died from congenital malformations 76% of total deaths dying from non-communicable diseases.

Conclusions Non-communicable disease is the main cause of death in Jordan. To avoid premature deaths we need to work on behavioral risk factors. To decrease infant mortality improvements of maternity services is a must.
**Background** With today’s protracted regional crises, challenges to health-care systems are accentuated and vulnerable populations of women, children and elderly are primarily affected. Elderly in Lebanon constitute around 10% of its population, have one of the highest prevalence of non-communicable diseases in the region, but have a weak pension system. Recently, the government increased hospitalization coverage for elderly to 100% with no efforts to address ambulatory care.

**Purpose** Identify the patterns and predictors of ambulatory health services utilization among a representative sample of elderly in Lebanon to serve as a baseline for future comparisons and provide evidence needed for development of programs and policies.

**Methodology** This is based on analysis of secondary data from a cross-sectional study of 508 elderly conducted in 2013 to assess dementia prevalence in Beirut, and two semi-urban and rural districts. The Anderson model for health services utilization was considered to determine predictors of use classified into predisposing, enabling and need factors. Bivariate and multivariable analyses of two major outcomes were considered: use of private physician services and use of public services including health-care centers, physicians and other health professionals.

**Results** Utilization was low, ranging from 2% for ‘dental’ to 5% for ‘public’ and 23% for ‘private services. Use of Public services was significantly higher for those residing in semi-urban and rural areas, among low educated and never married elderly. Private physician services were significantly more commonly used by elderly with health insurance and those with lower self-perception of health.

**Conclusions** There is an underutilization of ambulatory health services by Lebanese elderly with regional disparities. Improving accessibility to and availability of health services outside the capital might balance the use of services between private and public sector. Yet, providing health insurance as part of a comprehensive health-care plan for elderly would have the highest impact.

**Background** Vital registration is the continuous, compulsory and universal recording of vital events (births, marriages, divorces and deaths) providing a base for policymakers and public health surveillance.

**Purpose** Objectives of the study are to identify the strengths and weaknesses of the present systems and recommend future strategies.

**Methodology** Evaluation was done in January 2014 at Federal level. Literature, documents and available record were reviewed. Existing stakeholders were identified and engaged. Focus group discussions were carried out with representatives of National Database and Registration Authority (NADRA), Federal Bureau of Statistics (FBS) and National Institute of Population Studies (NIPS). The CDC’s Updated Guidelines for Evaluating Public Health Surveillance Systems 2001 was used to gather the information.

**Results** Civil Registration Management System (CRMS) of NADRA is simple and good in timeliness and stability while poor in flexibility, data quality, representation, low coverage, acceptability. FBS has good acceptability, simplicity, stability & flexibility were average while data quality, timeliness & representativeness were poor. The acceptability and stability of NIPS were good, simplicity, flexibility, timeliness & data quality were average while representativeness was poor. Sensitivity and PVP of all three systems were not possible to calculate.

**Conclusions** All are project based systems, having different objectives/targets, providing fragmented information and are inadequate arrangements for vital statistics. FBS conducts annual Population Demographic Survey (PDS) providing updated picture of indicators related to maternal, child health and family planning. NIPS is focused on indicators regarding fertility, family planning, nutrition, HIV/AIDS, maternal and child health. Sub-standard birth and death certificates and ignorance of health department in the process and inadequate budgetary allocation are the major gaps identified. A country-wide integrated comprehensive civil registration and vital statistics system is required to be established which collects and disseminates the vital information of the country. The system should have effective legal support to ensure continuous compulsory registration.
**Background** The consumption of drugs in the Palestinian health system is high, in comparison with other developing and developed countries. We believe that there is irrational use of drugs, tendency to over drug prescription, and patient easy acquisition of drugs from different health providers.

**Purpose** The aim of the study was to assess essential drugs availability, prescribing and dispensing processes as practiced at governmental primary health care facilities at Bethlehem district.

**Methodology** A cross-sectional prospective study of drug use that was conducted in 10 Ministry of Health primary health care facilities in the year 2009 at Bethlehem PHC district area. A quantitative approach using the “WHO drug use indicators” in a form of standardized structured WHO indicator forms was employed for collecting the sought data.

**Results** The study showed that average number of drugs prescribed per encounter was (2) drugs; all drugs were prescribed by brand names; the percentage of encounter with an antibiotic prescription was relatively high (34 %) especially for children under 5 years of age; the percentage of encounters with an injection prescribed was rather low (3 %); but the percentage of drugs prescribed from essential drugs list was very high (100%). Average consultation time was (3.9) minutes; the average dispensing time was very short (65) seconds; the percentage of drugs actually dispensed was high (90%); percentage of drugs adequately labeled was only (27%); and patients’ knowledge of correct dosage was high (92%). Availability of a copy of Essential Drugs List in the studied clinics was (70%).

**Conclusions** The study recommends improving rational drug and antibiotic uses; improve using the generic names of drugs through guidelines and proper training for health personal, and conducting similar studies at the other districts or other sectors/providers and also in Gaza, to allow for comparison studies between the districts and between areas.

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**Background** Migration and mobility facilitate high-risk sexual activities. Qualified Industrial Zones (QIZ) in Jordan are typical workplaces for socialization.

**Purpose** An occupational-based behavioural assessment survey was done to examine the prevalence of unsafe sexual behaviour, sexually transmitted infection (STI)-related knowledge, health and work-related conditions, and correlates of practicing unsafe sex among domestic and foreign male workers in QIZs in Jordan.

**Methodology** 230 Jordanian and 480 foreign male workers aged ≥18 years who had worked in a QIZ for 12 months or more were sampled using a multi-stage sampling. Face-to-face confidential interviews were conducted with voluntarily consented workers. A standardized questionnaire collected information on worker’s sexual behaviour, STI-related knowledge, and health and work-related conditions. The primary outcome was practicing unsafe sex. ‘Unsafe sex’ was defined as sex with a non-regular sexual partner with inconsistent condom usage.

**Results** Overall, 74.3% of workers reported lifetime sexual experience. The proportion of lifetime unsafe sex was similar among domestic (31.8%) and foreign (35.6%) workers. Of those, 59.2% of domestic and 68.1% of foreign workers started practising unsafe sex after joining the QIZ. Rates of lifetime unsafe sex were significantly higher among those who had their sexual debut after joining the QIZ in domestic (aOR, 2.2, 95% CI 1.1 to 4.4) and foreign workers (aOR, 2.4, 95% CI 1.4 to 4.1). Among the domestic workers, being 18–24 years old (aOR, 4.9), unmarried (aOR, 4.8), working in the QIZ for 5–8 years (aOR, 5.0), sometimes/frequently shopped with foreign workers (aOR, 2.1) or were current/exalcohol drinkers (aORs, 3.4) were independently significantly associated with higher odds of practicing unsafe sex.

**Conclusions** A significant proportion of domestic and foreign male workers had been practising unsafe sex. Not only foreigners but also domestic male workers associating with foreign workers are at high risk of unsafe sex. Tailored interventions to promote safer sex in multinational workplaces are needed.
Background
Nosocomial infections have been recognized as a critical problem affecting the quality of health care provided in hospitals. At least one third of all nosocomial infections are preventable by optimal infection prevention programs. A significant proportion of infections result from cross-contamination, by the hands of Health Care Workers (HCWs).

Purpose
To observe both the provided facilities for hand hygiene and compliance of Hand Hygiene practices of HCWs working at the Emergency department of the four Mina hospitals during Hajj season of 2012. To make recommendations, to motivate, improving hand hygiene compliance of HCWs and hand washing facilities.

Methodology
An observational descriptive cross-sectional study, conducted at the Emergency Departments of the four Mina Hospitals during Hajj season 1433H-2012G, Saudi Arabia. The sample include all Doctors and Nurses in those departments (n=243). Each participant was selected randomly and unobtrusive observed for WHO 5 Moments.

Results
Of total 243 of Doctors & Nurses were Observed for hand hygiene compliance; (45.8%) were doctors, (45.3%) nurses but the difference was not significant, and Alwade hospital recorded the highest adherence to hand hygiene (64.1%), while Alwade hospital recorded the least (30.8%). The overall compliance rate was 45.5%, and Hand hygiene adherence was statistically significant among males and females’ doctor was lower in male’s doctors. Alcohol hand rub at 77.4% (425) was the favored way for hand hygiene compared with washing with soap and water at 8.4%, also cleaning tools significantly varied across hospitals.

Conclusions
There is a different between the four hospital hand hygiene facility and instruments which reflect in the compliance rate which show increase in compliance rate where there are available hand hygiene facility. It proved that the AHR had an excellent affect in improving hand hygiene compliance rate where it is available. Further study is needed to explore the reasons for non-compliance.

Background
Case studies are an effective and interactive method of adult learning. In the European and North American public health setting they are frequently used as exercises when training field epidemiologists on the topic of outbreak investigations. In Sudan, field epidemiological capacities need to be strengthened on national and peripheral levels. As case studies can be applied in different countries irrespective of their actual situations and requirements there is a need to develop case studies for the Sudanese context.

Purpose
We aim to share the Sudanese experience with the development of country-specific case studies as a training tool for epidemiologists involved in outbreak investigations.

Methodology
Within the German Partnership Program for Excellence in Biological and Health Security, the Robert Koch Institute’s (RKI) surveillance unit trained nine senior surveillance experts from the Federal Ministry of Health of Sudan on the topic of case study development and facilitation skills. For guidance, a ten-step practical guide for these topics adapted from European Center for Disease Prevention and Control staff was introduced.

Results
First, participants were familiarized with the characteristics of case studies. Afterwards they were split in two groups, of which each was expected to develop a separate case study. After defining goals and learning objectives for the addressed audience, each group chose a story based on an existing outbreak investigation conducted in Sudan in the past. They developed outlines with synopsis and drafted a detailed timeline for the following months, in which the case studies were written under supervision of RKI staff. The results were entitled “Acute watery diarrhea outbreak in North Kordofan State, 2006” and “Unexplained fever in Sudan 2015”.

Conclusions
When piloting these case studies in a workshop on outbreak investigation in May 2016 in Khartoum, participants evaluated them as beneficial educational tools in outbreak investigation training in Sudan. The material is currently under revision.
**Background** Abyan governorate was recurrently affected by cholera outbreaks since 1970. The 2011 epidemic resulted in 14,000 cases and 130 deaths. Prevention of cholera can only be effective if community perceptions and practices are well understood.

**Purpose** Assess the knowledge, attitudes and practices (KAP) relating to cholera among residents in a high cholera-prone and non-prone areas.

**Methodology** A comparative cross sectional KAP surveys were conducted in cholera-prone and none cholera- prone areas. At each area, the caretakers from 199 randomly selected households were interviewed using a pre-designed questionnaire covering socioeconomic, KAP, Water Sanitation and Hygiene (WASH) indicators. Odd Ratio (OR) with 95% Confidence Interval (CI) was calculated to test for significance.

**Results** The following socioeconomic attributes found to be significantly higher in cholera prone area: illiteracy: OR 2.3 (CI: 1.3-3.4); low income: OR 28 (CI: 12-63), and overcrowdings: OR 13.2 (CI: 7.5-23). The following WASH indicators were significantly higher among families living in cholera prone areas: not treating drinking water: OR 13 (CI: 4.8-33), have only one latrine: OR 30.6 (CI: 17-54), and sharing latrine: OR 13 (CI: 3.9-43). Contrarily, the following WASH indicators were lower in cholera prone area: availability of soap at hand washing facility: OR 3.3 (CI: 2.1-5.1), washing hands after toilet: OR 4.7 (CI: 3.0-7.2), and cleanliness of water container: OR 4.5 (CI: 2.6-7.8). While, level of knowledge about cholera symptoms is significantly better in cholera prone area e.g. cholera is causing diarrhea: OR 2.8 (CI: 1.6-3.8) or vomiting: OR 2.4 (CI: 2.8-4.4), knowledge regarding cholera-prevention measures were lower e.g. treating water before drinking: OR 4.1 (CI: 1.7-9.7) and washing fruits/vegetables before eating: OR 8.1 (CI: 4.1-16).

**Conclusions** Health education together with improving WASH practices are the corner stones for cholera prevention.

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**Other**

**Abstract Code:** 2016-EOH-270

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**Title:** Outbreak of Typhoid Fever in Shaheed Murad Colony of District Jaffarabad, Balochistan, Pakistan – July 2015

**Background** On 25th, July 2015 MS DHQ Hospital reported 50 typhoid fever cases. On the request of Department of Health, a joint FELTP & Health department team visited the area on 26th July, 2015 to identify the source of outbreak and formulate preventive measures.

**Purpose** To identify the source of outbreak and formulate preventive measures.

**Methodology** A case-control study was carried out to identify risk factors, Investigation conducted from 2nd – 8th August 2015. Hospital records was checked and Active case finding was done. A case was defined as a resident of Shaheed Murad Colony having fever >38°C and with one of the following symptoms: abdominal discomfort, vomiting, diarrhea and positive Typhoid test between 1st July to 31st July, 2015. Cases were enrolled through active case finding. For each case 1 age- and sex-matched control was enrolled.

**Results** Findings 90 cases were identified (over all attack rate = 2.25%), male to female ratio 2:1, with mean age of 28 years (1-70 years). 47% were in age group 25-54 years followed by 15-24 years age group; Symptoms were fever 100%(n=90), vomiting 68%(n=76), abdominal pain 61%(n=68) and diarrhea 50%(n=56). No death was reported. 56 % (n=50) serious cases were hospitalized. Spot map showed clustering around 02 water sources, i.e. tape water and ground water.100% positive cases were using tap water and only 5% of cases who were using ground water. OR 6.0, (CL 3.0-12.8 and p value <0.05), showing strong association between tap water and illness.

**Conclusions** Tap water was contaminated due to damaged lines. It was the most probable cause of outbreak. Repair of water lines and proper chlorination of drinking water was recommended. Health department strictly took preventive measures through repair of damaged water supply lines, chlorination of water storage ponds and health education campaigns were also conducted to give awareness to community regarding health and hygiene.
Background Chickenpox infection is an acute common disease caused by the varicella zoster virus (VZV). In 1998, the World Health Organization (WHO) recommended that routine childhood varicella vaccination be considered in countries where the disease is a relatively important public health and socioeconomic problem, and where high sustained vaccine coverage can be achieved.

Purpose To determine: 1- the trend (occurrence, age and gender distribution, seasonal variation) of registered clinical cases of chickenpox in Iraq from 2007-2011. 2- the need for the use of chickenpox vaccine in Iraq and putting a plan for its use accordingly.

Methodology Retrospective descriptive study.

Results Frequency of clinical cases shows an obvious rise in the registration of chickenpox cases from 21798 case in 2007 to 74195 in 2011 with possible outbreaks occurred in 2008 and 2011. Rate of occurrence of clinical chickenpox cases also shows an obvious rise in the occurrence (73.41/100000 in 2007 to 222.61/100000 in 2011). The rate in 2008 and 2011 is suggestive of a possible outbreak. The same seasonal distribution was observed from 2007 to 2011 being highest in the spring season. The highest registered number of chickenpox cases was in provinces of high population density. Regarding gender distribution, there was sustained preponderance for the males over females with nearly the same percentage over the years. Age distribution of the registered cases had shown that most of the cases occurred in those of age 5-14 years (65%), only 1% occur in those greater than 45 years.

Conclusions 1- There is a rising trend in the registration of chickenpox cases. 2- Most cases occur in less than 15 years. Males are a little bit higher than females. 3- The highest frequencies were reported in March, April, and May. 4- Most of the cases were registered in Baghdad, Ninawa, Dihok, and Al-Basrah.

Background On 29th January 2016, the print media reported 49 cases of watery diarrhea from village Ranjho Noon, Tharparkar. On the directives of Director General Health, a team of FELTP fellows was constituted to investigate the reported outbreak and recommend control measures.

Purpose To investigate the reported outbreak, to know the magnitude, to know the cause and recommend control measures.

Methodology Descriptive followed by a case control study was carried out. A case was defined as any person resident of village Ranjho Noon having loose stools & vomiting with any of following symptoms; abdominal pain, blood in stool, fever and dehydration from 28th-30th January 2016. Active case finding was carried out in the village Ranjho Noon by using a pretested questionnaire. Food history was taken and water resources were identified. Age and sex matched controls were identified from the same village. Data was analyzed using Epi Info 7.1.

Results A total of 63 cases were identified. Among cases female were n=38 (60%). Mean age was 21 years (range 1-70 years). Most affected age group was 11-20 years n=28 (44%) and 21-30 years n=16 (25%). Symptoms of vomiting & nausea were present in all cases n=63 (100%) with dehydration n=48 (76%), abdominal pain in n=47 (74%), diarrhea in n=22 (34%), fever in n=9 (14%) and blood in stool n=7 (11%). Out of 63 cases, 50 had consumed “Lussie” a yogurt drink (OR =3.04; CI= 1.59-7.69; p value <0.001).

Conclusions This outbreak was most likely due to consumption of contaminated leftover “Lussie” yogurt drink. It was prepared one day before and stored at inappropriate temperatures. Health education was imparted to community and “Lussie” vendors. Recommendations were made to avoid left over food and to store cooked foods at appropriate temperatures.
Background MERS-CoV is first reported in Saudi Arabia in 2012. Around 70,000 Egyptian pilgrims travel to Mecca to perform the rituals every Hajj season posing a concern of the spreading of MERS-CoV among Egyptian pilgrims.

Purpose Monitor the risk of spread of MERS-CoV Detect the circulating influenza virus subtypes Compare the demography and vaccination status between influenza lab confirmed and influenza negatives pilgrims Identify the influenza lab confirmed rates among ILI cases.

Methodology Survey was conducted by the Epidemiology and Surveillance Dept team, around 10% from each flight 28 Sept.-5 Oct. 2015. After providing verbal consent, pilgrims were interviewed. NP and OP swabs (and sputum samples whenever possible) were collected and tested by RT-PCR. Results were analyzed using SPSS.

Results 973 out of 1051 (92.6%) enrolled from 15 flights with a median age of 57 (1-96), 44% male, vaccination coverage was 20% (193/973); influenza lab-confirmed cases 10.4% (101/973), only 21.8% (22/101) showed ILI symptoms yet no significant difference between lab-confirmed influenza cases and those tested negative regarding vaccination status, ILI, being female nor above 55 years old (O.R. 1.1, 1.2, 1.0 and 1.0 respectively). The predominant strain was Flu A/H1N1 49(49%), A/H3 34(34%), and Flu B 17(17%). In 2015 the predominant subtype was Flu A/H1N1 whereas during the previous seasons 2012-14 it was Flu B.

Conclusions In 2015, there were no cases of MERS-CoV identified, further follow-up of returning pilgrims for 14 days to capture any secondary case among them, in-depth studies regarding the best behavior change communication and effective health education messages are highly recommended.
Outbreak Investigation-RD

Abstract Code: 2016-EOH-93

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Title: An Outbreak of Middle East Respiratory Syndrome at a Healthcare Facility in Qassim Saudi Arabia, February 2016

Background On February 22 2016, an outbreak of Middle East Respiratory Syndrome-Corona Virus (MERS-CoV) began in Qassim Saudi Arabia at King Fahd Hospital, Buraidh Central Hospital, Alrass Hospital and Alhabib Hospital.

Purpose Conduct a contact investigation to identify risk factors for MERS-CoV transmission and potential control measures.

Methodology We defined a case as a person visiting or working at one of the above mentioned facilities from 22 Feb to 29 March, 2016 who developed fever and respiratory symptoms and was MERS-CoV positive by PCR. Cases were either primary or secondary depending on exposure to a known case prior to symptom onset. Contact was defined as spending prolonged period of time indoors in the presence of a case prior to symptom onset. Contact was defined as spending prolonged period of time indoors in the presence of a case. We conducted medical chart abstractions and patient interviews to determine timeline, exposures and potential contacts. We inspected the adequacy of infection control practices.

Results A total of 37 cases were PCR positive for MERS-CoV. Age range 22- 91 years (mean 53, SD 22); 24 (65%) cases were males; 16 (43%) were primary cases and 21 (57%) were secondary. Among the secondary cases were 7 healthcare workers (HCW). One secondary case was a dialysis patient, who presented with epigastric pain, nausea, vomiting, fever and uncontrolled hypertension. Despite the ongoing outbreak, MERS-CoV infection was not suspected until 7 days after admission. This period without respiratory precautions lead to a large number of laboratory positive contacts. In addition, we noted HCWs in the emergency department intubated MERS patients and other aerosol generating procedures without use of personal protective equipment and in open work areas.

Conclusions Complicating medical conditions can lead to delay in diagnosis of MERS even in patients present with typical symptoms. MERS-CoV should always be considered in febrile patients presenting with respiratory symptoms in Saudi Arabia. Improvements in infection control practices were also recommended.

Outbreak Investigation-RD

Abstract Code: 2016-EOH-291

Presenter Name: Dr. Ehsan Ghani    | Author: M. Khan    | Country: Pakistan

Presenter Email: drehsanghani73@gmail.com

Title: Outbreak of Influenza A H1N1- 2009 in Critical Patients in a Tertiary Care Hospital of Rawalpindi - March 2013

Background In March 2013, out of 14 suspected, 6 confirmed cases of pandemic H1N1-2009 with 4 deaths were reported from a tertiary care hospital in Rawalpindi. An investigation was initiated to identify the source, assess infection control practices, enlist contacts and recommend preventive strategies.

Purpose To identify the source, assess infection control practices and recommend prevention.

Methodology Review of records and interviews with physicians were undertaken. For contact tracing relatives of the patients were interviewed using a structured questionnaire. A suspected case was defined as anyone presenting with cough, flu or fever with breathing difficulty. Contact was defined as anyone who provided care for the patient, had close physical contact or stayed with a confirmed case. A confirmed case was defined as a suspected case confirmed for H1N1 by PCR testing.

Results On 2nd March 2013, a 65-years-old patient, known hypertensive and diabetic, was admitted to the hospital with shortness of breath who subsequently expired the same day. His daughter, a 38-year-old, known asthmatic, was admitted on 7th March 2013 and expired on 9th March 2013. On 14th March 2013, the treating physician, a 47-year-old male, presented with shortness of breath, subsequently admitted to ICU and expired on 18th March 2013. On 30th March 2013, a pregnant women admitted in ICU was diagnosed as H1N1 positive and expired on 4th April 2013. 30 close contacts including hospital staff and relatives were observed for 10 days. Daughter and brother of the physician were confirmed as H1N1 positive and recovered after treatment.

Conclusions Fatalities attributed to H1N1 had some co-morbidity which probably made them vulnerable. Sensitization of health care staff to keep vigilance and strict adherence to infectious control protocols. Health educating of close contacts also for infection prevention protocols were also recommended. Diagnostic vigilance, early isolation and vaccination may prevent transmission of influenza in high-risk individuals.
Outbreak Investigation-RD

Abstract Code: 2016-EOH-9

Presenter Name: Dr. Muhammad Saleem | Country: Pakistan
Presenter Email: saarcuk@yahoo.co.uk

Title: Outbreak Investigation of Suspected H1N1 Cases in District Swabi, Pakistan During November 2015 to January 2016

Background On 27th November 2015, District Health Office Swabi informed Health Directorate, Khyber Pakhtunkhwa about suspected H1N1 cases in the district. Provincial Disease Surveillance & Response Unit was asked to investigate. Surveillance system for seasonal influenza (H1N1) already in place at Bacha Khan Medical Complex (BKMC) Swabi was immediately channelized for smooth data flow. Surveillance data was analyzed to identify clusters and associated risk factors.

Purpose District was visited for investigations and control measures.

Methodology A case was defined as any person of any age group and gender belonged to district Swabi presenting with acute respiratory infection with measured fever of ≥ 38°C and cough, with onset within last 10 days /or 16th November, 2015 to 30th January, 2016. Hospital record and patient charts were reviewed for information. Suspected contacts were followed for 5-7 days. Throat swab samples for viral isolation were taken and sent to National Institute of Health (NIH) Islamabad. Apart from demographics, risk factor information was also collected.

Results 81 suspected Seasonal Influenza patients were reported from 23rd Nov 2015 to 23rd Jan 2016. Lab reports of all patients were received from NIH wherein 30 (37%) patients were confirmed with Inf-A(H1N1) pdm 09, 04 (5%) patients had Influenza-B while 47 (58%) patients were found negative. 29 (97%) of confirmed 30 patients for H1N1 were discharged as being stable, while 01 (3%) female patient had died having history of Diabetes Mellitus & Hypertension. Among the suspected cases; age range was 16-110 years with mean age of 44 years, 32 (40%) were male and 49 (60%) were female.

Conclusions Guidelines including case definition, management and required preventive measures were sent to all district health offices and hospitals. Awareness session was arranged for healthcare staff of BKMC Swabi with emphasis on case identification, personal protective measures and hand washing techniques.

Outbreak Investigation-VPD

Abstract Code: 2016-EOH-344

Presenter Name: Dr. Mahmood Riaz | Country: Afghanistan
Presenter Email: dews.kunar@gmail.com

Title: Investigation of Measles Outbreak in Kunar, Afghanistan, 2016

Background Suspected measles cases were reported in March 2016 from Garo village of the Kunar Province. We investigated the outbreak to confirm the etiology, identify risk factors, and make recommendations to prevent future outbreaks.

Purpose To investigate measles outbreak in a village in eastern region of Afghanistan, 2016.

Methodology A measles case was defined as any person with fever and maculopapular rash and cough, coryza or conjunctivitis. We reviewed medical records and surveyed the affected village; six blood samples were collected for testing by ELISA-IgM at the Central Public Health Laboratory.

Results A total 25 people were surveyed in the village and six (24%) measles cases were identified in Garo village. All of six samples tested positive for measles. The mean age of ill children was 14.8 years, median age was 10, 5 years, and range 1-35 years. One-dose measles vaccination coverage among 1-5 year-olds was 19 of 25 (76%). Independent risk factors for measles were vaccine refusal and migratory behaviour. We vaccinated 180 (75 male and 105 female) children ranging in age from six months to five years. Risk ratio [RR]: 0.063, (95%CI 0.0091-0.4399).

Conclusions Low vaccination coverage was the likely cause of this outbreak. We recommended strengthening routine-vaccination; including routine outreach-services for the surrounding area, and periodic campaigns to ensure World Health Organization recommended 95% two-dose measles vaccination coverage.
Outbreak Investigation-VPD

Abstract Code: 2016-EOH-356
Presenter Name: Dr. Obafemi Babalola  | Authors: K. Ibrahim, I. Ismaila, S. Gidado, P. Nguku, A. Olayinka  | Country: Nigeria
Presenter Email: drfemibabs@yahoo.com
Title: A Measles Outbreak in an Urban Slum in Kaduna State, Nigeria: March 2015.

Background
Despite availability of an effective vaccine, measles epidemics continue to occur in Nigeria. In February of 2015, a suspected measles outbreak was reported in Rigasa, Kaduna State, Nigeria.

Purpose
We investigated the outbreak to confirm the etiology, identified risk factors and instituted control measures.

Methodology
Cases were identified through active search and health facilities’ record review. Vaccination status was determined by caregivers’ history and verification of immunization card. Fifteen blood samples were collected for measles IgM Enzyme Linked Immunosorbent Assay (ELISA) testing. Using an unmatched case-control study design, we enrolled 75 cases and 75 controls. Cases were children younger than 5 years in Rigasa, with fever, rash and either cough, coryza or conjunctivitis from January to March 2015. Controls were selected from the neighborhood. Analyses for frequencies, proportions, odd ratios and logistic regression were performed. Confidence interval was set at 95%.

Results
We identified 159 cases with two deaths (CFR = 1.3%). Males were 80 (50.3%). Eleven of 15 serum samples (73%) tested positive for Measles IgM. Fifteen (20%) cases were immunized for measles compared to 23 (31%) controls. Among the 112 children unvaccinated for measles, attack rate was 54%. Associated risk factors for measles were incomplete or non-receipt of routine immunization (RI) [OR=14.0 (95%CI 1.8-111.4)], being unvaccinated for penta-3 [OR=4.0 (95%CI 2.0-9.0)] and measles vaccine [OR 2.0 (95%CI 0.8-3.7)], having physical contact with measles cases [OR=6.0(95% CI 2.7-11.2)] and having a caregiver younger than 20 years [OR=2.6 (95% CI 1-6.8)]. Following modeling, all the risk factors remained significantly associated with occurrence of measles infection in this community.

Conclusions
We confirmed that this was a measles outbreak. We conducted mass measles vaccination for children less than one year. We recommended strengthening measles vaccination and educating caregivers’ on the importance of completing routine immunization schedule.

Outbreak Investigation-VPD

Abstract Code: 2016-EOH-256
Presenter Name: Dr. Faiz Ahmed  | Authors: S. Kumar, N. Masood  | Country: Pakistan
Presenter Email: faizahmedkhatti@gmail.com
Title: Measles Outbreak in Village Sanwan Tharani Taluqa Jati, District Sujawal, Pakistan 2016

Background
On 29-4-2016, print media reported two deaths and five suspected measles cases in Village Sanwan Tharani, District Thatta. On the directives of DG Health, Sindh FELTP fellows were deputed to evaluate the magnitude of the outbreak and institute control measures.

Purpose
To know the magnitude, to know the cause and recommend the control measure in order to prevent such outbreak in future.

Methodology
Active case finding was conducted via a house-to-house survey in the village using a pretested semi-structured closed-ended questionnaire. A case was defined as any person < 10 years of age living in Village Sanwan Tharani having fever & maculopapular rash with any of the following cough, conjunctivitis and coryza within the last 30 days. Data was collected on demographics, clinical symptoms, complications and associated risk factors. Analysis was conducted using Epi info 7.1.

Results
A total of 17 cases, 5 from health care facility including 2 deaths were identified. Among the cases 35% (n=6) were male and 65% (n=11) were females. Age ranged 1-9 years with mean age of 4 years. Most affected age group was 0-5 years, n=12 (70%) followed by age group 6-9 years n=5 (30%). Attack rate was 34% and case fatality rate was 11%. The immunization status evaluation showed n=12 (70%) cases had not received measles-1 vaccination. Reasons for non-vaccination were misconceptions on vaccination n=5 (29%), facility far away n=8 (47%), lack of visiting vaccinator n=4 (24%).

Conclusions
The measles outbreak was most probably due to poor immunization status. The outbreak was controlled by implementing the mop-up vaccination activities in the village & adjoining areas along with community sensitization for vaccination. Vitamin A capsules were given the affected children. Community health session were conducted on awareness on measles vaccination. Regular awareness campaigns regarding routine vaccination were recommended to prevent future outbreaks.
Outbreak Investigation-VPD

Abstract Code: 2016-EOH-275

Presenter Name: Dr. Fareed Larik    |  Author: M. Naveed    |   Country: Pakistan
Presenter Email: drfareed76@gmail.com
Title: Measles Outbreak Investigation in Village Thareecha, District Larkana Sindh, Pakistan, 2015

Background On December, 15, 2015, polio vaccination team during NID campaign found and reported large number of children with rash and febrile illness in village Thareecha, District Larkana. DG Health Sindh deputed a team of FELTP fellows to investigate the suspected outbreak.

Purpose To evaluate the magnitude, identify risk factors and formulate recommendations for control of the outbreak.

Methodology Active case finding was done. A case was defined as any child resident of Village Thareecha presenting with rash and fever and one of the following sign/symptoms; cough, coryza and conjunctivitis during 1-25 December 2015. Information was collected on demographics, date of onset of illness and risk factors on pretested questionnaire. Descriptive statistics, uni-variate and multivariate analysis was done using Epi info 7.

Results A total of 20 measles cases were identified. Case fatality rate was 20%. Male to female ratio was 1:0.5. Mean age was 36 months (range 11-72 months). The most frequent sign/symptoms were rash and fever n=20 (100%) conjunctivitis n=15, (75%) cough n=14 (70%) and coryza n=13 (65%). Age group 1-5 years (AR 3.1%) was most affected followed by age group <1 year (AR 2%). The vaccination status of 85% cases was unknown. Out of 20 cases, 14 were unvaccinated against measles (OR 9.3: CI 95%: 3-28, P value 0.00). Mothers education (OR 0.2, 95% CI 0.05- 0.62, p<0.05), household <5 persons (OR 0.3 95% CI 0.1-0.09 p<0.05) and parents’ knowledge about measles disease (OR 0.2, 95% CI 0.09.0.82 p<0.05) were found to have a protective effect.

Conclusions Outbreak was most probably due to poor immunization status. Vaccination of the high risk group of children (<10 year) through mop-up vaccination campaign and awareness raising of community on importance of childhood vaccination was carried out. Vitamin A was also administered. VPD surveillance system should be strengthened with increase outreach immunization activities.

Outbreak Investigation-VPD

Abstract Code: 2016-EOH-188

Presenter Name: Dr. Haris Mustafa     |   Author: M. Saleem    |   Country: Pakistan
Presenter Email: dr.harismustafa@gmail.com
Title: Outbreak Investigation of Suspected Measles Cases in Jehangira, District Nowshera, Khyber Pakhtunkhwa, Pakistan in April 2016

Background On 27th April, 2016 a leading newspaper reported the deaths of 6 children from suspected measles in Union Council (UC) Jehangira having Afghan refugees camp in district Nowshera. A team from Provincial Disease Surveillance & Response Unit visited the camp.

Purpose To confirm outbreak, carry out necessary investigations, take appropriate control measures and make recommendations to prevent further spread.

Methodology A case of measles was defined as any child <15 years of age, resident of UC Jehangira, district Nowshera with fever, non-vesicular maculopapular rash and at least one of the following: cough, coryza and conjunctivitis presenting between 1-30 April, 2016. Active case finding was conducted and deaths were verified. Health facility record was reviewed. Information was collected on demographics, clinical presentation, vaccination status and disease outcome.

Results 40 cases including 3 deaths (CFR=7.5%) were verified in specified time period. 51% (n=20) cases were reported from UC Jehangira. 59% (n=23) cases were male. Male to female ratio was 1.4:1. Mean age of cases was 49.4 months and age range was 5-144 months. All these cases (100%) were clinically diagnosed as suspected measles. Epidemiological curve showed propagated source of person-to-person transmission, typical of measles outbreak. Pneumonia being the most common cause accounted for 100% of the deaths. Routine vaccination status of cases was; 21% zero dose, 8%, 15% and 23% had received penta-1, penta-2 & penta-3 doses while 33% were fully immunized.

Conclusions Outbreak was due to low routine vaccination coverage leaving large number of susceptible children in the community. Cases were not detected and notified timely due to weak surveillance. Mop-up vaccination with vitamin-A were carried out to limit the outbreak. Awareness sessions were carried out. Strengthening of vaccine preventable disease surveillance and capacity building of health facility staff for timely detection of cases were recommended.
**Outbreak Investigation-VPD**

Abstract Code: 2016-EOH-73

Presenter Name: Dr. Jamshed khan  |  Author: E. Ahmed  |  Country: Pakistan

Presenter Email: dr.jamshedkhanzada@hotmail.com

Title: Epidemiological Investigation of Measles Outbreak in Mansehra Colony Landhi, Town Karachi. Sindh, Pakistan, March 2015.

**Background**
On 3rd March 2015 the local newspaper published a report regarding measles outbreak in Mansehra Colony Landhi, Karachi. In response to the report the Executive District Office health Karachi constituted a three members investigating team with the objectives to investigate the outbreak and propose recommendations for control of outbreak the affected Mansehra colony Landhi having population of 600 households.

**Purpose**
To estimate the magnitude and extent of outbreak. Determine the most likely local risk factors of the outbreak. Make recommendations for future prevention and control.

**Methodology**
Investigation was carried out from 4th to 7th March, 2015. Case was defined as a child having 15 years of age residing in Mansehra colony Landhi, with: a generalized rash and fever for three or more days and one or more of the associated symptoms, including cough, coryza or conjunctivitis from 1st March to 7th March, 2015. Active case finding was carried out, line list maintained and six blood samples were taken and shipped to NIH Islamabad for lab confirmation.

**Results**
Sixteen cases were line listed, out of which 75% (n=12) were females. Median age was 9 years (range: 3 to 13 years). All cases were from same family. Index case was 6 years old girl who visited her parents at Baluchistan province (measles endemic) 6 days prior to development of sign symptoms. NIH Lab confirmed four cases positive out of six. As per EPI record all cases were fully immunized against measles.

**Conclusions**
Cases appeared in vaccinated children implicate that either there is some problem with the quality of vaccine, cold chain maintenance or vaccination techniques. Mopping–up activities conducted in Mansehra colony Landhi and surroundings, Health Education sessions conducted by Lady Health Workers on hygiene and disease prevention.

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**Outbreak Investigation-VPD**

Abstract Code: 2016-EOH-303

Presenter Name: Dr. Shumaila Rasool  |  Author: N. Masood  |  Country: Pakistan

Presenter Email: drshumailazubair@gmail.com

Title: Measles Outbreak in Village Sanwan Pahore District Shikarpur November 2015, Pakistan, A Case Control Study

**Background**
Local newspaper reported deaths due to Measles in village Sanwan Pahore in November 2015.

**Purpose**
To assess risk factors and to formulate recommendations.

**Methodology**
Health facilities visited, hospital records checked and active case finding carried out. Surveillance records were reviewed. A case was defined as any person resident of Tehsil Khanpur with Fever, maculopapular rash and any of the following symptoms, Conjunctivitis, Cough, and Coryza from 25th October-25th November 2015. Age and sex matched controls were identified from same population 1:3 ratio. Verbal autopsy carried out from parents of deceased children. Data analyzed using Epi info 7.1.

**Results**
A total of 66 Measles cases identified with median age of 30 (range 7-120 months). Case fatality 6.06% (n=4). Over all attack rate was 2.35%, under 12 months (AR=1.42%).

Most affected age group was between 24-60 months (AR=2%). Male to Female ratio was 1:1. 13.6% (n=9) cases seek medical care. Vaccination status of 84.8% was unknown. 54.54% (n=36) had the history of contact and epidemiologically linked to the cases of nearest union council. Mother education (OR 0.4, 95% CI 0.02-0.09), measles vaccination (OR 0.1, 95% CI 0.06-.32) overcrowding (OR 0.08, CI 0.04-0.18) found to have protective factors. Reasons for not vaccination was unaware about importance of vaccination 34% (OR 0.3), disbelieves on vaccination 31% (OR 2.8), vaccinator did not visit 26.42% (OR 0.4), Facility Far away 6.42%, Ill behavior of vaccinator was 2%.

**Conclusions**
Measles outbreak was due to very low routine immunization coverage and poor health seeking behaviors. There is need of strong supervision and monitoring of routine immunization activities in the district. Health education sessions should be arranged in the community on importance of immunization with active involvement of local stakeholders.
Background

Prior to 2011, measles was at elimination phase in Yemen however, as vaccination coverage dropped due to ongoing political unrest and military confrontation, several outbreaks reported and measles becomes the fourth cause of death among under-five children. During February 2015, the surveillance coordinator of Sa’adah reported an increased number of fever cases with skin rash where a team was sent to investigate. Sa’adah governorate is one of the remote northern governorates that suffers from fragmented power structures and military confrontations.

Purpose

Confirm the cause and source of the outbreak and recommend control measures.

Methodology

Suspected cases defined as fever illness and rash that doesn’t meet criteria for any other illness. The team visited public and private health facilities and surveillance records were reviewed. Active house-to-house search was done where data were collected face-to-face from caretakers/patients. 13 blood samples were collected for lab confirmation.

Results

A total of 260 cases were reported from December 31, 2014 to March 8, 2015 where the peak of epi curve was at week 7, 2015. Cases were reported from two thirds of Sa’adah districts with Razih and Qataber had half of cases. The disease is more prevalent among males (58%) and 70% of cases among 1 – 5 years where 23% were below 1 year. 97% of cases found to be unvaccinated mainly due to poor awareness, wrong believes and lack of outreach. Out of the 13 collected blood samples, 12 cases (92%) were IgM positive for measles by Elisa.

Conclusions

Large measles outbreak has been confirmed among unvaccinated due to poor accessibility by health education activities and outreach services as results of military confrontation. Urgent measles immunization with Vitamin A distribution campaign was launched. Awareness raising campaigns with strengthening routine and outreach immunization services were recommended. Coordination between epidemiological surveillance and expanded program on immunization is a prerequisite.

Background

On April 7, 2016, local print media reported 5 of suspected measles cases and 3 deaths in village Sanwan Gopang, district Hyderabad. On April 8, on directives of DG Health Sindh, FELTP fellows were deputed to investigate the outbreak.

Purpose

To investigate the reported outbreak, to know the magnitude, the cause and recommend the precautionary measures for to prevent such outbreak in future

Methodology

Descriptive followed by case control study was conducted. A case was defined as “any person < 15 years age, living in village Sanwan Gopang, having fever and maculopapular rashes with or without conjunctivitis, corzya and cough in last 30 days”. Active case finding was done. Age and sex matched controls were identified in a ratio of 2:1. Blood samples were collected. Univariate and bivariate analysis were conducted using Epi-Info 7.1.

Results

25 cases and 5 deaths were identified. Among cases, n=14 (56%) were female. The median age was 3 years (range < 1 to 12 years). Most affected age group was between 1 to 5 years n= 21 (84%) with attack rate of 4.5%. Case Fatality was n=5 (20%). The clinical features were fever and rash n=25 (100%), diarrhea n=23 (95%), conjunctivitis n=15 (61%) and pneumonia n=8 (32%). Immunization status of cases showed n=13 (61%) children not vaccinated for Measles-1. The reasons for non-vaccination were misbelief in vaccination n=23 (92%) and unavailability of vaccinator n=2 (8%). Odds of getting measles was low in immunized children as compared to unimmunized children (OR= 0.06, 95% CI 0.02 to 0.21 and p value < 0.001).

Conclusions

The outbreak was attributed to low immunization status of the children due to various reasons. Awareness sessions regarding vaccination were conducted and mop-up activity was carried out. Vitamin A was administered to the affected children. Periodic health education and strengthening of routine immunization coverage were highly recommended.
Outbreak Investigation-VPD

Abstract Code: 2016-EOH-132

Presenter Name: Dr. Ahmed Ehsan | Author: S. Abid | Country: Pakistan
Presenter Email: ehsanlarik@gmail.com
Title: Outbreak Investigation of Pertussis in District Naseerabad Pakistan 2016

**Background** District Health Officer Naseerabad received information about 05 suspected cases of pertussis by Health staff.

**Purpose** Investigate outbreak and institute control Identify associated risk factors.

**Methodology** Descriptive followed by case Control study was conducted. Case defined as “any child less than 15 years of age, resident of district Naseerabad having cough of any type lasting for at least two weeks from 04th January to March 2016”. Active case finding was done through house to house survey. Questionnaire was developed for data collection including demographic, clinical and travel information. Epi info version 7 was used for data compilation and analysis Nasopharyngeal and Oral swab were sent for culture for isolation of microorganisms.

**Results** Total 186 cases identified. Mean age of cases was 2 years and 7 months with range from 4months-15 years. Male Female ratio was 3:1. Case fatality was 3.2 with attack rate of 1.3. Significant statistical associations were found between Nomadic population (OR 12.9; CI 1.4 – 13; p value <0.05) and developing Pertussis. Children with whooping cough were also more likely to still be coughing two months after the start of their illness (P = 0.001), continue to have more than five coughing episodes a day (P = 0.069). Most cases were below two years (82%) and had positive family history of paroxysmal cough (86%). Five cases confirmed to have pertussis by culture methods. Only nine cases were partially vaccinated while 177 were unvaccinated.

**Conclusions** Outbreak was probably transported from Nomadic population of District Mastung. Low access to health facilities probably played role in disease transmission and low vaccination coverage also caused spread of disease. Immediate and sustainable steps were taken; children’s vaccination with penta-valent vaccine in affected and adjoining areas, awareness sessions in community regarding vaccination and mobilize lady health workers and vaccinators to maximize utilization of services.

Respiratory diseases

Abstract Code: 2016-EOH-179

Presenter Name: Dr. Marwa Amin | Authors: S. Refaey, M. Labib, A. Kandeel | Country: Egypt
Presenter Email: dr.marwaamin@yahoo.com
Title: Influenza Virus Positivity and Circulating Subtypes Among Cases of Influenza-like Illness (ILI) and Severe Acute Respiratory Infections (SARI), Egypt, 2012-15

**Background** Seasonal influenza poses a substantial economic burden due to direct and indirect costs. Influenza is a vaccine preventable disease, improved understanding in the geographic circulation of influenza viruses, risk factors and burden are essential for developing effective prevention and control strategies.

**Purpose** • Improve understanding on the epidemiology and seasonality of influenza virus infections • Monitor the circulating influenza virus subtypes • Guide the decision makers in devising effective prevention strategies

**Methodology** The 13 influenza sentinel surveillance sites’ data between 2012 – 2015 were utilized, the demography of mild cases (ILI) were compared to severe cases (SARI), time series was plotted, for seasonality and alert threshold, a moving average of 4 weeks of the aligned 3-year data, accounting for a set of 12 weeks, gave the baseline at week 1 and made up the average epidemic curve on weekly data while the alert threshold is above the average weekly values by 1.645 standard deviations which defines the 90% confidence interval of the mean in order to detect any unusual severe season.

**Results** Lab-confirmed influenza was found in 13% of ILI and 18% of SARI cases; positivity for influenza was similar in cases of ILI & SARI and decreased in ILI in people aged ≥ 15 years. Influenza positivity among severe cases resulted in prolonged hospital stays especially among pregnant women (OR 1.79, 95% CI 1.30-2.47). The most commonly observed influenza virus subtypes were B, followed by A/H3 in ILI and A/H1N1, followed by B in SARI. The seasonality of influenza was November - April peaking in January of every year.

**Conclusions** Finding of this study suggests vaccinating pregnant women, planning the preparedness activities for the coming influenza season before October. Further studies are needed on the effect the Hajj season on the circulating influenza virus subtypes and prevalence of influenza vaccination in the general population.
Respiratory diseases

Abstract Code: 2016-EOH-81

Presenter Name: Dr. Mumtaz Ali Khan | Authors: J. Ahmad, M. Salman, U. Amir, S. Zaidi | Country: Pakistan

Presenter Email: drmomi74@hotmail.com

Title: Resurgence of Influenza-A(H1N1) 2009 in Pakistan, November 2015-April 2016

Background Influenza sentinel surveillance system detected upsurge of the Influenza in some areas during winter seasons.

Purpose To study the descriptive features of Influenza.

Methodology Conducted descriptive analysis of cases from November 2015 to April 2016. Nasopharyngeal specimens tested through RT-PCR. Standard WHO Case definitions were followed. Information collected through pretested questionnaire and analyzed.

Results Total 1246 samples received from all over country where 338(27%) were influenza positive. Samples received from Rawalpindi (n=512/41%), Islamabad (n=400/32%), Lahore (n=202/16%) and Peshawar (n=62/5%). Out of 338 positive cases, 286 (85%) were influenza-A while 52(15%) were influenza-B. Out of 286 influenza-A cases, 214(75%) were H1N1-pdm09 and 72(25%) for influenza H3N2. Among H1N1-pdm09 cases, Islamabad reported 68(31%), Rawalpindi and Lahore 27(13%) each and Peshawar 17(8%). The case fatality ratio(CFR) for H1N1-pdm09 was 8.3% where Islamabad was the most affected with 22 deaths. Major clinical symptoms were fever (n = 212, 88%), flu (n = 221, 92%), cough (n = 207, 86%), body aches (n=205, 85%), sore throat (n=132, 55%), shortness of breath (n=48, 20%) and respiratory distress (n = 19, 8%). Among the 68 positive cases of Islamabad, 21 (31%) had history of contact with positive case. Among 31(46%) hospitalized cases 22 (32%) died where 12(55%) were males. Age groups of fatal cases are: <5yrs (2), 5-20yrs (01), 21-45yrs (02), 46-65yrs (7) and above 65yrs (10). All fatal cases had co-morbidity like chronic cardiac disease (n=6, 27%), chronic hepatitis (n=3, 13%), chronic respiratory disease (n=4, 18%), diabetes (n=3, 13%), infancy & pregnancy (n=2, 9%) each.

Conclusions Present resurgence of H1N1 could be attributed to extreme cold/ dry weather, possibility of virus drift and absence of seasonal vaccination. Fatalities occurred among patients with co-morbidity. The results suggest that many deaths can be prevented with early diagnosis, timely supportive treatment

Respiratory diseases

Abstract Code: 2016-EOH-239

Presenter Name: Dr. Hala Saad | Authors: A. Mansour, S. Al shorbagy, S. Refaey, A. Kandeel | Country: Egypt

Presenter Email: halaaabahaa@gmail.com

Title: Characteristics of Acute Respiratory Infections — Damanhour, Egypt, January 2010–December 2015

Background Acute Respiratory Infections (ARI) are the leading infectious cause of morbidity and mortality worldwide with four million deaths annually. The 2012 ARI mortality rate in Egypt was 2.7 % for lower respiratory infections.

Purpose We aim to describe respiratory viral infections among ARI cases in Damanhour.

Methodology We analyzed active surveillance data for hospitalized ARI cases admitted to three sentinel public hospitals from 2010–2015. ARI was defined as zone sign of acute infection and zone respiratory symptom. Polymerase chain reaction of naso/oropharyngeal swabs were tested to confirm the presence of adenovirus (ADV), parainfluenza (PIV) virus, respiratory syncytial virus (RSV), influenza A and B viruses, human metapneumovirus (hMPV), and coronavirus. Frequencies and chi-square test were used to estimate prevalence and seasonality.

Results Between January 2010–December 2015, 11,480 ARI cases were detected. Children <2 years of age comprised 24.4% of all cases. The overall and highest age-specific mortality proportion for ARI per 1,000 persons was 8.6 (99/11,480) and 37.7 (57/1,510) among persons ≥60 years respectively. During surveillance period, 2015 had the highest ARI mortality 1.1% (23/2,104). Among all cases, the proportion positive for tested samples was 12.6%, (1,338/10,614) for RSV, 6.2% (677/10,997) for influenza B; influenza A subtypes H1N1 4.7% (516/10,997), H3 4.3% (474/10,997), and H5N1 0.1% (9/10,997); and hMPV 4.3% (451/10,547). PIV was tested among 8,197 ARI cases between January 2010–February 2013 and frequencies for subtypes I, II, and III were 0.9% (76), 0.4% (30), and 2.5% (207), respectively. There were 6.5% (351/5,407) adenovirus infections between January 2010–February 2013. Peak seasonality was December, January, February, March, May, and July for H1N1 and H3, RSV, hMPV, adenovirus, influenza B, and all PIV subtype cases, respectively.

Conclusions Seasonality of viruses causing ARI in Egypt differs by type. The burden of ARI is the highest among ages <2 and ≥60.
Respiratory diseases

Abstract Code: 2016-EOH-140
Presenter Name: Dr. Qais Jassar | Country: Yemen
Presenter Email: qais2009@gmail.com
Title: Risk Factors for Acute Lower Respiratory Infection in Under Five Children, Amran Governorate Hospital, Yemen, 2015

Background A cute lower respiratory infection ALRI is a leading cause of mortality in children below five years. Yearly about 120–156 million cases of ALRI occur globally with approximately 1.4 million resulting in death, majority of these deaths occur in developing countries. Yemen Estimates 1.3 million children are at risk of ALRI. Scarcity of information about ALRI in Amran governorate. Identification of modifiable risk factors of ALRI may help in reducing the burden of the disease.

Purpose Assess the risk factors for ALRI in under five children in Amran governorate hospital, Yemen, 2015.

Methodology A hospital based case control study was conducted in Amran general hospital. Sample size was calculate using Epi Info. Interview with caretakers, using questionnaire. Ethical clearance was obtained from the ethical committee in the MoPHP. OR was calculated.

Results 325 under five children, of them 113 cases and 212controls were enrolled in the study. Illiteracy of fathers is associated with ALRI OR =2.15(95%CI=1.19-3.88). Incomplete vaccination is a potential risk OR= 5.36 (2.84-10.11). Children past history of ALRI is a risk factor, OR = 3.29(95% CI=2.01-5.39), and family history of ALRI considered as a risk factor, OR = 4.24(95% CI= 2.55-7.04). Children with past history of rickets are at greater risk to get ALRI, OR= 2.78(95% CI=1.72-4.47), also using biomass for cooking is a risk factor OR = 2.78 (95% CI=1.72-4.47), using wooden fuel for cooking is a risk factor OR = 2.53(95%CI=1.49-4.29). People sharing child’s (bedroom) is significant association with ALRI, OR=3.45 (95%CI=2.09-5.69) Sex and age of the child, breast-feeding were not documented to be significant risk factors of ALRTI.

Conclusions Incomplete vaccination, family past history of ALRI overcrowding in sharing child room were significantly associated with ALRI. Encouraging complete vaccination may help to reduce ALRI.

Respiratory diseases

Abstract Code: 2016-EOH-240
Presenter Name: Dr. Mohammad Ismail | Authors: A. Khan, Z. Shah, F. Khan, Z. Ali, M. Ismail | Country: Pakistan
Presenter Email: ismailrph@upesh.edu.pk
Title: Engaging Community Pharmacies in Referral of Tuberculosis Suspects: A Pilot Study

Background Pakistan ranks fifth in the world among the high-burden countries for tuberculosis (TB). Community pharmacies, being a valuable component of the health system, can play a vital role in identification and control of TB.

Purpose To engage community pharmacies in referral of tuberculosis suspects to respective TB centers and to identify outcomes of these referrals.

Methodology This pilot-study was conducted in Peshawar, Khyber-Pakhtunkhwa, Pakistan. Total 45 community pharmacies were enrolled. They were provided referral books and were trained for identification of TB suspects and referral process. A team of pharmacy students was trained which was visiting these pharmacies twice weekly in order to collect referrals. All referrals were then followed by pharmacy students to find their outcomes. Moreover, satisfaction-level of patients and pharmacists were assessed regarding handling of their referrals.

Results Of total 45 pharmacies, 84% (n = 38) generated referrals. Total 139 referrals were generated, of which, 25 were not traceable. Remaining referrals were followed in order to know the outcome. Follow-up of majority of referrals (>50%) completed in one to two weeks, whereas, other were followed for more than two weeks. Among 114 traceable referrals, 19 were declared positive TB cases, 53 were declared negative, 26 were not willing to visit TB centers, and outcome of 16 referrals was pending. Responses of 64 patients were available regarding their satisfaction-levels, which was very poor in 15 patients, poor in 18, fair in 18, good in 12 and excellent in 1. For 78 referrals, responses of pharmacists were available regarding their satisfaction-levels, which was very poor for 12 referrals, poor for 18, fair for 24, good for 21, and excellent for 3.

Conclusions Community pharmacies provided considerable contribution to identify and refer TB suspects. This approach need to be recognized and implemented in the whole country.
Respiratory diseases

Abstract Code: 2016-EOH-155

Presenter Name: Dr. Qais Jarad | Authors: L. Alsalihy, S. Al- Ubaidy | Country: Iraq

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Title: Sputum Smear Failure to Conversion After 2 Months Treatment Under Directly Observed for Positive Pulmonary Tuberculosis in Iraq.

Background WHO considered TB now ranks alongside HIV/AIDS as a top infectious killer, claiming 1.5 million lives every year. Sputum smear failure to conversion after 2 months of tuberculosis (TB) treatment is a predictor of patient prolongs infectivity and treatment unfavorable outcome. In Iraq no studies had tackled of this problem.

Purpose

1- Describe the demographical characteristics of TB patients had failure in conversion of sputum smear after 2 Months of treatment who registered in Iraq during 2010-2015.

2- The pattern of this situation on patient’s treatment outcome.

Methodology

This cross-sectional study was done on positive pulmonary TB patient records at National Specialist Center for Chest and Respiratory Diseases for the period 2010-2015. Demographics, sputum smear failure to conversion at second month of treatment and the result of treatment outcome were obtained from patients’ records. Cure and complete treatment was considered favorable outcome. Death and failure was considered unfavorable outcome.

Results

During 2010-2015 a sample of 14196 positive pulmonary TB patient were reported; 838(6%) were failure to conversion second month of treatment TB patients. Males constituted 56%. Mean age was 42±17 years. Average lag to diagnosis was 47 days, Highest rate from the cases was among ≥ 60 year age group (20%). The highest rate of failure to conversion to all cases of pulmonary +ve TB patients was reported in Baghdad Karkh 10% and at the year 2015 were it was 9%. There was a significant association between failure of conversion second month of treatment TB patients with unfavorable out come and default (skip from treatment) outcome.

Conclusions

The study showed delayed smear conversion in about 6% of the pulmonary +ve TB patients and it is more in male and older age group. There is a need for more attention and reeducation for the population at risk to minimize its unfavorable and default outcome.

Surveillance System

Abstract Code: 2016-EOH-29

Presenter Name: Dr. Eman Eldesouky | Authors: S. Elgoharey, M. Genedy, A. Eid, A. Kandeel | Country: Egypt

Presenter Email: dreman1212@yahoo.com

Title: Sentinel Site Surveillance of Meningitis in Selected Fever Hospitals Egypt 2016

Background Meningitis is caused by a wide variety of infectious agents including bacteria, viruses, fungi and Mycobacteria. The routine CSF analysis for diagnosis includes mainly cell counts, biochemical testing for sugar and protein levels, gram stain and culture. This workup misses many pathogens that are endemic in Egypt and are known causes of Meningitis. Advanced techniques such as RT-PCR is not adopted for diagnosis of Meningitis in fever hospitals due to resource limitations.

Purpose Provide quality data necessary for studying burden of the disease caused by each of these organisms, help monitor trend of disease burden, assess impact and effectiveness of new bacterial conjugate vaccination programs implemented, introduction of a new vaccine if needed and build national capacity for long-term laboratory based surveillance for communicable diseases in Egypt.

Methodology The surveillance system was implemented in 4 fever hospitals in 4 different governorates where(1 ml) CSF first lumbar puncture taken in the sentinel site for all eligible admitted patients whether suspected Meningitis or Encephalitis, collected, divided in 2 cryotubes, stored and send to the CPHL on monthly basis with hard copy of the collective hospital data results, RRL will proceed in PCR testing for all confirmed cases, 30% of probable cases, and 30% of suspected cases according to the Meningitis case definition. RRL Perform Molecular detection and stereotyping for S. pneumonia, H. influenza and N.meningitidis. The virology PCR Lab will then test the negative samples resulting from bacteriology.

Results Total number of eligible cases 459 of which 256(56%) were PCR tested, 40(16%) were positive, 38 (14.8%) were st.penumoniae, 1( 0.4%) was H. influenza B and 1(0.4%) was N. meningitides B.

Conclusions PCR testing provide a quality data for meningitis surveillance which will enable studying the epidemiology of meningitis most common circulating pathogen with its serogroup.
Background Acute Bacterial Meningitis (ABM) continues to be associated with high mortality and morbidity especially among children in Morocco where the fight against the disease remains a high public health priority due to its annual incidence between 1.2 and 3.6/100,000 and case fatality around 11%.

Purpose This study aims to perform a descriptive analysis for ABM epidemiology in the district of Mediouna. We have also evaluated the surveillance system to generate recommendations for system strengthening.

Methodology We conducted a descriptive study from January 2008 to December 2015. Data was collected from the meningitis routine surveillance system. Cases were diagnosed based on routine cultures from blood and cerebrospinal fluid, and meningococcal serogrouping by using standard methods. Updated CDC guidelines for evaluating public health surveillance system were used for quantitative and qualitative analysis through routine database, self-administrated questionnaire and interviews.

Results The incidence of bacterial meningitis across Mediouna District has considerably declined for the past 8 years from 8.11 to 0.96 per 100,000. Case fatality rate of total meningitis cases have fluctuated between 0% and 33.33% with predominant cases among children < 5 years 19 (53%) and urban areas 24 (67%). Confirmation rate was low 38%. Most of confirmed cases were caused by Neisseria meningitidis. Serogroup B was identified in 28.5% of cases; according to the trend observed on the national level. Haemophilus influenzae type b (Hib) vaccine introduction in Morocco in 2007 has dramatically reduced the occurrence of Hi meningitis. Only one case of Hi meningitis has been reported since 2008. 67% of reporting forms were fully completed, Hospitalization-investigation delay was 4.5 days. The private sector involvement was low.

Conclusions Effective surveillance and vigilance must be enhanced in Mediouna District especially among children with more involvement of the private sector. Laboratory capacities must be strengthened for a more bacteriological confirmation.

Background Since the various reforms experienced by the national health system, important attributions and roles have been assigned to the health regions as health watch and safety. Thus, these structures must have a system in which the Comprehensiveness is a mandatory quality for providing more preventive and curative actions, monitoring the population’s health status and responding effectively to actual and potential health problems. Meningococcal meningitis is particularly a public health priority in the region of Tangier-Tetouan as it is at national level. A strategy of prevention and control based on epidemiological surveillance is already implemented in this area.

Purpose The objective of this study is to describe and assess the epidemiological surveillance system of meningitis in the region of Tangier-Tetouan then to propose improvement measures.

Methodology We conducted a descriptive study with a purely quantitative approach to assess the quality and responsiveness of the surveillance system through regional Database analysis regarding the notified meningococcal meningitis during the last 5 years (2011-2015).

Results The study showed two main forces: The conformity of lumbar puncture practice to the current recommendations (96.03%) and the systematic achievement of investigations around cases of meningococcal meningitis. Several weaknesses were raised: the notification delay of cases, decreased practice of CSF culture (85.10%) mainly at the province of Larache (22.5%), decreased mention of culture results on the database (32.16% in 2015), important proportion of missing data and improperly classified cases.

Conclusions In conclusion, we proposed some measures to strengthen the epidemiological surveillance system and reduce weaknesses in this region. These measures revolve around 4 actions: Maintain and strengthen the achievements of meningitis surveillance system at regional level, Enforce the obligation of prompt reporting of cases of meningitis in less than 24H, Improve the quality of monitoring data, and Improve the steering of different levels monitoring system.
**Background**  Polio being marked for eradication is one of the most important health related event. Acute Flaccid Paralysis (AFP) surveillance is one of the key strategies in polio eradication. Federally Administered Tribal Areas (FATA) in Pakistan bordering with Afghanistan has strategic location and remains a major reservoir and source of transmission of polio since last 3-4 years.

**Purpose**  AFP Surveillance system was evaluated to identify strengths and weaknesses in order to give recommendations for improvement.

**Methodology**  AFP surveillance system was evaluated by following CDC’s updated Guidelines for Evaluating Public Health Surveillance Systems 2001. Descriptive study was conducted in April 2015 at Frontier Region Dera Ismail Khan, Frontier Region Tank and South Waziristan in FATA. Surveillance records were reviewed and in depth interviews of stakeholders were conducted using semi-structured questionnaire. Qualitative and quantitative assessment of system attributes were carried out.

**Results**  AFP surveillance system was found simple, flexible and acceptable due to simple case definition and adaptability to accommodate other events. Data quality was found poor as reporting from 80% health facilities were incomplete due to missing information. Representativeness was poor due to lack of private sector involvement. >80% cases were found to be detected late. Stool adequacy rate for South Waziristan, & Frontier Region Dera Ismail Khan was >80% & for Tank, it was <60%. Cases with 60-days follow up was 50% for FR DI Khan, 25% for FR Tank and 65% for SW. Sensitivity was 100% due to broader case definition and predictive value positive was 38%.

**Conclusions**  Health workers’ knowledge about AFP was found inadequate and needs proper regular trainings. There was lack of government ownership and this system needs official ownership at all levels in order to bring improvements. Human resources and logistics provision needs to be ensured. Regular surveillance data analysis and feedback to health workers is highly recommended.

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**Background**  Federally Administered Tribal Area (FATA) remains a major reservoir and source of transmission of polio to other parts of the country and abroad. Terrorism, war on terror and anti-polio activities from 2012-2014 in many parts of FATA have badly affected Acute Flaccid Paralysis (AFP) surveillance system. FATA contributed 70% (n=65) and 58% (n=179) in 2013 and 2014 respectively. Poor and damaged infrastructure, social and cultural factors have negative impact on the health service delivery in FATA.

**Purpose**  AFP Surveillance system was evaluated to identify strengths and weaknesses to give inputs for improvement.

**Methodology**  Descriptive study was conducted in April 2015 using CDC’s updated Guidelines for Evaluating Public Health Surveillance Systems, 2001 at Agency health office Kurram. Review of literature, records and in depth interviews of stakeholders were conducted using semi-structured questionnaire. Qualitative and quantitative assessment of system attributes was done. Sensitivity and PPV was calculated using previous years estimates for FATA.

**Results**  AFP surveillance system was found simple and flexible as uniform case definition was followed however Frontline Polio Workers were not properly trained to identify AFP case. Data quality was not good as 28% (n=2) specimens had incomplete information, and 57% (n=4) cases were lacking final diagnosis. 71% weekly zero reports were found incomplete. Only 43% reports were received in time. Sensitivity was 100%. System is non representative because no reporting site is in central tehsil due to compromised security situation and non-involvement of traditional healers.

**Conclusions**  The recent division of agency health department in Lower & Upper Kurram has severely affected the health service delivery including AFP surveillance. Capacity building of front line polio workers and health staff is highly recommended with special emphasis on timely data sharing and increased involvement of private sector and traditional faith healers in surveillance network.
**Background** The last case of wild polio virus transmission occurred in AJ&K in October 2000. High routine immunization coverage with OPV, mass immunization campaign in which two doses of potent oral polio vaccine is administered to eligible children and mop-up campaigns in areas with identified immunization gaps and high quality AFP surveillance has helped the state of Azad Jammu & Kashmir in maintaining a free polio status for over twelve years.

**Purpose** As no polio case has been reported in the last 12 years, the AFP surveillance system should be evaluated to exclude the possibility of missed cases.

**Methodology** This qualitative & quantitative evaluation was conducted at directorate of Expanded Program on Immunization AJ&K during November & December 2012. AFP records were reviewed and face to face interviews were conducted with stakeholders using “CDC’s Updated Guidelines for Evaluating Public Health Surveillance Systems 2001”.

**Results** During 2011, total 45 AFP cases, aged 01 month to 12 years were reported. 56% (25/45) were boys. Those below 5 years of age accounted for 58% of cases. AFP case rate was 2.8/100,000 children under 15 years of age. Standardized case definition and data format with simple information flow was found. System incorporated measles and neonatal tetanus reports since 2009 and was found flexible. Data quality was excellent (100% zero and monthly reports). Stakeholders were found working in close coordination. Sensitivity was 140%. PPV was zero as no polio case identified. Majority of cases were reported by public sector (93%). System was stable with well trained staff and available funds. Timeliness on all indicators is >90% which is well above WHO criteria.

**Conclusions** AFP surveillance system met and exceeded WHO standards. Private sector involvement should be increased. Importation/reintroduction of polio virus from adjacent areas is a constant threat. Public sector commitment should be sustained till the global eradication of polio.

**Background** National Electronic Disease Surveillance System (NEDSS) is operated in Egypt since 2001 as a surveillance tool for 40 notifiable communicable diseases including brucellosis. Minya – one of the Upper Egypt governorates - has the highest reporting rate for brucellosis in 2014 and 2015 by 10 and 11/100,000 respectively. There is a need to regular improvement and update the surveillance system to provide decision-makers with timely and relevant actionable information.

**Purpose** To evaluate NEDSS regarding brucellosis.

**Methodology** A health system evaluation using structured questionnaire to assess surveillance attributes according to CDC guidelines. Surveillance staff at central, directorate, district and fever hospital levels were interviewed to measure usefulness, simplicity, acceptability, and stability. NEDSS data was extracted for analysis to measure completeness, validity, and timeliness.

**Results** During 2015, Brucellosis cases reported from Minya were 1022. Total interviewed staff were 13 (2 doctors- 7 sanitary- 4 IT) from the four levels. Regarding attributes, NEDSS is simple in terms of case definitions and investigation forms, however errors may occur at hospital level due to weak integration between physicians, laboratory and surveillance teams. High flexibility of adding or modifying forms and diseases. It is acceptable (86%) by surveillance teams. The System is stable due to online electronic backup system. It is representative to patients admitted to fever hospitals only. Median completeness of variables is 85% with IQR 59%. Median time between isolation and reporting is 3 days with IQR 4. Data updating occurs in 86% of cases at fever hospitals level while data validity is 87.5%.

**Conclusions** High score of attributes indicate proper function of NEDSS as public health tool to provide information for decision-making. Other types of hospitals should be included in the system to improve representativeness. Regular assessment of the system is essential to better describe strengths and weaknesses.
Background Dengue fever (DF) is an emerging public health problem of tropical and sub-tropical regions. In 2015 an estimated 10,000 DF cases were reported from Pakistan and out of these 35% (3,596) were from Karachi.

Purpose An evaluation of DF surveillance system was conducted with objectives to identify its strengths and weaknesses and suggest recommendations.

Methodology The evaluation was conducted in Karachi, Sindh, from 5th May to 3rd June 2016 using the Updated CDC Guidelines for Evaluation of Public Health Surveillance Systems, 2001. After identification of key stakeholders, face-to-face interviews were conducted to evaluate qualitative and quantitative attributes of DF surveillance system. Pertinent departmental reports were also reviewed.

Results DF surveillance system is simple and used WHO recommended case definition. The system is flexible as it has the ability to incorporate other health events. Data quality is good with over 90% of the forms completely filled. The representativeness was fair as the system covered all public but limited private healthcare facilities. Staff was providing accurate, consistent and complete information which suggested good acceptability. Due to one day to one week reporting timeliness was fair and led to delays in outbreak identification. Only 10% report received in specified time i.e. 12-24 hours. Sensitivity was 1.2% and positive predictive value was not calculated as the system does not report the suspected cases. The system was good in stability as it is supported by department of health.

Conclusions The DF Surveillance system was satisfactory in all attributes except sensitivity, PPV and timeliness. Increased involvement of private health facilities, strong policy on timeliness and reporting of suspected cases were recommended.

Background Acute respiratory infections (ARI)/ pneumonia is a global public health concern as every year about 900,000 children <5 years die from pneumonia worldwide. In Pakistan, pneumonia kills 91,000 children every year and an estimated 329,000 children die before celebrating fifth birthday, contributing to 13% total deaths. Pakistan stands at number 4 for reported pneumonia deaths globally. This huge disease burden necessitated to evaluate related surveillance systems.

Purpose Evaluation was conducted to identify weaknesses, strengths and to suggest recommendations for improvement.

Methodology CDC’s updated guidelines for evaluating public health surveillance system 2001 were followed. Descriptive study was conducted in May 2016. Major stakeholders were identified and interviewed through semi-structured questionnaire. Qualitative and quantitative assessment of ARI surveillance system attributes was based on reports review, analysis of data sets and discussions with stakeholders.

Results District Health Information System (DHIS) and Lady Health Workers (LHWs) Management Information System (MIS) were found simple but inflexible in accommodating additional information. Data quality was found good, 90% (n=36) forms were found complete among 40 forms randomly checked but timeliness was not followed as monthly report takes fifteen days to reach provincial office. Sensitivity of DHIS system was 58% and LHWs MIS was 15%. PVP could not be calculated due to absence of laboratory component. System was found stable due to secure data collection, management & provision of data. DHIS system was found representative as covering all districts while LHWs MIS was covering about 60% population.

Conclusions DHIS and LHWs MIS have good data quality but unable to detect outbreaks due to poor timeliness. Due to the inflexibility in these systems, even conditions such as influenza like illness and severe acute respiratory illness could not be accommodated. An integrated approach to collect data on ARI would help in improving timeliness and effective utilization of resources.
Surveillance System

Abstract Code: 2016-HIV/STI-263

Presenter Name: Dr. Muhammad Bilal Khan  |  Authors: A. Jaffar, H. Habib, M. Zeshan Haroon  |  Country: Pakistan

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Title: Evaluation of Communicable Disease Surveillance System in Afghan Refugees Camp Khyber Pakhtunkhwa, Pakistan, June 2014

Background
Communicable diseases are major cause of mortality and morbidity among refugee’s population. In Pakistan, Afghan refugees camp Haripur is the largest refugees camp with more than 1 million population. Epidemiological assessment is as important in emergency situations as treatment of endemic diseases. This evaluation will provide situation analysis of existing communicable disease surveillance in this vulnerable population.

Purpose
The Disease Surveillance System was evaluated to determine its effectiveness in refugee’s camp and identify the gaps for improvement.

Methodology
A validated tool “Updated Guidelines for Evaluating Public Health Surveillance System 2001 (CDC)" was used. Check list was developed; all the variables were assessed. Interviewing the major stakeholders through semi-structured questionnaires. The surveillance system attributes identified in the guideline were assessed namely simplicity, flexibility, data quality, acceptability, stability, representativeness, timeliness, sensitivity and usefulness.

Results
The data flow is simple; field staff not using case definitions. Reporting tools were not revised, therefore, simplicity was average. The system was flexible because it has the capacity to incorporate the changes over time. Data quality was assessed and found 85% accurate. The system was found acceptable to key stakeholders. The stability of the surveillance system depends on the funding source which is poor for this system. There are 6 reporting units all over the camp with 28 community health workers which collects representative data. The reports were on time which is Good. Prevalence of Communicable Disease among Afghans in camp is 17%, Sensitivity was 89% which denotes good. The system has the capacity to timely detect the outbreaks and respond, therefore, it is useful.

Conclusions
The surveillance system was found effective as meeting its objectives of timely detecting outbreaks. The system is weak in stability due to insecure funding and poor ownership by local health authorities.

Surveillance System

Abstract Code: 2016-HIV/STI-130

Presenter Name: Dr. Safa Aldahhan  |  Country: Iraq

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Title: Monitoring of Electronic Integrated Disease Surveillance System (EIDSS) in Iraq

Background
In Iraq, the current surveillance system of communicable diseases is an internet based system using e mails to send reports. The Electronic Integrated Disease Surveillance System (EIDSS) is a software system designed to strengthen monitoring and prevention of dangerous diseases by providing computerized capabilities to collect, store, analyze and rapidly disseminate surveillance data. It provides access from desktop, web and mobile devices and link together different levels in secured way. It is being successfully implemented in Uzbekistan, Kazakhstan, Georgia and Azerbaijan. In 2014, it was implemented in six pilot workstations in Baghdad province.

Purpose
To monitor the implementation of EIDSS as a surveillance system in the six pilot workstations in Baghdad governorate, 2015.

Methodology
Data were collected through field visits to the six workstations; four hospitals and two primary health care centers, using a checklist to assess the following: the Notification Part where three areas were monitored: general information (7 variables), demographic information (5 variables), and the clinical information (3 variables); and the Case Investigation Part where two areas were monitored: clinical information (5 variables) and final case classification & outcome (4 variables). Another checklist was used to monitor availability of logistics, staff, and problems facing the health outlet.

Results
Since implementation of EIDSS in May, 2014 till Feb, 2015, 990 cases recorded in the six stations. There was clear variation in the achievement of different workstations. The overall score of domains in the notification part were: general information 89%, demographic information 100% and clinical information 86%; while for the case investigation, the clinical information 71%, and final case classification & outcome 33%. We observed changing trained staff in three workstations, inadequate space in four workstations, and poor computer skills in three workstations.

Conclusions
The overall achievement of the system was not satisfactory. Developing a standardized operation procedure and periodic monitoring were recommended.
Title: Evaluation of Road Traffic Accidents (RTA) Surveillance System in District Rawalpindi, Punjab, Pakistan

**Background** Road traffic accidents make the 9th leading cause of death globally with 1.2 million people dying each year. Pakistan has a death rate of 14.2/100,000 with 25,781 fatalities each year due to RTA.

**Purpose** The RTA surveillance system of District Rawalpindi Pakistan was evaluated with the objectives to identify strengths, weaknesses and formulate recommendations for improvement/strengthening.

**Methodology** A descriptive study was conducted at tertiary care hospital at Rawalpindi from April-July, 2015, using CDC “updated guidelines for evaluating public health surveillance systems”. Key stake holders were interviewed including trauma center doctors, paramedics, data entry staff and medical administration. Analysis of available records, data forms, weekly/monthly/annual reports and returns disseminated at various administrative levels was done.

**Results** The system is simple to operate and a proper case definition is followed and is not flexible to accommodate new variables. Data quality is good and reliable. The system is acceptable and sensitive (75.71% as system detected 3513 cases of RTA from July 14 to July 15, out of 4690 RTAs, that occurred in Rawalpindi accord to 1122 data) to detect all cases of RTA. Since there is no laboratory diagnosis involved so predictive positive value could not be determined. The system is not true representative of the population under surveillance as private health facilities are not reporting to this surveillance system. The reports are forwarded on monthly basis but final analysis is done annually. The system is able to provide data without failure as the methods are sustainable. The information is disseminated at appropriate levels for suggesting policy proposals.

**Conclusions** Data collection tool be made more elaborate to provide information on behavior and risk factors for the accidents. System needs to be flexible to accommodate new information. Annual analysis and dissemination of data be replaced by regular monthly analysis.

Title: Impact of a Vaccination Campaign on Measles Incidence, 2015, Balkh Province, Afghanistan

**Background** One of the leading causes of death in children is measles, even though a safe and cost-effective vaccine is available. Unfortunately, Afghanistan is an endemic country for measles, with only nine countries ranking ahead of Afghanistan by cause of death due to measles (6.34/100,000 population; Only 60.4% of children have received one dose of measles vaccine by 23 months of age (2015 Afghanistan Demographic Health Survey). We sought to determine the impact of a measles vaccination program on the subsequent incidence of measles during a province-wide outbreak.

**Purpose** To determine impact of Vaccination Campaign on Measles Incidence, 2015, Balkh Province, Afghanistan.

**Methodology** We used Balkh Province surveillance data from the Afghanistan Disease Early Warning System (DEWS). We compared the mean number of cases per year for three years (2012-2014) to the first seven months of 2015 and then measured the impact of a measles vaccination campaign in July 2015.

**Results** In the first seven months of 2015, there were 1,326 cases with 10 (0.75%) deaths. The monthly mean of 189 cases was 3.9 times higher than the monthly mean for the preceding three years. Health facilities reported 70% vaccination coverage and 156 (72.9%) of 214 cases tested were positive for measles IgM antibody, confirming the presence of measles. Following the “100% Measles Vaccination Campaign” on 04-09 July 2015, the number of cases for the last five months of the year fell to 47 (mean, nine cases). The vaccination program prevented a projected 898 measles cases and seven deaths.

**Conclusions** Our experience documents the high effectiveness of special measles vaccine campaigns. To eradicate measles, however, high vaccination coverage must be maintained, and this must be the focus of local and national authorities.
Background

Iraq noticed measles outbreak during 2013 through 2015. Almost all provinces affected. Children under five years comprised majority of reported cases.

Purpose

We aimed to describe measles containing vaccine (MCV) status among under 5 years measles cases in Iraq, 2013-2015.

Methodology

We reviewed national measles surveillance data gathered during period of 2013 to 2015 already available at CDC Baghdad which is case based. We included all Iraqi cases aged below 5 years reported from all provinces and classified as confirmed by either positive laboratory test, clinical compatibility or epi link. We described the cases by age, measles vaccine status, place of residence, and time of reporting. We compared confirmed cases with those being suspected and tested negative by MCV status. We defined vaccinated as received at least single dose of MCV. We calculated percentages, odds ratio and confidence interval using 0.05 as statistical significance level.

Results

Of 3431 measles cases captured by national surveillance system, 2245 (65.5%) cases were under five years old. Of them, 1591 (70.4%) were lab confirmed while 645 (29%) were epi linked, more than half were from Baghdad and Ninawa and 144 (6%) cases were IDPs. Those aged below nine months, which is recommended age for first measles vaccine dose, constituted one quarter of cases. Excluding those below vaccination age, 1013 cases (61%) were not vaccinated against measles, with no difference between studied years. Those who not vaccinated against measles were seven fold more prone to contract the infection compared with vaccinated children (OR 7, 95% CL: 6-8.8) and it is ten among IDPs (OR 10.4, 95% CI: 2.4-46).

Conclusions

Vaccination is a critical measure to prevent and contain measles outbreaks. We recommend keeping high vaccine coverage in routine and supplementary vaccination activities especially in most affected areas and IDPs. Raising pediatricians’ awareness toward under 9 months cases also considered.

Background

Excessive vaccine wastage is a significant problem throughout the world and is a major economic consideration for most developing countries. To reduce missed opportunities, national EPI instruct opening multi-dose vials even for single vaccine dose. Iraq noticed increasing trend of measles vaccine wastage rate (VWR) in the last five years, from 43% in 2011 to 56% in 2015.

Purpose

To assess reduction in measles VWR and Wastage multiplier factor (WMF) with projection of smaller dose presentation, Iraq, 2016.

Methodology

Vaccination registries in nine provinces in Iraq were reviewed in the first four months of 2016. Conveniently, we selected two primary health centers (PHCs) with highest target population and one of the least target PHCs in each province. We defined vaccine wastage as number of discarded doses in an opened multi-dose vial at the end of immunization session and WMF indicates how much additional vaccine should be ordered in order to allow for the given wastage rate. We calculated VWR and WMF for ten-doses vial and projected these figures for five-doses presentation. We compared means of WMF for both presentations, stratified by PHCs with lowest and highest target population, using P<0.05 as a statistical significance level.

Results

A total of 23,060 measles vaccine doses were issued to immunize 9,962 infants. The overall VWR and WMF for ten-doses vaccine vial were 56.8% and 2.31, compared to 32.5% and 1.48 for five-doses vaccine vial. The mean VWR in PHCs with highest target population was 53.6% (±14.6) compared to 73.8% (±9.8) in the least PHCs population; P-value=0.0001. Mean of WMF for ten-doses vial was higher than that of five-doses presentation (3.02 ±1.49) compared to 1.76(±0.62); P-value=0.001; respectively.

Conclusions

Using ten-dose vials results in wastage of more than half of available doses. Switching to smaller multi-doses vials will halve wastage rate, particularly in low density population area. We recommend considering smaller multi-doses measles vaccine in future EPI planning.
Vaccine Preventable Diseases

Abstract Code: 2016-NCD-330

Presenter Name: Dr. Israa Tareq | Author: F. Lami | Country: Iraq

Presenter Email: israa.tareq@yahoo.com

Title: Vaccination Coverage Survey in Baghdad Resafa, Iraq.2016

Background
Baghdad Resafa is the eastern side of Baghdad, with around 4.6 million inhabitants and a lot of slums areas. The two cases of poliomyelitis reported in 2014 were from this area, meanwhile it is the most affected area by Mumps outbreak in 2016.

Purpose
• To estimate immunization coverage for all antigens among children aged 12-23 months, in Baghdad Resafa Directorate of Health, 2016, and characterize it by districts
• Identify the causes of “never” or “delayed vaccination”.

Methodology
The survey involved 600 children selected randomly using the proportionate cluster (120 clusters) survey. Twenty teams (each of two) participated in the data collection using the standard WHO questionnaire. Data were compiled using tablets and timely reviewed and analyzed. We defined a “fully immunized child” as a child received one dose of BCG, three doses of oral polio vaccine and Pentavalent vaccines and one dose of measles vaccine.

Results
Around 41% of children had completed the vaccine schedule within the date. Fully vaccinated children were 75%. Only 2.2% were never vaccinated. Card retention rate was 94%. Immunization coverage for pentavalent 1 (access) was 93%, pentavalent 2 was 77%, and measles was 76%. Forty-two percent of all children surveyed received valid doses of polio vaccine. Dropout rate was 17%, while it was around 25% in rural districts. Parents’ neglect ion, mother busy, vaccine not available were the main causes of “never vaccinated” and incomplete vaccination by different antigen.

Conclusions
Fully immunized children are still below national target besides the high dropout particularly in rural districts. The access is good in all districts while utilization is low in districts with slums. Public communication strategies and raising capacity of health workers are recommended to address reasons of un-vaccination.

Vaccine Preventable Diseases

Abstract Code: 2016-EOH-51

Presenter Name: Dr. Mouad Merabet | Authors: A. Idrissi, N. Malmouz, M. Badi, H. Aoufi | Country: Morocco

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Title: Epidemiological Profile and Prognosis Factors of Meningitis in the Region Tangier-Tetouan, (Morocco), 2008-2015

Background
Meningitis is a medical emergency and public health problem in Morocco, given the high risk of epidemic meningococcal meningitis with rampant to the endemic and sporadic condition with emerging micro outbreaks sometimes. At the region Tangier-Tetouan, it is a serious health problem because of its high lethality.

Purpose
The objective is to describe epidemiological profile, clinical and biological aspects of the disease in the region, as well as prognostic factors of this disease.

Methodology
It is a descriptive and an analytical retrospective study of cases of meningitis notified in Tangier-Tetouan region between 2008 - 2015 through the analysis of the regional database by Epi-Info 3.5.4.

Results
Total cases after cleaning the Data Base is 1457, including 134 deaths. 77% were represented by meningococcal meningitis, including 14% confirmed. The incidence was generally stable (6.67 per 100,000 Inhabitants in 2015) with a tendency increase at Fahs-Anjra and Larache and to decrease in M'diq-Fnidq. The incidence of meningococcal meningitis was far from the national objective (4.77 per 100,000 inhabitants in 2015) and higher in Chefchaouen and Larache. The confirmation rate was 18%. The median age was 7 years and the modal class was 5-15 years. The sex ratio was 1.5. The average case fatality rate was 9.20% with a tendency to rise in Larache. The poor prognosis factors were: age (p= 0.0342) Purpura / Petechiae (RR: 1.13, p=0.000), coma (RR=1.43 p=0.000) convulsions in adults (RR= 1.06 p=0.003) and increased CSF protein (p-value= 0.0113).

Conclusions
Several actions of prevention and fight hinged around 4 axes we have proposed: Improve epidemiological surveillance, improve the management, strengthen prevention efforts and improve the steering of the program at regional and provincial level.
**Background**

Bacterial meningitis remains a significant cause of morbidity and mortality worldwide. In Morocco, meningitis, including meningococcal constitutes a serious public health problem. A national program against this disease was established in 1989. We described the epidemiology of meningitis in the Casablanca-Settat Region during 2010-2015.

**Purpose**

Describe the epidemiology of meningitis in the Casablanca-Settat Region during 2010-2015.

**Methodology**

We conducted a descriptive study including cases of meningitis reported to the Region of Casablanca-Settat in Morocco from 2010 to 2015. Data were retrieved from the database of the public health service of regional direction Casablanca-Settat. Data analysis was performed using Epi-info statistical software.

**Results**

During the years of study, 1106 cases of meningitis were reported, mostly (654: 59.1%) among males. Median age of patients was 6 years, the most affected age group was 3 to 15 years (46.8%). A third (30.4%), that is 151 of 496 probable cases (30.4%) were culture-confirmed, Neisseria meningitidis was the leading bacterial pathogen, occurring in 119 (78.8%) cases, followed by Streptococcus pneumonia in 25(16.5%) cases, and H influenzae one case(0.6%) .Most (345:69.5%) cases of meningitis were presumptively attributed to bacterial pathogens without final determination of causative organisms. Among patients with known outcome, case-fatality rate was 15.3%. Investigations around cases were carried and 19 cases of contamination of the environment were observed.

**Conclusions**

Bacterial meningitis is still a significant cause of mortality in Morocco. Surveillance data are useful to monitor the impact of various interventions including vaccines. Confirmation rate must be increased and improved methods of bacterial detection including isolate serotyping must be made available in order to further reduce mortality and morbidity due to meningitis.

**Background**

Currently Punjab is suffering from diphtheria outbreak. 67 suspected cases and 5 deaths have been reported till 26th July 2016.

**Purpose**

A descriptive study to analyze data of probable diphtheria cases on disease surveillance system (DSS) dashboard.

**Methodology**

A probable case was defined as a patient with laryngitis, pharyngitis or tonsillitis, and an adherent membrane of the tonsils, pharynx and/or nose entered on DSS dashboard from 1st January to 26th July 2016. Throat swab showing growth of Corynebacterium diphtheriae declared by NIH Islamabad were defined as confirmed cases. In depth analysis of diphtheria cases reported on DSS Dashboard was carried out to identify determinants of diphtheria outbreak in Punjab.

**Results**

A total of 67 cases were reported with 5 deaths (CFR 7.5 %). The highest number of cases were reported in January (31.3%), February (21%), March (12%) and April (16%). Age range was, 09 months to 42 years. Males were most affected (69%). The highest number of reported cases (75%) were under 10 years of age and more than 1/3 of total cases were < 5. These cases were reported from 18 districts of Punjab (18/36). Majority (77%) of the cases were from 6 most populous cities of Punjab. District Lahore, Faisalabad and Sheikhupura were most effected (52%). As for vaccination, 17.9% were fully, 1.5% partially and 80.6% were unvaccinated. Two of deceased were fully vaccinated. Throat swabs of 48 cases (71.6%) were sent to NIH. Growth of Corynebacterium diphtheriae was confirmed in 2 of the sent samples. An average of 5 days delay was found between the admission and date of sample collection.

**Conclusions**

Low routine immunization coverage was the most probable cause of current diphtheria outbreak in Punjab. Mop up vaccination activities were initiated immediately.
Zoonotic and Vector Borne Diseases
Abstract Code: 2016-EOH-315
Presenter Name: Dr. Naim Rahimi | Country: Afghanistan
Presenter Email: naim rahimi420@yahoo.com
Title: Abstract on Scabies

**Background** Scabies occurs worldwide, affects people of all social classes, and can spread rapidly under crowded conditions. A series of scabies outbreaks have been detected and controlled in Afghan prisons. We investigated scabies cases in the Balkh teenager custody center to determine risk factors, and to make recommendations to control this outbreak and to prevent future outbreaks in Afghan prisons.

**Purpose** To eliminate scabies.

**Methodology** We reviewed medical records and performed a cross sectional study among residents of the facility. Data were collected via face to face interview. Data analysis was done by Epi Info-7.

**Results** From 20-Nov-2014 through 07-Nov-2015, there were 15 scabies cases in the Balkh teenager custody center among the 49 prisoners present during one year. All 15 cases and an additional 27 were present at the time of our investigation; 36 of the residents were males. The attack rate =30.6%, mean age =15.7, median age =15, and age range 14-17 years. Scabies was associated with taking a bath once per week (RR=1.46; 95%CI: 0.39-5.37), using soap during bath (RR=1.95; 95%CI: 0.31-12.3), and sharing a mattress (RR=5.05; 95%CI: 0.73-34.7), usage of clean sheets (RR=0.19; 95%CI: 0.07-0.52) and a clean cloth (RR=0.29; 95%CI: 0.14-0.59) were protective. All cases occurred in males. There were 3 rooms for male (12 male in each room of 24 m2) with specific clustering within and between two rooms. Females were kept in the second floor with more space and better hygiene.

**Conclusions** Crowded living conditions and poor hygiene appeared to be the cause of this outbreak. To prevent future outbreaks, the government should provide spacious living/sleeping areas and good hygienic conditions, including the routine provision of clean bedding.

Zoonotic and Vector Borne Diseases
Abstract Code: 2016-EOH-183
Presenter Name: Dr. Nabil Al Abhar | Authors: A. Al Serouri, Z. Alawawi, A. Al-Mortda, M. Dahnan, M. Al-Emad | Country: Yemen
Presenter Email: abher18@yahoo.com
Title: Fulminating Scabies Outbreak Among Household Members of Prisoners and Soldiers, Saddah-Yemen, May 2016

**Background** Scabies spread rapidly among people living under crowded conditions e.g. prisoners and soldiers who can easily pass it to their household members. Saddah surveillance officer reported that there is an outbreak of scabies taking place in some Saddah districts. Saddah governorate on Yemen’s northern border with Saudi Arabia is suffering from military confrontation since 2015, where it is deprived from essential life needs especially water as result of the conflict.

**Purpose** To confirm the outbreak, determine its extent and recommend control measures.

**Methodology** Suspected case was defined as any person who experience severe itching especially at night, and rash or blisters with the diagnostic linear burrows in the affected body part. Active house-to-house search was conducted to find cases using a pre-designed questionnaire.

**Results** Out of 537 surveyed residents, 224 (42%) found to be infested with scabies with an incidence rate (IR) 10/10,000 and half of them was from Razeh district. Males consist 60 % of cases and IR was highest among age groups 15-40 years (35/10,000). Out of 66 index cases, 62% were illegal Yemeni travelers (IYT) who were deported from Saudi Arabia’s prisons and 38% was fighters came from the battlefront camps at Saudi borders. The outbreak appeared in the 5th epi week after contact with index cases in the epi 2nd week.

**Conclusions** Scabies outbreak introduced to Saddah by IYT and fighters and enhanced by poor environmental conditions and water scarcity as result of the conflict. Early treatment of infested cases among soldiers and prisoners before returning home to prevent further spread of the disease among household members and resident communities is mandatory. Improving hygiene at prisons and battlefront camps and proper treatment of cases and contacts is pre-requisite. Mass treatment for infested and contact persons should be go hand on hand with awareness campaigns.
**Background** Crimean Congo hemorrhagic fever (CCHF) is a severe hemorrhagic fever with case fatality rate up to 50%. It is caused by a tick-borne virus belonging to family Bunyaviridae, genus Nairovirus. Transmitted to humans through bite of infected ticks or by direct contact with viremic animals or humans. CCHF is endemic in Africa, Balkans, Middle East and Asian countries. It’s also prevalent in Pakistan with periodic outbreaks, first case reported in 1976. Majority of cases are reported from Baluchistan province each year including cases from neighboring country Afghanistan. These cases are admitted and treated at CCHF isolation ward at Fatima Jinnah hospital Quetta.

**Purpose** To investigate cases, assess risk factors and recommend control measures.

**Methodology** Hospital was visited to review patients’ records along with personal interviews with patients, doctors, nurses and Medical Superintendent of hospital. Active contact tracing was undertaken among family, friends and ward staff.

**Results** 62 suspected cases were reported between 1st Jan – 30th August 2016 at isolation ward Fatima Jinnah hospital Quetta. 76%(n=47) cases were from various districts of Baluchistan and 24%(n=15) from Qandahar Afghanistan. 73%(n=45) cases were male and 27%(n=17) females. Mean age 32 years with range 7-88 years. PCR of 89%(n=55) cases was done and 47%(n=26) were CCHF Positive. 9 deaths reported with CFR 14.5% and all CCHF PCR positive. All cases had history of animal contact (slaughtering, meat and waste handling). All Contacts traced and found symptom less after following for 14-days.

**Conclusions** Animal contact was most probable cause of outbreak. PDSRU designated as CCHF focal point and Response team was formulated by DoH on our recommendations. Close coordination with livestock department to disinfect animals in province. Awareness sessions regarding animal handling, CCHF prevention and control at each district level planned and started. Provision of PPE and other latest equipment at Isolation ward needed urgently.

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**Background** CCHF is a tick-borne disease causing severe viral hemorrhagic fever outbreaks, with case fatality rate of 10–40%. 1976 first case reported in Pakistan and disease is still prevalent in country with periodic outbreaks. On 26th April 2016, Provincial Disease Surveillance and Response Unit was informed that two CCHF cases were admitted in isolation center for CCHF at T.B Sanatorium Hospital Quetta.

**Purpose** To find out risk factors and recommend control measures.

**Methodology** Hospital was visited and hospital records of illness history and investigations were reviewed. Face to face interviews were carried out with concerned doctors, nurses and Medical Superintendent of the hospital. Active contact tracing was undertaken among the family, friends and staff of the Medical ICU where cases were treated.

**Results** First case was a male of age 45 years resident of Bhosa Mandi Quetta, cattle seller by profession was brought to isolation ward on 20th April with high grade fever, weakness, confusion, nasal bleeding and bleeding per rectum, with a low platelets count. His PCR was positive for CCHF but improved and discharged next week. Second case was a male of age 17 years resident of Bhosa Mandi Quetta, laborer in cattle market, was brought to isolation ward on 24th April with high grade fever, headache, vomiting with blood for last one day. His PCR was negative for CCHF. He was improved and was discharged from hospital on 28th April. Both Patients had no travel history but both had animal contact history. All other family members, friends were symptom less. Contacts were traced and followed for 14-days.

**Conclusions** Fumigation of Medical ICU was carried out. Separate isolation wards were recommended in all hospitals. Bio-safety measures to avoid nosocomial infections were suggested. Medical education and awareness regarding handling such patients and also for butchers and animal handlers was recommended.
Zoonotic and Vector Borne Diseases

Abstract Code: 2016-EOH-266

Presenter Name: Dr. Waheed Ahmed | Author: T. Ghafoor | Country: Pakistan

Presenter Email: drlashari@yahoo.com

Title: Outbreak of Crimean Congo Hemorrhagic fever (CCHF) in District Zhob, Province Baluchistan, Pakistan, 2014.

Background On August 17, 2014 the district health officer from Zhob (a district at the Afghan border with population of 200,000) reported 13 cases of CCHF with 6 deaths to the Provincial Disease Surveillance and Response Unit in Baluchistan. One FELTP fellow was deployed for investigation on August 25, 2014.

Purpose To detect and prevent similar outbreaks in District Zhob Balochistan.

Methodology A suspected case was defined as a patient with body aches, fever and a history of animal contact admitted in the district Zhob hospital from July 12, 2014 to August 24, 2014 and referred to CCHF isolation ward at tertiary hospital in city Quetta. A retrospective review of medical records was done. Telephonic and face-to-face interviews were conducted with district health management team and treating physicians. Blood samples were sent to National Institute of Health.

Results 13 cases (resulting in 6 deaths) were reported, 7(54%) cases were from an area of the district adjacent to the Afghan border. Median age was 37 years (range: 20 -60 years) males were more affected 77% (n=10). 7 cases (farmers and shepherds) had history of contact with cattle while 6 cases had history of contact with a suspected case. Case Fatality Rate was 46%. Epi curve shows intermittent source of infection. Polymerase Chain Reaction was positive for CCHF virus in 3/3 blood samples.

Conclusions The outbreak of CCHF occurred due to infected cattle at the Pak-Afghan border. Community could not be visited due to the security-compromised Afghan border. Based on this investigation, Health department started health education campaign to educate the general population and livestock department started surveillance by using syndromic case definition in district Zhob.

Zoonotic and Vector Borne Diseases

Abstract Code: 2016-EOH-189

Presenter Name: Dr. Muhammad Khan | Author: J. Khan | Country: Pakistan

Presenter Email: furqangadap@gmail.com

Title: Investigated an Epidemic of Dengue Prevalence in Karachi Sindh Pakistan 2013

Background Dengue virus infection dangerously infecting yearly 2.5 billion people worldwide with 20,000 deaths by WHO in more than 100 countries, including Pakistan. Every year thousands of people get infected with dengue in Pakistan the first confirmed outbreak in Karachi was due to serotype DV-2 reported in 1994. There is no vaccine for the prevention of Dengue virus infection. Dengue virus belongs to Flaviviridae family and is transmitted to humans by infective female of Aedes aegypti or Aedes albopictus mosquito. Both DHF and DSS can be fatal and can lead to death among the patients.

Purpose To examine the annual trends, seasonality, and clinical features of dengue fever in Karachi Sindh Pakistan.

Methodology The study was conducted during the Dengue Fever epidemic in a tertiary care hospitals of Karachi Pakistan from 1st January 2013 till the 1st September 2013. The inclusion criterion was the presence of dengue fever (DF) which defined as finding three out of ten classical symptoms as described by World Health Organization (WHO) criteria and confirmed on the basis of presence dengue antibodies in a person from an endemic area. Demographic information and dengue IgM status of all patients tested for dengue IgM antibody from January 2013 to September 2013 were analyzed to look for trends of IgM-positive cases in Karachi Pakistan.

Results Total 993 cases including Males (65.5%) and females (34.5%). Mean age is 19-35 Years 43.8%, Peak incidence in August 34%, Fever 94.7%, Hemorrhage 3.8%, Platelets count <30000 is 2.1%, IgM +ve 84.7%, IgG+ve 57.5%, IgA +ve 1.7%, ICT 99%, Expired 01%.

Conclusions Dengue virus is now endemic in Karachi Pakistan, circulating throughout the year with a peak incidence in the post monsoon period. Median age of dengue patients has decreased and younger patients may be more susceptible.
Background Dengue fever (DF) is the most rapidly expanding mosquito-borne viral disease affecting humans worldwide. About 2.5 billion people in the more than 100 tropical and subtropical countries where the Aedes Aegypti mosquito is found are at risk of contracting dengue. Recently, repeated DF outbreaks reported in Yemen of them two outbreaks were reported from Hadhramout on 2010 and 2015.

Purpose To contribute in controlling DF among the study population through conducting health education.

Methodology Community-based quasi-experimental (Pre and post intervention) study was conducted. Sample size was calculated using Epi Info version 7 to be 378. Data was collected by face to face interviews using structured questionnaire. Data was entered and analyzed using epi-info.

Results In our study we interviewed 378 and 350 during pre and post intervention respectively. Female constituted 61% and 58.5% pre and post intervention. The mean age of participants was 36.9 ± 9.5 pre intervention and 37.7±9.1 post intervention. The mean knowledge of participants was 2.7 and 6.6 out of nine pre and post intervention respectively. Fever as the main symptom of DF was mentioned by 80% and 100% during pre and post intervention, with statistical significant (P value <0.001). Hearing about hemorrhagic DF was 40.7% pre and 96.7 post intervention, with statistical significant (P value <0.001). The mean attitude of participants toward DF was 3.8 and 4.5 out of five pre and post intervention respectively. Those who realize that DF is a serious disease constituted 65.7% and 85.3% respectively with statistical significant. As an important practice to prevent DF, covering water containers was mentioned by 97% and 99.7 respectively, the difference was statistically significant (P value = 0.023).

Conclusions Health education is an important tool to improve knowledge, attitude and preventive practices of DF. We recommend to conduct health education in a regular bases to increase the awareness.

Background Cutaneous leishmaniasis (CL) is the most common form of leishmaniasis affecting humans. It is endemic in Iraq and it was recognized as an important public health problem. Recently, an outbreak occurred during 2014-2016.

Purpose To describe the outbreak by person, place, and time as well as recommend further measures for prevention and control.

Methodology Data obtained from the counter-part zoonosis units in all affected provinces on weekly basis. Case investigation forms were received from all public health outlets in all Iraqi provinces. CL case was defined as a person showing the characteristic skin lesions who was clinically diagnosed by a general practitioner or dermatologist. Estimated population data were obtained from the Central Statistics Office.

Results The outbreak started late in 2014 at week 47 in Wasit governorate and continued throughout 2015 and early 2016 to involve most of Iraqi governorates. The total reported cases were 32,349. Epidemic curve showed three peaks (week 11 and 50 in 2015; and week 5 in 2016). The overall incidence was 87.6/105 population). The highest incidence rate was in Diyala governorate (398/105 population) and the lowest incidence rate was in Duhok governorate (1.4/105 population). Higher incidence was below 15 years old (112/105 population). There was a higher incidence in males than female in 15-45 years old (84.7 vs. 69.4/105 population). Only 6.9% of the cases were reported among the Internally Displaced Population (IDPs) with incidence rate (88.9/105 population). All the patients received treatment. No outbreak investigation was done and no data obtained about risk factors.

Conclusions This outbreak had a large magnitude. Further in-depth studies are recommended to identify the exact causative agents, vectors, reservoirs, and risk factors.
Zoonotic and Vector Borne Diseases

Abstract Code: 2016-EOH-162

Presenter Name: Dr. Haidar Hantosh | Country: Iraq

Presenter Email: hantosh66@gmail.com

Title: Anthroponotic Cutaneous Leishmaniasis Outbreak in Thiqar Governorate, Iraq, 2015

**Background** Up to 60% of the worldwide burden of cutaneous leishmaniasis is in the Eastern Mediterranean Region. Two forms of leishmaniasis exist, anthroponotic, when human is the reservoir and zoonotic. Anthroponotic cutaneous leishmaniasis (ACL) usually caused by L.tropica, and transmitted by P. sergenti. The lesion usually dry and multiple. The disease tends to occur in clusters in densely-populated urban settings, mainly in Afghanistan, Iran, Morocco and Syria.

**Purpose** To describe the epidemiological characteristics of ACL outbreak and set recommendation for control in Thiqar Governorate, Iraq, 2015.

**Methodology** We reviewed surveillance weekly reports and case investigation forms to collect data on CL in Thiqar during 2015 data collection tool consist of basic demographic, clinical features, and risk factors information. We calculated incidence and compared age specific rates we described CL case by age, sex, district, time of occurrence and characteristics of skin lesions.

**Results** We captured 3,673 cases of ACL, compared by average annual occurrence of 79 in the last five years. Male to female ratio was 1.08:1. The mean age was 13 years (±12 SD). The highest was among children aged 5-14 (345 cases per 100,000 population). Nasiyiriah district reported the highest incidence (374 cases per 100,000 population). About two thirds of cases were from urban and peri-urban areas. The majority (3122, 85%) of the lesions were dry and 64% of the cases were with two or more lesions. The highest frequency reported in Sep. through Dec, 2015 (2901, 79%).

**Conclusions** Unprecedented ACL outbreak occurred in Thiqar during 2015, most likely due to change in disease epidemiology.

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Zoonotic and Vector Borne Diseases

Abstract Code: 2016-EOH-159

Presenter Name: Dr. Hanadi Hussein | Authors: J. Eissa, S. Alhussein, O. Lina, M. Samauel | Country: Sudan

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Title: Field Investigation for Cluster of Human Brucellosis Suspected Cases - Shargelneel Locality, Khartoum State, Sudan, February 2016

**Background** On 2nd February, 2016, cases of human brucellosis were reported from Shargelneel locality, they suspected milk bought from nearby dairy farms to be the source of their infection.

**Purpose** An outbreak investigation was done to verify the existence of an outbreak, identify the source of infection and to raise awareness of health cadres.

**Methodology** It was decided to study patients who fulfill criteria of case definition of brucellosis, from the 1st of January 2015 to 2nd February, 2016. Five patients were investigated; simultaneously random blood samples were collected from two dairy farms and awareness posters were distributed. Medical records of nine health facilities were reviewed.27 health cadres were interviewed. Two awareness workshops were conducted. The effect of this intervention was assessed.

**Results** All five patients investigated were positive for brucellosis. Three of five had a history of unpasteurized milk consumption, and one had direct contact to animals. 20 blood samples were randomly selected from two dairy farms, six were positive for Rose Bengal Test and the results was confirmed by ELISA. Nine physicians were interviewed two of them considered brucellosis priority in diagnosis of fevers and diagnosed cases, one of nine is not aware about treatment protocol. Nine lab technicians were interviewed, for six of them the diagnostic kids are available, two registered positive cases, all of them are well aware and trained. All nine statisticians didn’t register cases of brucellosis.

**Conclusions** Consumption of milk was the main cause of the outbreak. The burden of brucellosis is not clearly defined. Brucellosis is neglected in clinical diagnosis. Awareness of community is weak. We recommended assessing the effect of intervention within six months’ period, raising awareness of medical cadres and study prevalence of human brucellosis in Shargelneel locality. Integration with veterinarians is important in prevention and control.
**Zoonotic and Vector Borne Diseases**

**Abstract Code:** 2016-OTH-348  
**Presenter Name:** Dr. Mohamed Elghazaly  
**Authors:** A. Yakoub, S. Samy, M. Genidi, A. Kandeel  
**Country:** Egypt  
**Presenter Email:** dr.mo.elghazaly@gmail.com  
**Title:** Evaluation of Communication at Human Animal Interface - Menia Governorate, Egypt, January 2016

**Background**  
One Health approach for zoonoses requires communication and data feedback among peripheral surveillance officers on human and animal sides to ensure timely response to a public health event and to reinforce prevention and control measures related to Zoonotic diseases. The study aimed to identify the gaps in communication and data sharing to strengthen communication channels on peripheral level.

**Purpose**  
To evaluate the communication at Human - Animal interface on governorate and district level at Menia governorate, Egypt.

**Methodology**  
Menia governorate was selected as a pilot for evaluation, since it’s the highest governorate reporting Zoonotic diseases among humans in 2015 (brucellosis and Rabies). All districts from both human and animal side were included. A self-administered questionnaire was distributed among the focal points for Zoonotic diseases on governorate and district levels on both human and animal health sides. Questions included time and frequency of reporting, feedback from other side, joint field investigations and efficiency of regular meetings between health and veterinary directorates.

**Results**  
Our major findings indicate a strong desire and commitment for coordination between human and animal sectors to response to Zoonotic diseases. Yet lack of standard operating procedures (SOPs), documentation and feedback for notification restricts the efforts for effective communication. Moreover, Joint field investigations are only limited to avian influenza.

**Conclusions**  
Improving communication between human and veterinary services will reinforce One Health concept and will aid for better prevention and control of Zoonotic diseases in Egypt. According to our finding it is vital to assign a focal person on all levels and develop clear SOPs for data sharing and notification. Extend joint field investigations for all priority Zoonotic diseases, develop indicators to regularly assess the communication at the human animal interface and extend the evaluation to include all governorates in Egypt.

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**Background**  
Malaria, a preventable disease has 3.4 billion people at risk globally with 207 million cases and 627 deaths reported in 2013. Of all malaria deaths, 90% occurs in Africa and 25% of malaria burden in Africa occurs in Nigeria. Goal of elimination program is to reduce malaria–related transmissions to a less public health concern.

**Purpose**  
We assess trends of malaria prevention, diagnosis and treatment strategies from 2011 to 2014 and if targets are met.

**Methodology**  
Kaduna state, north western Nigeria with estimated population of 7.3 million has 23 districts with. Variables related to malaria diagnosis, treatment and prevention in pregnancy from data sent by 461 health facilities to National Health Management Information System from January 2011 to December 2014 was analysed. Frequencies, proportions, trend analysis and associations between variables were calculated with 95% confidence interval.

**Results**  
Data completeness was 89.8%. Of the 1,008,728 presented at health facilities, 56.6% had fever, 34.2% was tested with rapid diagnostic test (RDT) and 5.5% with microscopy. Of the 361,464 prescribed artemisinin based combination therapy (ACT), 36.4% had confirmed malaria. Children aged < 5 years were 1.28 (95% confidential interval (C.I), 1.27-1.29; p<0.01)) likely not tested for fever and 2.6 (95% C.I., 2.63 – 6.67; p<0.01) times likely to have ACT for confirmed malaria. Presumptive malaria treatment with ACT increases from 31.8% in 2013 to 200.2% in 2014. Among pregnant women long lasting insecticidal net ownership increases from 1.4 to 16.1% and uptake of two doses of sulphadoxine pyremethamine form 0.9 to 24.9%.

**Conclusions**  
Implementation of malaria control strategies Kaduna State, Nigeria is favorable with current prevalence at 36.4%. We recommend strict adherence to guidelines with focus on vulnerable groups.
Zoonotic and Vector Borne Diseases
Abstract Code: 2016-EOH-180
Presenter Name: Nahla Ibrahim | Authors: R. Moshref, L. Moshref, J. Walid, H. Al Satti | Country: Saudi Arabia
Presenter Email: nahlakhamis@yahoo.com
Title: Knowledge and Attitude towards Zika Virus Among Medical Students at King Abdulaziz University, Jeddah, Saudi Arabia

Background Zika virus (ZIKV) has been transmitted in an alarming pandemic speed in 60 countries and territories till mid-2016. Medical students need to have sufficient information about ZIKV and other emerging diseases.

Purpose To assess the level of knowledge and attitudes of medical students enrolled in King Abdulaziz University (KAU) about ZIKV, and to identify the factors associated with their knowledge.

Methodology A cross-sectional study was conducted among 426 medical students in KAU, selected through stratified random sample method in 2016. A validated, confidential, interviewing questionnaire contained 25 knowledge questions and 10 attitude statements was used. Both descriptive and inferential statistics were done.

Results The commonest source of students’ information about ZIKV was from social media. About half of the participants correctly identified mosquito bites as the commonest mode of ZIKV transmission (53.3%), and it can be transmitted through perinatal route (50.5%). However, only 20.7% correctly identified its main symptoms (fever, conjunctivitis, arthralgia). Calculations of ZIKV knowledge score revealed that 77.5%, 15.0%, and 7.5% of the participants obtained poor, fair, and satisfactory scores, respectively. Age, educational year and attending training course on ZIKA are significantly associated with better knowledge (p < 0.05). Concerning attitudes, about one-half of the participants agreed that the world can control ZIKV epidemic. More than one-third perceived that it will be dangerous to visit epidemic counties. The majority of the students are interested to learn more about: ZIKV, other emerging diseases and travel medicine.

Conclusions The majority of medical students had a limited knowledge about ZIKV. Age, educational year, attending programs about ZIKA were associated with better knowledge. Implementation of educational programs are needed. Inclusion of emerging diseases, mass gathering medicine and travel medicine in the curriculum of medical students is required.

Antibiotic Resistance
Abstract Code: 2016-EOH-79
Presenter Name: Dr. Jamshed khan | Author: E. Ahmed | Country: Pakistan
Presenter Email: dr.jamshedkhanzada@hotmail.com
Title: Prevalence and Risk Factors of Multiple Drug Resistant (MDR) TB Among Cases in T.B Sanatorium Kotri District Jamshoro, Sindh

Background MDR TB is big challenge in local scenario especially in rural areas of Sindh where cases are reporting high in number.

Purpose To estimate the prevalence and determine the social factors and causes of treatment failure associated with MDR TB.

Methodology A descriptive cross sectional study was conducted at TB Sanatorium Hospital Kotri from 1st July to 31st August 2010. A case definition having sign symptoms of MDR Pulmonary tuberculosis with complete lab investigation but not cured even after complete treatment were selected who reported in OPD and Indoor blocks. All data was collected with consent of patients on standardized questionnaire to find the risk factors.

Results A total of 80 patients were enrolled, male to female ratio of 1.8:1. Mean age was 30.9 years with age range of 15-60 years. MDR tuberculosis was observed in 23(28.75%). MDR tuberculosis was seen more commonly among non-smokers 14(60.8%). 8 patients (34.7%) had completed regimen,14 patients (68.8%) had history of incompletely taking anti-tuberculosis therapy (ATT) while one patient (4.3%) was still on ATT. Improper tuberculosis treatment taken by the patients due to side effects of drugs was observed in 17.3% patients followed by those whose symptoms were relieved 3(13%). High cost of anti-tuberculosis drugs was observed as an associated factor with MDR-TB in two cases (8.6%). In Non-multidrug resistant tuberculosis patients (MDR-TB), 9 patients were symptoms free followed by side effects of drugs in 7(12.2%) patients and high cost was complained of by five patients (8.7%).

Conclusions Study highlighted that general and social factors play an important role in development of MDR-TB. We strongly recommend that at risk groups for MDR-TB should be identified & brought under DOTS program in a high disease burden country like Pakistan.
Antibiotic Resistance

Abstract Code: 2016-EOH-312

Presenter Name: Dr. Majida Hanine   |  Authors: M. Akrim, A. Maaroufi, K. Zerouali, C. Nejjari, I. Cherkaoui  |  Country: Morocco
Presenter Email: majidahanine@hotmail.fr

Title: Risk Factors for Infection by Extended-Spectrum Beta-Lactamases Producing Escherichia Coli and Klebsiella Pneumoniae in Intensive Care Units, Casablanca, Morocco, 2013

Background Nosocomial infection caused by extended-spectrum β-lactamases (ESBL)-producing pathogens has increased rapidly worldwide in recent years, leading to limitations of treatment options. We have no information on such problems in Morocco.

Purpose We aimed at identifying risk factors for nosocomial infections due to ESBL-producing Escherichia coli or Klebsiella pneumonia and their impact on clinical outcomes.

Methodology we conducted a retrospective case-control study from January to December 2013 in three intensive care units at the university hospital, in Casablanca, Morocco. Patients with nosocomial E. coli or K. pneumoniae infections were included in the study. Patients with ESBL-producing E. coli or K. pneumoniae infections were compared to those with non–ESBL-producing E. coli or K. pneumoniae infections. Demographics, comorbidities, devices utilization and antibiotic use were analyzed.

Results ESBL-producing E. coli or K. pneumonia infections were identified in 70 case patients, and non–ESBL-producing E. coli or K. pneumoniae were identified from 77 patients during the study period. In multivariate analysis by logistic regression, a longer duration of hospital stay until E. coli or K. pneumonia isolation (OR=1.25; 95% CI= 1.11-1.43); Charlson Comorbidity Index (OR:3.04;95% CI, 1.73-5.36 ) and previous treatment with third generation cephalosporins (OR:11.85;95% CI=3.33-42.11) were independently associated with ESBL production resistance. Compared with patients infected with non ESBL-producing E. coli or K. pneumonia, patients infected with ESBL-producing E. coli or K. pneumonia had longer hospitalization durations (33.2 days vs 13.1 days). No difference in mortality was highlighted between cases and controls (OR, 1, 73; 95% CI,0.8-3.02,).

Conclusions Creation of an antimicrobial stewardship and resistance committee, an emphasis on appropriate use of the third-generation cephalosporins and effective infection control measures in patients with high Charlson Comorbidity Index are needed to reduce the incidence of nosocomial infections caused by these organisms.

Antibiotic Resistance

Abstract Code: 2016-EOH-181

Presenter Name: Prof. Walid Alali     |   Authors: N. Eltai, H. Yassine, M. Abu-Madi        |    Country: Qatar
Presenter Email: walali@qf.org.qa

Title: Prevalence of Antibiotic Resistant Enteric E. Coli Isolated from Fecal Samples of Food Handlers in Qatar

Background Bacterial resistance to antibiotics is a major clinical and public health problem. The use and misuse of antibiotics, poor infection control practices, inadequate sanitary conditions, and inappropriate food-handling encourage the further spread of antibiotic resistance.

Purpose To determine the prevalence of antibiotic resistant (AR) enteric E. coli isolated from fecal samples of immigrant food handlers in Qatar. There are currently limited information on antibiotic resistance profiles in commensal enteric organisms from non-clinical human populations in Qatar.

Methodology Food handlers arriving to Qatar for work went through a mandatory medical screening at the Medical Commission. The screening included submitting a fecal sample for pathogen monitoring. A randomly selected subset of the fecal samples (n=178) were used for E. coli isolation and antibiotic susceptibility testing using E-test StripTM (BioMerieux, France) against 9 antibiotics (Ampicillin, trimethoprim, sulfamethoxazole, chloramphenicol, ceftriaxone, gentamicin, tetracycline, ciprofloxacin, and amoxicillin-clavulanic acid).

Results 29.2% (n=178) of the fecal samples were positive for E. coli. Thus far, 36 E. coli isolates (20%) have been characterized for antibiotic susceptibility. About 53% of the isolates were resistant to at least one antibiotic; whereas 33.3% of the isolates were multi-drug resistant (those resistant to three or more antibiotics). The highest resistance prevalence was to trimethoprim (39%), followed by ampicillin (36.1%), and sulfamethoxazole and tetracycline (33.3%, each). Resistance to ciprofloxacin (16.7%) and ceftriaxone (5.6%) were observed. None of the isolates were resistant to gentamicin or amoxicillin-clavulanic acid.

Conclusions It appears that the study subjects (food handlers that are, in general, healthy individuals), carry an array of multi-drug resistant enteric E. coli bacteria, which can pose a significant public health risk to the general population in Qatar. This risk occurs when antibiotic resistance E. coli disseminate through direct contact and/or indirectly through food contaminated by inappropriate food-handling.
Background An outbreak of Colistin resistant Klebsiella Pneumonia (CRE) and Acinetobacter baumannii occurred between February and July 2016.

Purpose To determine the extent of the outbreak, identify risk factors for antimicrobial resistance and prevent further increase in the rates of multi-Drug resistant organisms (MDROs).

Methodology Total of 85 colistin resistant organisms were labeled as PAN. Of them 22 patients were still admitted during the time of investigation. An abstraction form composed of demographical data, comorbidities, details of the current admissions, and procedures done to the patient. In addition to tracking all the movements during hospital stay and reviewing all the cultures done to the patient.

Results Mean age was 49.71±17.824 (20-79 years), 90.9% were males, 63.6% cases admitted under medical unit. The average duration of stay in the ED was 1.23 day. Over 2/3 had hypertension and diabetes mellitus. A total of 10 patients presented with decreased level of consciousness. Majority of patients staying between 20-40 days in the hospital & the average number of days taken to develop colistin resistance (PAN) was 44.18. Resistance was solely related to two organisms that were Acinetobacter baumannii (59.1%) and Klebsiella pneumoniae (40.9%). Ventilators and folly’s catheters were equally (95.5%) used by 21 patients. The most common site of infection was respiratory (41.3%), of which most were sputum samples. Resistance of over 75% is recorded by Antibiotics like Tazocin, Ciprofloxacin, Imepenen and oxacillin. Colistin resistance was near to half.

Conclusions Prolonged stay in the ICU, frequent uses of different devices, presence of comorbidities, the uncontrolled use of Antibiotics are the potential risk factors of developing PAN colistin resistance which need further studies.
NCD-Cancer

Abstract Code: 2016-FWBD-57
Presenter Name: Dr. Mohammed Youbi          |   Authors: A. Zidouh         |    Country: Morocco
Presenter Email: youbimohammed@yahoo.fr
Title: Diagnosis and Treatment of Cancers in the National Institute of Oncology, Morocco, 2015

**Background** The analysis of times of diagnosis and treatment of cancers in Morocco, conducted in 2008, noted that these were diagnosed in advanced stages, in relation to delays at every step of care. A national plan for prevention and control of cancers was implemented from 2010, including improvement of diagnosis and treatment strategy.

**Purpose** The objective of this study is to describe the stages of diagnosis of more prevalent cancers in Morocco and estimate delays in diagnosis and case management, following the implementation of the national plan.

**Methodology** It’s a descriptive cross-sectional survey, conducted through an interview of patients with breast cancer, cervix, lung, or rectum cancer during their care in INO. We have described the stage of cancer at diagnosis, estimated the “patient time” and the “system time” and finally check their changes compared to 2008 situation.

**Results** Among the 497 patients interviewed, 37.5% were diagnosed in the 1st or 2nd stage and 20.5% in stage VI. The first consultation following onset of symptoms occurs after two months on average, the diagnosis made after 70 days and treatment after 57 days. Although breast cancer symptoms appear leading later to consultation, its diagnosis seem established more quickly, more easily and at earlier stages than other locations.

**Conclusions** Although there was a slight shortening of the patient and delay diagnosis, virtual stagnation of the treatment time and improvement of breast cancer’s stages of diagnosis compared to 2008, it is necessary to strengthen awareness for a better recognition of onset symptoms of cancers, both by public and by Health professionals. Therefore, it would be desirable to strengthen early detection strategy of the

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Child Health

Abstract Code: 2016-HIV/STI-187
Presenter Name:  Dr. Ahmed Ameen              |     Country: Pakistan
Presenter Email: ahmedameen1995@gmail.com
Authors: M. Saleem
Title: Evaluation of Infant Mortality Surveillance System in Khyber Pakhtunkhwa, Pakistan during April and May 2016

**Background** Infant mortality rate (IMR) is used as indicator of health status of a country. Childhood mortality rates are used for monitoring a country’s progress towards Millennium Development Goal-4, which aims for two-thirds reduction in child mortality by 2015.

**Purpose** The study was aimed to evaluate performance of IMR surveillance system in Khyber Pakhtunkhwa (KPK) province to identify weaknesses that require strengthening.

**Methodology** This cross-sectional study was conducted at directorate general health office KPK, Peshawar during March-April, 2016. Surveillance system was evaluated by using CDC Updated Guidelines for Evaluating Public Health Surveillance System 2001. Review of surveillance reports, records and interviews of stakeholders were carried out using semi-structured questionnaire. Specified surveillance system attributes were assessed. Sensitivity was calculated using World Bank estimates. Data was analysed and inferences were drawn according to guidelines.

**Results** According to World Bank, IMR for Pakistan in 2015 was 66/1000 live births. Two different systems are reporting infant mortality in KPK; District Health Information System (DHIS) and Lady Health Workers (LHWs) Management Information System (MIS). Both these systems are simple as case definition was properly followed. Systems are flexible as DHIS format had already incorporated other diseases and had potential to adapt to new changes. Both systems are stable as fully funded by government. Representativeness is poor, DHIS does not cover tertiary health care facilities while LHWs MIS covers about 65% of population, also there is no involvement of private sector. It takes 15 days on average for reports to reach provincial office from healthcare facilities. Data qualities in both systems were found average. Sensitivity in both systems was 84%.

**Conclusions** As burden of infant mortality is high in Pakistan, provincial health department needs to develop and implement an infant mortality surveillance system to monitor disease trends and identify outbreaks in timely manner.
Child Health

Abstract Code: 2016-OTH-241
Presenter Name: Dr. Ahmad Alghumgham | Authors: H. El Bushra, A. Bin Saeed | Country: Saudi Arabia
Presenter Email: dr.ahmad.alghumgham@gmail.com
Title: A Cluster of Deaths in a Neonatal Intensive Care Unit (NICU) in Al-Baha, November 2015

**Background** On 29-30 November 2015, five deaths occurred within 24 hours in the Neonatal Intensive care unit (NICU) of King Fahad Hospital (KFH), Al-Baha. Deaths occurred within few hours after blood transfusions (BT).

**Purpose** Determine the cause of the neonatal deaths and possible public recommendations to prevent future deaths.

**Methodology** We conducted active case finding to define the scope of the outbreak and two retrospective cohort studies to identify any potential iatrogenic causes. A case was defined as any patient admitted to KFH, Al-Baha throughout the year 2015 and received blood transfusion followed by demonstration of hypotension, bradycardia and hypoventilation or oxygen desaturation (HBH) during or within 12 hours following BT. Data was collected through clinical records using a structured data collection instrument tailored to serve the purpose of each study.

**Results** Number of deaths by international week (eight deaths) exceeded the average (1.86) on week 48 of the international year which corresponds to this cluster. Eight patients met the case definition (including one adult case); six died and two survived. All cases received blood transfusion from three specific units on serial order donated on the morning of November 15, 2015. The seven affected neonates were the only recipients of the first two units. None of the other potential risk factors showed significant association to HBH. No autopsies were performed.

**Conclusions** This investigation revealed HBH was exclusively related to three consecutive blood units donated on the same day. Having excluding recipient associated risk factors, the cause of HBH is most likely a toxin-producing pathogen but could not be confirmed due to lack of supporting evidence.

Hepatitis and HIV

Abstract Code: 2016-OTH-170
Presenter Name: Dr. Doaa Oraby | Authors: N. Abdel-Tawab | Country: Egypt
Presenter Email: doraby@popcouncil.org
Title: Addressing Reproductive Health Needs of Women Living with HIV

**Background** In Egypt, very little is known about the sexual and reproductive health (SRH) of women living with HIV (WLHIV). A diagnostic study conducted by the Population Council revealed that most of WLHIV did not have much information on pregnancy prevention other than condom use. Several WLHIV reported unplanned pregnancy following condom rupture or husband refusal to use it. Furthermore, many of them wanted to become pregnant but did not know how to conceive while using condoms and how to protect their children from getting infected.

**Purpose** The study focused on identifying and pilot testing an SRH and HIV integration model in a highly stigmatized low prevalence setting. The model focused on counseling provided at three NGOs having active linkages with WLHIV then referral to selected primary health care (PHC) centers.

**Methodology** Six months following the implementation of the model, in-depth interviews were conducted with 14 WLHIV who utilized the services in the month prior to the assessment and with service providers.

**Results** Prevalent stigma and discrimination among providers, turnover of trained providers, negative attitude of providers who were not trained and shortage of infection control measures presented challenges to the pilot model. On the other hand, the referral model worked smoothly while maintaining confidentiality of WLHIV together with increased trained providers’ acceptance and willingness to serve WLHIV and increased satisfaction of WLHIV with delivered services.

**Conclusions** The effective model to address SRH needs of WLHIV in low prevalence settings with prevalent stigma and discrimination is providing basic SRH counseling at the NGOs targeting WLHIV followed by referral to selected PHC facilities where providers are trained to adequately address the SRH needs of WLHIV. The cornerstone of success of the model is the established effective partnership among governmental sector and NGOs and adequate training of health care providers to overcome their biases and prejudices.
Hepatitis and HIV

Abstract Code: 2016-FWBD-171
Presenter Name: Dr. Doaa Oraby | Authors: N. Abdel- Tawab | Country: Egypt
Presenter Email: doraby@popcouncil.org
Title: HIV and Women in Egypt: Sociocultural, Programmatic and Legal Vulnerabilities

Background Although there are no national statistics that document the rising prevalence among women, anecdotal reports of VCT centers suggest an increase in the number of women infected with HIV.

Purpose The current study examines the sociocultural, programmatic and legal factors that aggravate Egyptian women’s vulnerabilities to HIV/AIDS.

Methodology Literature review of published and unpublished reports and critical appraisal of relevant existing SRH and HIV national laws and policies were conducted in addition to 12 focus group discussions with married women aged 18-40 years.

Results Married women have limited HIV related knowledge due to the prevalent “culture of silence” around issues of sexuality and women’s restricted mobility. Furthermore, the vertical nature of RH services (FP, MCH, and HIV) does not allow women seeking routine health services for themselves or their children to receive information on HIV. Married women who are suspicious of husbands’ risky behaviors are often hesitant to question such behavior for fear of violence and economic dependence on husbands. The HIV vulnerability of women is further compounded by the faulty understanding of religious teachings whereby women are made to believe that the husband has the right to beat his wife and to have sex with her regardless of her will. Ineffective enforcement of laws governing minimum age of marriage or laws protecting women exposed to intimate partner violence may further exacerbate women’s vulnerability to HIV.

Conclusions The study revealed that both men and women are vulnerable to HIV. However, the vulnerability of women is further aggravated by sociocultural, legal and programmatic factors. The study recommended raising HIV awareness of women, integrating HIV information and counseling into RH services, women empowerment in addition to addressing the misunderstanding of religious teachings and the legal loopholes.

Hepatitis and HIV

Abstract Code: 2016-EOH-327
Presenter Name: Dr. Shaimuna Sajjad | Authors: W. Ahmad, S. Jaffery, M. Asif, E. Alam | Country: Pakistan
Presenter Email: fareehaather@yahoo.com
Title: Treatment of Chronic Hepatitis C (HCV) in Thalassemia Major Patients

Background Patients with thalassemia major are managed by regular blood transfusion which exposes them to blood borne infections including chronic Hepatitis B and C. Treatment of HCV in these patients is difficult due to hematological side effects of interferon and ribavirin.

Purpose To evaluate the treatment response to conventional interferon with ribavirin in patients with thalassemia major infected with chronic hepatitis C.

Methodology This was a pilot interventional study conducted at PMRC, JPMC Karachi, included 10 chronic HCV positive thalassemics. Baseline CBC, LFTs, serum protein/ albumin, RBS, serum ferritin, TSH, HCV RNA & genotyping were done. Conventional interferon 3 Million unit thrice weekly & ribavirin 200 mg daily for 24 or 48 weeks depending on the genotype. Treatment was monitored by CBC and ALT every month, ferritin after three months and PCR at 1st month (RVR), 3rd month (EVR), 6th month (ETR) and six months post treatment (SVR).

Results A total of 17 Anti HCV positive patients were enrolled (mean age 17.4+ 5.04). 12 were HCV RNA positive. Treatment could not be started in 2 patients due to uncontrolled diabetes and severe anaemia. Out of 10, 1 patient was lost to follow-up and the other developed seizures. Treatment was completed in 8 patients, age ranged 12-20 years, mean 15.8+ 2.58.. There were 5(62.5%) males and 3(37.5%) females. Genotype 3 (87.5%) was found in 7 patients, 1 had genotype 1. RVR was achieved in n=5 (62.5%) cases, negative PCR at 3 & 6 months of treatment (EVR) in n=7 (87.5%) patients, 1 patient was non responder. SVR was achieved in n=2 (25%) patients. Anaemia was the most common side effect due to which transfusion requirements increased in n=4 (50%) patients.

Conclusions Sustained virological response (SVR) with conventional interferon and ribavirin therapy is 25%. Anaemia is the most common side effect encountered during treatment.
Non-communicable Diseases

Abstract Code: 2016-FWBD-229

Presenter Name: Dr. Khwaja Mir Islam Saeed  |  Authors: H. Rasooly  |  Country: Afghanistan

Presenter Email: kmislamsaeed@gmail.com

Title: Prevalence of Risk Factors for Non-Communicable Diseases (NCD) in Herat City Using WHO STEP-Wise Approach

Background  Non-communicable diseases (NCDs) are major health and development challenges of the current century which is increasing worldwide due to high prevalence of controllable risk factors.

Purpose  This study was undertaken to measure the prevalence of major risk factors for non-communicable diseases in an urban setting, Herat City-Afghanistan.

Methodology  A provincial cross-sectional study was conducted from May-June 2015 on prevalence of NCD risk factors using the WHO STEPS instrument. The study enrolled a random sample of 1129 adults of age group of 25-70 years. Data were collected using a study questionnaire for assessing non-communicable diseases and their risk factors. Fasting venous blood sample was collected to assess the lipid profile and fasting blood sugar. Anthropometric measurements of the participants were also taken. Data was analyzed using SPSS version 20

Results  Out of all respondents 594 (52.6%) were females and 535 (47.4%) were males with a mean age of 41.7±13.1 years. Illiteracy rate was (54%) and 85.8% were married. Prevalence of smoking was 5.6% and 10.8% were mouth snuff users. Eighty-three percent ate fruits less than 3 days per week and 71.4% ate vegetables three days per week. Almost 10% practiced vigorous physical activity and obese and 52.3% were suffering from central obesity. Prevalence of blood pressure was 35.6% raised blood sugar was 9.9%, 28.4% had higher cholesterol and 45% had higher triglycerides. Furthermore, high level of low density lipoprotein (LDL) and high density lipoprotein (HDL) were both 47% in both groups.

Conclusions  The findings of study revealed a high burden of risk factors for NCDs in the study population, showing the country is experiencing both communicable and noncommunicable at the same time. It is recommended and on focusing of interventions to prevent and control the noncommunicable diseases.

Non-communicable Diseases

Abstract Code: 2016-MCH-225

Presenter Name: Dr. Abdulaal Chitheer  |  Author: A. Hassan  |  Country: Iraq

Presenter Email: abdulaaljetheer@yahoo.com

Title: Pattern of Fatal Injuries Among Assaulted Women, Iraq, 2010-2013

Background  Violence against women is a worldwide serious problem as a public health and human rights’ concern. Its health consequences are numerous and may be fatal. The Iraq Family Health Survey (IFHS 2006/7) reported a national prevalence of domestic violence against women of 21.2%. We know little about epidemiology of fatal injuries among violated women in Iraq.

Purpose  to describe pattern of fatal injuries among assaulted women in Iraq during 2010 through 2013.

Methodology  We reviewed national injury surveillance system (ISS) data available in Coroner Offices in eight governorates during 2010 through 2013. ISS is a sentinel surveillance in eight governorates, including Baghdad, documents all fatal and non-fatal injuries. Data collection tool includes demographics, mechanism, intention, place of injury and outcome. We analyzed data of all women’s deaths intended by others excluding sexual assaults and death by act of insurgency. We calculated proportions and described victims by age, mechanism, place and time of injury.

Results  We captured 8,673 women’s fatal injuries due to all cause and intention. Of them, 786 (9%) were intentional injuries by others. The mean age was 29.3 year (±16 SD). The highest proportion was among young women aged 16-45 year (474, 60.3%). Girls under 16 years accounted for 109 (13.9%) of deaths. More than one third of total deaths was belong to year of 2013 that doubled any of previous years’ figures alone. Gun fire was leading mechanism of injury (407. 51.8%) followed by sharp tools injury (142, 18%) and suffocation/ strangulation (82, 10.4%). Home was the commonest place of injury (358, 45.5%).

Conclusions  Trend of women’s death due to assaults is increasing and affecting active age group, mainly by domestic violence. Assault against girls is common. We recommend strengthening of the national programs aimed to empower women and establishing community education channels for prevention targeting both men and women.
**Non-communicable Diseases**

Abstract Code: 2016-FWBD-242

Presenter Name: Dr. Riyadh Al-Rudainy | Country: Iraq

Presenter Email: riyadhalredainy@yahoo.com

Title: Pattern of Arterial Blood Pressure Among Primary School Children, Baghdad, Iraq, 2012

**Background**

High blood pressure (BP) in children and adolescents is a growing health problem that is often overlooked by physicians. Once considered relatively rare, primary hypertension (HT) in children has become increasingly common in association with other cardiovascular risk factors. High BP in children, however, tends to track from childhood into adulthood.

**Purpose**

To measure the prevalence of HT and prehypertension (PreHT) and identify potential risk factors associated with childhood high BP among primary school children, Baghdad, Iraq.

**Methodology**

A cross-sectional study was conducted on a random sample of 620 students aged 10-15 years. Using simple random sampling, ten primary schools in different localities of Baghdad were selected from a list of all primary schools in Baghdad. This is followed by a systematic random sample of students from the list of students in each school. A questionnaire sent to the parents and gathered information on socio-demographic characteristics, dietary habits, daily physical activity, steroids use, family history of obesity and hypertension, and parents’ education and job. Two blood pressure (BP) measurements and measurement of height and weight were done for each student. Blood pressure measurement and stages based on the US National Childhood BP standards.

**Results**

The prevalence of pre-hypertension (Pre-HT) and hypertension (HT) were 4.7% and 3.4%, respectively. While binary analysis revealed the following risk factors: female sex, older age, high BMI-for-age, high daily meal frequency, more sweets and bicarbonate beverages consumption, inactivity, steroid used, and family history of HT. logistic regression analysis revealed the following significant risk factors of elevated BP (pre-HT / HT): female sex (OR: 4.2; P=0.003), older age (OR: 1.6, P=0.026), high BMI-for-age (OR: 3.0; P=0.002) and positive family history of HT (OR: 2.4; P=0.045).

**Conclusions**

Pre-hypertension and hypertension are not rare among primary school children. The potential public health impact of the early onset elevated BP, need to be highlighted.

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**Other**

Abstract Code: 2016-HIV/STI-299

Presenter Name: Ms. Dalal Youssef | Authors: N. Ghosn, W. Nasser, Z. Farah, A. Yaghi, G. Allouch | Country: Lebanon

Presenter Email: dalalyoussef.esu@gmail.com

Title: Alerts Generated by Hospital Based Mortality Surveillance, Lebanon, January-July 2016

**Background**

In Lebanon, available national data lack information on death causes. There is need to identify and monitor causes of death and to detect deaths due to emerging and re-emerging diseases. Since 2009, hospital-based mortality surveillance system was implemented.

**Purpose**

Measure and monitor on weekly basis mortality indicators and detect alerts and outbreak at an early stage.

**Methodology**

The ministry of public health (MOPH) decision number 1/206 (2009) requests both private and public hospitals (n=163) to complete anonymous line listing form for deaths that occurred or received by hospitals. Forms are sent on weekly basis even if no death were recorded. At MOPH, data is coded using International classification of diseases, entered and analyzed using Epidata3. Underlying cause of death is selected. Generated descriptive outputs are screened for alert detection. Alerts are verified and investigated.

**Results**

In Lebanon, from January to July 2016, 6119 deaths were reported. 81% of hospitals participated with weekly completeness of 79%. 74% of deaths occurred in hospital settings. 82% were Lebanese and 10% Syrian. 46% of deaths are aged 75 years and above. The top leading causes of death were: circulatory (23%), neoplasms (20%), respiratory (10%) and infectious diseases (8%). 30 alerts were generated: 14 meningitis, 10 intestinal infections, 3 hepatitis, 1tuberculosis, 2 malaria deaths. After verification, cases were sporadic, no outbreak was confirmed. Specific proper control measures were taken.

**Conclusions**

Hospital-based mortality surveillance is able to detect alerts by providing reliable and timely information on mortality causes and assist decision makers on proper control measures.
Background On May 17th, 2016, the Regional Service of Public Health received the alert of a gastroenteritis episode in a training institute in Rabat (1000 students among whom 700 are hosted full board). Meals are prepared and served by an external company.

Purpose We aimed at confirming the outbreak, identifying the source and implement control measures.

Methodology We conducted a case-control study. We interviewed cases (person having dinner on May 15th in the institute restaurant and presenting, between May 15-18, with diarrhea and one of the following: vomiting, nausea, abdominal pain, headache, fatigue, fever). A control was a person consuming the dinner on May 15th in the same restaurant and without any symptoms the following days. We computed ORs with 95%CIs for all items in the menu. The kitchen was inspected on May 17th and food samples were taken for laboratory tests.

Results We included 118 individuals in the study (64 cases and 54 controls; ratio case-control= 0.85), attending the dinner on May 15th. The outbreak was short in duration with an average incubation period of 6 hours suggesting a punctual common source. Clinical picture was mild for all cases and all of them recovered. The suspected meal (served on May 15th) consisted of semoule au lait, pasta with tomato sauce, hamburger, bread, tomato provinciale, water, yogurt. Diarrhea was associated with the consumption of Hamburger (OR=4; 95%CIs [1.59-10.22]) and of semoule au lait (OR=1.9; 95%CIs [0.78-4.81]). Salmonella was isolated in the Hamburger and E.Coli in both the Hamburger and the semoule au lait.

Conclusions Hamburger and semoule au lait consumptions were the vehicles of this outbreak suggesting that they may have been contaminated during the preparation by an either sick of asymptomatic food handler. We recommended to test the kitchen personnel preparing the dinner on May 15th and reinforce hygiene measures in the kitchen.
Background Biosafety is an important concern in laboratories worldwide especially in developing countries where standard operating procedures (SOPs) are lacking. In Yemen, a limited attention was paid for investigating laboratory staff (LS) understanding and compliance to standard biosafety precautions.

Purpose To assess clinical laboratory staff knowledge and practices on biosafety at Sana’a city.

Methodology A cross-sectional survey was conducted on LS who are involved in handling and processing laboratories’ samples at the main public and private clinical laboratories at Sana’a city. Data collection was done using a semi-structured questionnaire based on available standards. The quality control officer at each laboratory was trained to distribute the questionnaires and ensure proper filling. After reviewing, coding and cleaning the questionnaires, data was entered and analyzed. Scoring system used for knowledge practices where good score is ≥ 75%, fair = 50-74%, and poor <50. P <0.05 was considered statistically significant.

Results Out of 362 respondents participated, only 18% receive the biosafety manual, 39% received biosafety training, 38% has good biosafety knowledge score, and 32% has good practice score. Knowledge and practices found to be significantly influenced by receiving the biosafety manual and training on biosafety. While, knowledge and practice were significantly better among females and postgraduate staff, only knowledge found to be significantly higher among those who has > 10 years of experience. Only practices found to be significantly better in private laboratories.

Conclusions Still there is a poor commitment to biosafety program and policies both in public and private laboratories. Therefore, strengthening biosafety program through guaranteeing decision makers’ commitment and mobilizing necessary resources at all public and private laboratories to increase adhesiveness to SOPs is mandatory.

Outbreak Investigation-VPD

Abstract Code: 2016-EOH-248

Presenter Name: Dr. Fareed Larik | Authors: M. Naveed | Country: Pakistan

Presenter Email: drfareed76@gmail.com

Title: Diphtheria Outbreak Investigation, District Kamber, Sindh Province, Pakistan, 2015

Background On December 18, 2015, local media reported two cases with signs and symptoms of diphtheria in village Mohammad Hassan Chandio, District Kamber. DG Health Sindh deputed a team of FELTP fellows to investigate the suspected outbreak.

Purpose To evaluate the magnitude and determinants of the outbreak and formulate recommendations for control.

Methodology Active case finding was carried out. A case was defined as any child with an upper respiratory tract illness with an adherent membrane of the nose, pharynx, tonsils, or larynx during the period of November 20, 2015 to December 21, 2015, in village Mohammad Hassan Chandio. Information was collected on demographics, date of onset of illness, clinical features and risk factors were assessed. Information was collected on pretested questionnaire. Descriptive statistics were calculated using Epi info 7.

Results A total of 5 suspected diphtheria cases were identified. Case fatality rate was n=4 (80%). Mean age of the cases was 81.6 months (range 60-94 months). All the cases were male and most affected age group was 60-120 months (AR 3.7%). The most frequent signs/symptoms were fever, cough, shortness of breathing, neck edema/bull neck, grayish pseudo-membrane in throat n=5 (100%) followed by difficulty in swallowing n=3 (60%), peripheral and palatal weakness n=3 (60%). The vaccination status of n=4 (80%) case children was unknown.

Conclusions Poor immunization status was the major epidemiological factor leading to the outbreak. Vaccination of the high risk children (<10 years of age) through mop-up campaign and awareness sessions with the community on importance of childhood vaccination was recommended. Immunization activities were carried out. Recommendations for VPD surveillance system strengthening with adequate public health response and increased outreach vaccination activities were also made.
Outbreak Investigation-VPD  
Abstract Code: 2016-EOH-336  
Presenter Name: Dr. Jamshed Khan  |  Author: N. Memon  |  Country: Pakistan  
Presenter Email: dr.jamshedkhanzada@hotmail.com  
Title: Measles Outbreak Investigation in District Hyderabad Pakistan 2016

Background  
On April 5th Media reported three deaths and seven suspected Measles cases from District Hyderabad. In response Directive General Health deputed three member team.

Purpose  
To investigate reported outbreak and recommend control measures.

Methodology  
Descriptive followed by case control study of measles outbreak was conducted in Hyderabad 2016. Matched for age and sex, controls (1:1) were taken. World Health Organization case definition for measles was used to identify cases. A semi structured questionnaire was used to collect data through house to house for active case findings. Socioeconomic, clinical and epidemiological information collected. Biological specimen collection was conducted. Follow up visits were conducted. Data was analyzed by Epi Info 7.1.

Results  
188 measles cases identified, 94% of them were under 15 years of age and 85% unimmunized. The mean age was 32 with range 6-192 months. Attack rate and vaccine efficacy was 5.3% and 70%. Case fatality rate was 9.5%. Significant statistical associations were found between malnourished (OR 8.6; CI 1.6 – 17; p value <0.05) and developing Measles. Pneumonia 65 (34.3%) and diarrhea 69 (36.8%) were the commonest complications. Mortality was significantly associated with younger age (p=0.05), unvaccinated status (p=0.04) and presence of Complications (p=0.0002).

Conclusions  
Vaccine efficacy of 70% points towards need for investigation of vaccine logistics and cold chain system. Moreover, laboratory test confirmed outbreak can occur in low vaccinated population and rapidly spread through a susceptible population. In response to the investigation, measles campaign and mop-up vaccination was carried out in District Hyderabad. Efforts to strengthen routine immunization coverage to more than 95%, using strategies like outreach, door to door services and regular pulse immunization should be adopted. Community awareness sessions, defaulters tracking, enhanced surveillance and measles ‘catch-up’ mass immunization campaign are recommended to interrupt chains of transmission.

Outbreak Investigation-VPD  
Abstract Code: 2016-EOH-253  
Presenter Name: Dr. Shumaila Rasool  |  Author: N. Masood  |  Country: Pakistan  
Presenter Email: drshumailazubair@gmail.com  
Title: Measles Outbreak in Village Mumtaz Ali Jagirani District Sukkur, Pakistan 2016

Background  
On 18th April 2016, 03 deaths were reported due to suspected Measles in Village Mumtaz Ali Jagirani, District Sukkur. A team comprising of FELTP fellows was constituted.

Purpose  
To evaluate the magnitude of outbreak, causes of deaths and recommend control measures.

Methodology  
Health facilities were visited and active case finding was conducted. A pre-tested questionnaire was used for data collection. A Case was defined as any person < 15 years, resident of Union Council Kandhra presenting with fever, maculopapular rash and any of the following symptoms, Conjunctivitis, Cough, and Coryza from 4-28th April 2016. Verbal autopsy was carried out from parents of deceased children. Epi info 7.1 used for descriptive data analysis.

Results  
A total of 7 cases were identified with median age of 36 months. Case fatality was n=3 (43%). Most affected age group was between 12-60 months, of those n=6 (86%) were under 59 months. Overall attack rate was n=7 (39%) and age specific attack rates 0-23 months n=2 (50%), 24-59 months n=4 (44%), 60 and above n=1 (20%). Most frequent clinical features were fever and rash (n=7)100%, conjunctivitis n=5 (83%), coryza n=4 (67%), oral thrush n=4 (67%) and cough n=3 33%. All cases were not immunized against measles due to traditional myths related to vaccination and seeking health care during the measles. Cause of Deaths were due to post measles Pneumonia.

Conclusions  
The most probable cause of the outbreak was poor immunization status. On recommendations immediate mop up vaccination activities commenced from periphery to center in which a total of 491 children were vaccinated (range 6- 120 months) against measles. Vitamin A doses were also administered. Health education sessions were conducted.
Outbreak Investigation-VPD

Abstract Code: 2016-EOH-67
Presenter Name: Dr. Qais Jassar | Country: Yemen
Presenter Email: qais2009@gmail.com
Title: Pertussis Outbreak in Huth District, Amran Governorate, Yemen, March 2016

**Background** Pertussis is an acute highly transmissible infectious disease that is still reported in some countries in the region of Middle East and North Africa. In Yemen, despite vaccine against pertussis is included into the schedule of the routine vaccine, outbreaks reported frequently. Pertussis, is commonly known as whooping cough (100 Day Cough), caused by Bordetella pertussis. Mode of transmission is person to person as airborne disease, and secondary attack rates among susceptible persons have been reported to be 80% or greater. On 28 March 2016, MoPHP notified by Amran governorate Health Office about outbreak of pertussis at Huth district.

**Purpose** We conducted an investigation to verify the outbreak and source of infection.

**Methodology** Active case finding during March 28 – 31 / 2016 was conducted where cases/guards were interviewed using the standard investigation form for pertussis. CDC clinical case definition for pertussis was used. Data were entered into an Excel sheet and analyzed by Excel and Epi Info program.

**Results** Total 63 cases met the clinical case definition, from them 49 cases were from Tho Elyan village, other 14 cases were from Huth hospital. All cases were not vaccinated. One case (4-month old child) died that gives a case fatality rate of 2%. The specific attack rates at The Elyan village, were 86/100 and 16/100 for <5 years and <1 years age groups. Epi curve peak was at weeks 8 and 11, but the curve was started from previous weeks. 63% of cases were males.

**Conclusions** Pertussis outbreak was confirmed at Huth district where the absence of immunization was the main cause of the outbreak. We recommended urgent intervention by antibiotics treatments for cases and high-risk contact children. Routine immunization activities should be strengthened with community health education, and strengthening the surveillance system.

Respiratory Diseases

Abstract Code: 2016-EOH-175
Presenter Name: Dr. Marwa Amin
Authors: S. Refaey, M. Fahim, A. Kandeel, E. Azziz-Baumgartner, D. Luliano, T. Uyeki, S. Lindstrom, C. Todd Davis
Country: Egypt
Presenter Email: dr.marwaamin@yahoo.com
Title: Increased Number of Human Cases of Influenza Virus A (H5N1) Infection, Egypt, 2014-15

**Background** Highly pathogenic avian influenza A (H5N1) has been detected among poultry in >60 countries with sporadic transmission to humans resulting in a large number of deaths. During November 2014 – April 2015, Egypt identified an unprecedented number of persons with H5N1. These illnesses occurred during months when seasonal influenza is typically epidemic in Egypt.

**Purpose** • Identify the potential causes of the increased number of cases • Compare the characteristics of the case-patients for November 2014- April 2015 to those reported in previous years • Compare the characteristics of the survivors to the decedents • Calculate the epidemic threshold for the proportion of H5N1 positive samples.

**Methodology** Passive surveillance data during 2006-2015 were obtained and analyzed, characteristics of case-patients and clusters for Nov2014-Apr2015 were compared to those reported in previous years, survivors to decedents, and the average epidemic period was calculated using the consecutive months having a proportion positive samples exceed the annual median.

**Results** During November 2014 - April 2015, a total of 165 cases with H5N1, 61% women, including 6 clusters & 51 deaths, survivors were younger than decedents with median age 16 (IQR 3-36) vs. 33 (IQR 20-43), 99% reported poultry exposure, 19% to ill poultry & 35% to dead poultry; 58% involved in breeding, 24% slaughtering & 21% preparing poultry. The median percentage of monthly H5N1 detections during November 2014 - April 2015 was statistically similar to that for March 2006-October 2014 (Kruskal Wallis test, p=0.5), similarly was the proportion of clustered cases.

**Conclusions** H5N1 case-patients during 2014-15 had similar characteristics to those of previous seasons and do not suggest increased efficiency of H5N1 transmissions between humans. Further studies are needed to examine the H5N1 virus circulating in Egypt for genomic markers of mammalian adaptation.
Respiratory Diseases

Abstract Code: 2016-EOH-69
Presenter Name: Dr. Abdul Wahhab Jawad  |  Authors: M. Al Karawi, N. AlKazaz  |  Country: Iraq
Presenter Email: alwehab1964@yahoo.com
Title: Trends of Tuberculosis Notification in Al Najaf Al Ashref Province, Iraq 1995-2012

Background Tuberculosis kills approximately 1.7 million persons every year, globally. It’s a leading cause of morbidity and mortality in Iraq.

Purpose To describe trends of tuberculosis case notification in Al Najaf Al Ashref Province, Iraq 1995-2012.

Methodology Retrospective analysis of all TB case reported to TB and chest diseases clinic in Al Najaf Al Ashref province for 1995-2012 was conducted. Definitions: Smear positive TB: presence of TB bacilli in at least one sputum specimen. Smear negative TB: absence of bacilli in three sputum specimens in a patient with radiographic features consistent with TB. Retreatment cases: represent relapse, returnees after default and treatment failure cases. Relapse: patient who developed active disease after completing treatment or cure. Returnees after default: those whose treatment was interrupted for at least two weeks. Treatment failures: having a positive sputum smear after four months of treatment or later.

Results Out of 8962 cases reported 28% were smear positive, 45% were smear negative and 27% were extra pulmonary TB. Of 2517 smear positive cases, 58% were males, 73% among 15-44 years old. About 5.6% of smear positive cases were retreatment cases; those were classified as relapses (73%), defaulters (23 %) and treatment failures (4%). During this period, reported cases of smear positive increased from 96 in 1995 to 114 in 2012, similarly, retreatment cases increased from one to 11.

Conclusions An increase in the number of reported and retreatment cases were noted. TB control interventions and intensified surveillance for drug resistance among retreatment cases are recommended.

Respiratory Diseases

Abstract Code: 2016-EOH-74
Presenter Name: Dr. Nisrine Kasri  |  Country: Morocco
Presenter Email: docteurinisrine@gmail.com
Title: Epidemiological Profile of Tuberculosis in Tetouan province, Morocco, from 2011 to 2015

Background Tuberculosis (TB) is a major challenge for public health in Morocco. Statistics are alarming despite the prevention, diagnosis, and treatment efforts deployed to end the disease. It is noteworthy that nearly 30,000 TB cases are reported annually. In Tetouan where TB incidence is significantly increased, the fight against this disease is a priority for the delegation of the Ministry of Health.

Purpose To describe the epidemiological characteristics of tuberculosis in Tetouan province whose population is currently estimated at 550,374 people.

Methodology This is a retrospective descriptive study including 4794 TB patients, identified between 2011 and 2015 at the Center for the diagnosis of tuberculosis and respiratory diseases (CDTMR) in Tetouan. The data used was collected from the mandatory statements of CDTMR.

Results During this period, the incidence of tuberculosis decreased from 186 new cases per 100,000 people in 2011 to 158 new cases per 100,000 people in 2015 (reduction of 15%). The disease affected young adults between 15 and 44 (64%). The sex ratio was 1.6 for males. Urban areas are the most affected one (85 %). The pulmonary form is predominant (55.5%) with 81.5% of patients coughing up acido-alcoholo-resistant bacilli. Among the extra-pulmonary TB patients, 40% had a bacteriological confirmation against 60 % of patients diagnosed on clinical criteria. Pleural and lymph node forms dominate with 39.2% and 37.7 % respectively. The treatment success rate for people newly diagnosed with TB was 90.1% and mortality rate 2 %. There were 4.6% of loss to follow up and 0.4% treatment failure.

Conclusions TB persists as a public health problem in Tetouan province with an incidence rate that is much greater than the national average. Prevention is based on improving socioeconomic conditions, screening and treatment of patients that are sources of contamination.
**Background** Pakistan is amongst the polio endemic countries. Persistent positive environmental samples for from Northern Sindh and one confirmed case of poliomyelitis reported in February 2015 warranted evaluation of the existing acute flaccid paralysis (AFP) surveillance system.

**Purpose** To identify strengths, weaknesses to formulate recommendations.

**Methodology** This study was carried out in District Sukkur and Khairpur from 4th-26th April 2015. Updated CDC guidelines for evaluating Public Health Surveillance Systems, 2001 were used as a framework for assessing qualitative and quantitative system attributes. All available data and literature was reviewed. Stakeholders were identified and interviewed using a semi-structured questionnaire to collect information. Surveillance data and reports were reviewed, randomly selected active and sentinel sites were visited.

**Results** The system was fairly simple with uniform case definition. Surveillance staff had good knowledge about the system. System was flexible as it was also collecting data on measles and NNT. System was reporting in a timely manner as 71% reports were received on time. Data quality was poor as only 35% of the received reports were complete. Sensitivity of AFP surveillance system was 100% as all expected cases were detected. PPV of confirmed polio cases was 9.09% and 1.85% in District Sukkur and Khairpur respectively. System had good acceptability but the representativeness was average with low involvement of private practitioners and traditional healers. System was stable, running smoothly and no breakdown had been reported yet.

**Conclusions** Regulation and legislation of private sectors would be helpful to collect data from private sector. Online data collection should be initiated to improve data quality. Monitoring and evaluation at district level, refresher training and placement of designated surveillance staff will assist in strengthening the system. It is recommended that all stakeholders should be involved in surveillance network.

**Background** Last case of wild polio virus transmission occurred in Azad Jammu & Kashmir (AJ&K) in October 2000. Since then, AJ&K enjoys polio free status due to its vigilant Acute Flaccid Paralysis (AFP) surveillance system.

**Purpose** This study was conducted to describe the characteristics of patients reported with AFP and to evaluate the performance of the surveillance system during 2011-2015 using indicators recommended by the World Health Organization (WHO).

**Methodology** This retrospective study was conducted at directorate of Expanded Program on Immunization AJ&K during May 2016. Records were reviewed of children aged younger than 15 years with AFP. Data analysis was performed using Microsoft Excel 2007.

**Results** During 2011 - 2015, total 213 AFP cases, aged 01 month to 15 years were reported. 55% were boys. Those below 5 years of age accounted for 62% of cases. A neurological cause was identified in 83% of cases, of which the most common was Guillain-Barré syndrome (63%), followed by transverse myelitis (16%). None of the cases were acute poliomyelitis or polio-compatible. Significant difference in AFP case reporting was found in different seasons and geographic areas; most cases were reported in summer (51%) and from districts having higher temperatures across the year. Majority of cases were reported by public sector health facilities (93%). All except one of the performance indicators consistently met WHO requirements and thus demonstrated the effectiveness of the AFP surveillance system. The AFP reporting rate consistently exceeded 2.0 per 100,000 population below 15 years of age and satisfied WHO requirements, however it is below national average which is 8.8 for the year 2011-15.

**Conclusions** AFP surveillance meeting WHO recommended standards has helped the State of AJ&K in maintaining a polio free status for over fifteen years. High quality AFP surveillance must be sustained to achieve global eradication of polio.
### Surveillance System

**Abstract Code:** 2016-HIV/STI-278  
**Presenter Name:** Dr. Muhammad Hakim  
**Author:** M. Saleem  
**Country:** Pakistan  
**Presenter Email:** saarcuk@yahoo.co.uk  
**Title:** Evaluation of Acute Flaccid Paralysis (AFP) Surveillance System in Khyber Agency, Federally Administered Tribal Areas (FATA), Pakistan during 2015

**Background** FATA has set up AFP surveillance system for immediate case detection, investigation and specimen collection to timely detect wild polio virus. Khyber Agency shares borders with Afghanistan and Peshawar due to which it remains a major reservoir of polio virus and has contributed 76 cases in 2014.

**Purpose** The purpose of this evaluation was to identify the weaknesses and strengths of this system to formulate recommendations for improvement.

**Methodology** CDC’s updated guidelines for evaluation of public health surveillance systems 2001 were followed. Descriptive study was carried out in May 2015 to evaluate the system’s functioning in 2014. Available literature and records were reviewed in Khyber Agency health department, stakeholders were identified, in depth interviews were conducted with stakeholders on a semi structured questionnaire based on system attributes.

**Results** System was found simple, stable and flexible. Representativeness was found average as not covering private sector. Sensitivity was 100% while predictive value positive was 48%. Cases with adequate stools were 81% (n=128). Completeness and timeliness of reports were 87% (n=26). Case investigations within 48 hours of report was 99% (n=156). Stool specimens collected within 14 days of paralysis onset were 81% (n=128). AFP cases with 60 days follow-up were 36% (n=58). Lack of ownership and accountability, poor data management and analysis, inadequate logistics and feedback were identified as major weaknesses. Health care providers lacked basic knowledge regarding early case detection and reporting.

**Conclusions** AFP surveillance system was not achieving as envisioned its objectives due to security compromised situation. The system needs improvement in logistics planning, data management, data quality including completeness and analysis. High sensitivity was due to the broad case definition to avoid missing any case. Regular field and desk reviews are required. Refresher trainings for health practitioners and community involvement were recommended.

### Surveillance System

**Abstract Code:** 2016-HIV/STI-223  
**Presenter Name:** Dr. Amjad Mehmood  
**Author:** Z. Hussain  
**Country:** Pakistan  
**Presenter Email:** amjadmehmoodahd@gmail.com  
**Title:** Evaluation of Acute Respiratory Infection Surveillance System in District Rawalpindi, Punjab, Pakistan July, 2016

**Background** Acute respiratory infection (ARI) is one of the major leading cause of morbidity and mortality among children in the world especially for the developing countries like Pakistan (91,000 annual deaths). High morbidity and mortality associated with ARI signifies to evaluate ARI surveillance system to identify their strengths and weaknesses and to formulate recommendations for improvement.

**Purpose** To identify their strengths and weaknesses and to formulate recommendations for improvement.

**Methodology** A descriptive study (qualitative and quantitative) was conducted from June - July, 2016 using CDC updated guidelines for evaluation of public health surveillance systems 2001. All relevant stakeholders were identified and interviewed using semi structured questionnaires. District health office and Health facilities were visited and records were reviewed.

**Results** Two ARI surveillance systems were identified; DHIS (District Health Information System) and Lady Health Workers Management Information System (LHWs-MIS). Both systems are simple in operation but are not flexible to accommodate new disease or health event. Data quality of both systems is good as quality check mechanism are in place. Timeliness of both systems is poor and are not able to detect any outbreak for a timely response. Sensitivity of DHIS is 59% and LHWs-MIS is 51%. Positive predictive value could not be ascertained as both systems are using syndromic case definition and there is no laboratory component involved. Staff is trained and willingly reporting, both systems are operational in only public sector health facilities and only 30 % population is covered by DHIS. LHWs-MIS is covering only rural population (35%). Both systems were found stable due to government ownership as no breakdown has been reported yet.

**Conclusions** Both system (DHIS and LHWs-MIS) are working in isolation and there is no integration at any level. Both systems can produce better result if they are integrated. Reporting timeliness need to be improved for early detection of outbreak and response.
**Surveillance System**

**Abstract Code:** 2016-OTH-193

**Presenter Name:** Dr. Mumtaz Ali Khan | **Author:** M. Salman | **Country:** Pakistan

**Presenter Email:** drmomi74@hotmail.com

**Title:** Implementation Status of International Health Regulations (IHR) 2004 in Pakistan

**Background** Implementation of the International Health Regulations (IHR 2005) are a commitment of the Government of Pakistan to global. Development of minimum core capacities like detection, identification and response to the public health events are essential.

**Purpose** To compile the information about IHR implementation status and arrangements in Pakistan.

**Methodology** The study was conducted adopting qualitative study design during November-December 2014 at Federal level. Literature, documents and available record were reviewed. The stakeholders were identified and after a formal request, they were engaged in the study. Focus group discussions were carried out with representatives of IHR federal & provincial focal points and Points of Entries (POEs).

**Results** National Institute of Health designated as National Focal Point. To build national surveillance and response capacity, all stakeholders including provincial health departments, POEs authorities, Environmental, Food, Agriculture etc. are accordingly kept engaged to undertake the desired capacity building efforts. Strategic framework for public health laboratories network, Integrated Disease Surveillance & Response and legal framework for surveillance have been developed in 2010. Core Capacity Assessment and Joint External Evaluation conducted in 2013 and 2016 respectively. Coordination units for disease surveillance & response have been established at federal and provincial levels aiming to provide meaningful information for actions. Gross infrastructural and human resource deficiencies exist at provinces and all POEs affecting effective surveillance and response.

**Conclusions** Despite varied progress in certain areas, an adequate legal framework, proper institutional mechanism to detect, identify, report and respond to the public health events is lacking. An adequate legal framework to meet IHR rights and obligations, strengthening proper institutional mechanism for surveillance and response, infrastructural and human resource capacities at POEs, a system at provincial/area levels to fulfil the laboratory detection, surveillance and response, appropriate coordination mechanism for Zoonosis and mechanisms for detecting & responding to chemical, radiological and nuclear emergencies are recommended.

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**Surveillance System**

**Abstract Code:** 2016-HIV/STI-244

**Presenter Name:** Dr. Sandeep Kumar | **Author:** N. Masood | **Country:** Pakistan

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**Title:** Evaluation of Surveillance System of Malnutrition, District Tharparkar, Sindh Province 2015

**Background** Malnutrition is a devastating public health problem in Pakistan. It has very serious consequences like diarrhea and pneumonia that leads to high mortality. Poverty, unawareness, population growth, political instability, loss of food stocks are some of the important reasons causing malnutrition in children. MDG-4 has recognized that improved nutrition is crucial in reducing the under-5-year mortality, especially in the developing countries.

**Purpose** Evaluation was carried out to identify strengths and weaknesses in the malnutrition surveillance system and suggest recommendations for improvement.

**Methodology** A descriptive evaluative study was carried out in which qualitative and quantitative assessment of system attributes was done from February to March 2016 in District Tharparkar, Sindh Province. Data was collected through review of records and interactions with stakeholders who were identified and engaged in the evaluation process; face to face interviews were conducted with the help of semi-structured questionnaire by using Updated CDC Guidelines for Evaluating Public Health Surveillance Systems, 2001.

**Results** System is complex, having no uniform case definition. It was found to be flexible as new health related events could be easily incorporated. Data quality was good with 90% (9/10) of the reports completely filled. The system had excellent timelessness with 100% (6/6) but on monthly basis and average representativeness with less involvement (60%) of private practitioners. Acceptability was excellent with involvement of different government and not government stakeholders. Sensitivity was poor at only 30%. Positive predictive value is not applicable to system due to lack of laboratory component.

**Conclusions** There is need to expedite efforts towards integrating LHWs and private practitioners into the surveillance system to improve representativeness. The timeliness needs to be improved by shifting to an online reporting mechanism. Feedback and supportive supervision should be ensured for data quality assurance. Periodic refresher trainings of health care providers should be organized for sensitization.
**Surveillance System**

Abstract Code: 2016-HIV/STI-267  
Presenter Name: Dr. Waheed Ahmed | Author: T. Ghafoor | Country: Pakistan  
Presenter Email: drlashari@yahoo.com  
Title: Evaluation of Measles Surveillance System in Province Balochistan, Pakistan 2013

**Background** Measles despite a vaccine preventable disease, contributes about 1 million deaths annually throughout the world. In Pakistan large outbreaks of measles occurred in 2012 and 2013 in provinces Sindh and Balochistan. Measles vaccine coverage in Pakistan is 57% and according to EPI coverage survey of measles 2009, in Punjab province 100% children (Age 0-11months) received 1st dose of measles vaccine, while this estimate was 70% in provinces of Sindh and KPK. The lowest coverage of 56% was found in province Balochistan. The main reason for low vaccine coverage are gaps in service delivery. This evaluation study focused to identify the areas for improvement in the current system.

**Purpose** To evaluate the surveillance system of measles in province Balochistan, Pakistan by using CDC’s Updated Guidelines for Evaluating Public Health Surveillance Systems 2001.

**Methodology** Descriptive Study was done in March 2014; CDC’s Updated Guidelines for Evaluating Public Health Surveillance Systems 2001 were followed. Stakeholders were identified, engaged and interviewed using a semi-structured questionnaire. Qualitative and quantitative analysis of system attributes was carried out.

**Results** System was simple and flexible. A standardized case definition existed, which was simple and understandable. Data reporting forms were available and previous data of 2012 and 2013 was collected. Quality assurance system did not exist. Sensitivity was 2.3% and PVP was 74.47%. Reporting time line and representativeness were poor as only 16 out of 32 districts were reporting weekly. Private sector was not reporting to the system.

**Conclusions** The reporting system should be improved to detect outbreaks of Measles. A quality assurance mechanism should be put in place. There should be increased collaboration with private sector to enhance representativeness.

**Vaccine Preventable Diseases**

Abstract Code: 2016-HIV/STI-217  
Presenter Name: Dr. Akbar Ghanghro | Authors: L. Akbar, S. Sahtia, A. Sarwar, S. Sahito | Country: Pakistan  
Presenter Email: drakbaralig@yahoo.com  
Title: Alert of Acute Flaccid Paralysis Case, An Effort to track the Polio Eradication Initiative Gaps in District Shikarpur, Pakistan 2016

**Background** On 8th March 2016, Polio Emergency Response Unit Sukkur received a call about AFP case in security compromised areas of taluka Khanpur district Shikarpur. Four members team was constituted to verify the severity of case.

**Purpose** A study was conducted to find the operational gaps in Polio eradication initiatives (PEI) and recommend timely appropriate measures.

**Methodology** An assessment (desk review and field assessment) of AFP and PEI conducted from 9th to 11th March 2016. The field review was included on visit of the reported case for verification and action, community informants, Routine Immunization (RI) clustering and assessments of PEI and SIAs record at District Polio Control Room (DPCR).

**Results** Alert of 60 months age AFP case, clinically declared with typical sign and symptoms of Poliomyelitis at village Ajner Khanani Taluka Khanpur. The child was zero immunized for OPV since last 02 supplementary immunization activities neither he got any single RI shot in his life. Last four post campaign monitoring surveys shows 04 (80%) of 05 LQAS lots failed while in Market Surveys 5% (n=53) children were not finger marked of them 38% (n=20) children declared with no team. From a target of 1, 88,270 (2013-2016) only 18% (n=17) good AFP cases were detected of them 14 (82%) were investigated within seven days. 03 house hold clusters for RI taken for below 23 months showed zero immunization coverage. During SIAs no evidences seen for house to house OPV administrations nor maintained log sheets of not available children.

**Conclusions** Poor performance indicators identified in PEI (RI, SIAs, AFP surveillance), indicating the risk of Polio virus circulation in security compromised areas. DPCR was immediate directed for urgent epidemiological investigation of case and response, immediate review of AFP surveillance and implementation of National Emergency Action Plan.
**Background** Crimean Congo hemorrhagic fever (CCHF) is a severe hemorrhagic fever with case fatality Rate up to 50%. It is a tick-borne virus belonging to family Bunyaviridae, genus Norovirus. It is transmitted to humans through bite of infected ticks or by direct contact with viremic animals or humans. CCHF is endemic in Africa, Balkans, Middle East and Asian countries. It’s also prevalent in Pakistan with periodic outbreaks, first case reported in 1976. Majority of cases are reported from Balochistan province each year also including cases from neighboring country Afghanistan. These cases are admitted and treated at CCHF isolation ward at Fatima Jinnah Chest and General hospital Quetta.

**Purpose** To investigate cases, assess risk factors and recommend control measures.

**Methodology** Hospital visited and reviewed records along with personal interviews with patients, doctors, nurses and Medical Superintendent of hospital. Active contact tracing was undertaken among family, friends and staff of Isolation ward.

**Results** 62 suspected cases were reported between 1st Jan – 30th August 2016 at isolation ward of Fatima Jinnah hospital Quetta. 76%(n=47) cases were from various districts of Baluchistan and 24%(n=15) from Qandahar Afghanistan. 73%(n=45) cases were male and 27%(n=17) females. Mean age 32 years with range 7-88 years. PCR of 89%(n=55) cases was done and 47%(n=26) were CCHF Positive. 9 deaths reported with CFR 14.5% and all CCHF PCR positive. All cases had history of animal contact (slaughtering, meat and waste handling). All Contacts traced and found symptom less after following for 14-days.

**Conclusions** Animal contact is most probable cause of outbreak. Provincial CCHF focal point and Response team was formulated by provincial health department on our recommendations. Close coordination with livestock department to disinfect animals in province. Sessions on animal handling and awareness regarding CCHF at each district level planned and started. Provision of PPE and other latest equipment at Isolation ward urgently.

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**Background** CCHF is a serious public health concern. First case reported in 1976, followed by outbreaks from almost all areas of the country. Three suspected patient was reported from a tertiary care hospital Islamabad on 20th May 2014. A team was deputed to investigate the outbreak and advise preventive measures.

**Purpose** An outbreak investigation was done to identify the source and recommend control measures.

**Methodology** Reviewed hospital record, carried field investigations and interviewed physician, nursing staff and attendants. Active case finding and contact tracing was undertaken. Information collected through pretested questionnaire and cases categorized on standard case definitions. Suspected cases were confirmed by RT PCR

**Results** 1st case, MK, butcher, was shifted from Afghanistan with high grade fever, hemorrhagic spots on legs, gums bleeding, epistaxis, bloody diarrhea and body aches, expired on 6th day of admission. 2nd case, MA, from Islamabad, presented with high grade fever, body aches and dysurea. On 3rd day of illness, he developed hemorrhagic spots on legs and other parts. On 5th day, he developed rectal, gums, nostrils bleeding and hemoptysis. On 6th day, he died. 3rd case, BN, 24yrs old, from Rawalpindi, presented with high grade fever and vomiting. On 3rd day got gums bleeding and epistaxis and was admitted and expired on 5th day. During active case finding, a suspected case, SA, Age 35yrs, close contact of case-2, was found febrile, diagnosed as CCHF case, timely started treatment and survived. Close contacts (13 household and 10 hospital staff) enlisted and followed for 14 days. All remained asymptomatic.

**Conclusions** Staff scared and Patients were not properly handled. Fatality was high due to late stage presentation. Livestock department found least concerned. The livestock department should take necessary measures to eliminate ticks. Timely identification of cases can prevent unprotected exposure and ensure early treatment Nursing staff must be trained for preventive measures.
Zoonotic and Vector Borne Diseases

Abstract Code: 2016-EOH-127
Presenter Name: Dr. Ahmed Ehsan | Author: S. Abid | Country: Pakistan
Presenter Email: ehsanlarik@gmail.com
Title: Epidemiological Characteristics of Human Rabies at Bolan Medical College Teaching Hospital Quetta Balochistan 2015

Background Rabies is a fatal zoonotic disease transmitted to human by bite or scratch or licks on broken skin or mucous membrane of infected animal, most often by a dog.

Purpose To describe epidemiological characteristics of human rabies at Bolan Medical College Teaching Hospital Quetta 2015.

Methodology Descriptive epidemiology and analysis of records of rabies cases reported and admitted at Bolan Medical College Teaching Hospital Quetta (BMCTHQ) from January-December 2015.

Results 378 rabies cases were admitted, 236 (62.4%) cases were from Quetta Zone and rest 142 (37.6%) cases came from periphery of Balochistan. Mean age of cases was 21 years with range of 7-64 years. Most affected age group was under 15 years (57%). Male (69.5%) and rural people (84.6%) accounted for main bulk of the cases. 55.4 % cases had WHO category I wound. Incubation period of majority cases was between 16-90 days (74.6%). Hydrophobia was present in 32(8.5%) cases. Most bites were from dog (91%). Others animals were cat (6%), donkeys (2%) others (1%). Most cases (241/378=63.75%) were not vaccinated. 45% cases did not take wound care. Among 137 cases who received vaccines, only 84 (61.4%) cases received TCV and remaining 53(38.6%) received NTV. None of 378 cases were treated with RIG. No vaccination of Pet and stray dogs in Pakistan in place. Case fatality was 1.85 %.

Conclusions Rabies is a major health problem in Pakistan. Data indicates that epidemiological characteristics of disease are not much different from other studies and have not changed much over decades. Hence, there are need to educate community and health workers about importance of immediate and adequate post-exposure treatment, to start effective control and vaccination programme for dog and to make availability of TCV as well as RIG. W.H.O. guidelines for wound management must be followed for treatment.

Zoonotic and Vector Borne Diseases

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Title: First Dengue Outbreak Among Seiyun District’s Residents, Hadramout Al Wadi, Yemen, May 2016

Background Dengue fever (DF) is endemic in Yemen where many governorates are at rest risk of outbreaks however, no previous outbreaks reported among Seiyun residents. On May 2016, Seiyun surveillance coordinator at Hadramout Al Wadi reported an increased number of fever cases that was diagnosed as suspected DF where Rapid Response Team was sent to investigate.

Purpose To describe the outbreak and confirm its cause and source.

Methodology We adopted the WHO case definition where suspected DF cases are cases with acute febrile illness and two or more of the following sign/symptoms: severe headache, retro-orbital pain, muscle pain, bone pain, joint pain, rash and malaria testing was negative. Confirmed cases are cases met suspected cases definition with positive IgM by Elisa. Face-to-face interview was conducted to collect data on socio-demographics, history of illness, signs and symptoms. Laboratory samples collected for confirmation.

Results 101 cases met the case definition. Cases started at week 19, peak of epi curve was at week 25. Attack rate was 5.7 /10,000 with no fatalities. Males to female ratio was 3:1, 58% of cases were among 21-40 years age group and 31% of cases reported from Al Qaren sub district. 43 blood sample were collected for lab confirmation using Elisa where 22 cases (51%) were IgM positive. Entomological survey shows abundant presence of vector (Aedes Aygptic), with house index of 40% (10/25), container index of 43% (19/44) and adult index 56% (10/25).

Conclusions This is first confirmed outbreak among residents of Seiyun district. Launching dengue surveillance, vector surveys, and epidemiologic studies to identify risk factors with awareness raising campaigns are important to provide key information for preventing more spread among resident population.
Background Malaria is a public health problem in Yemen where 65% of people are at some risk to contract it. After the emergence of chloroquine resistance in Yemen, the national anti-malaria policy has been changed in 2009 to artemisinin combination therapy (ACT).

Purpose Assess physicians’ knowledge and practices regarding the recent anti-malaria case management policy recommended by the National Malaria Control Program to ensure that new treatment is effectively utilized and to prevent drug resistant development.

Methodology A Survey was conducted in Aden during March-April 2014. Two hundreds and ten physicians involved in managing malaria were recruited from selected public and private hospitals. A self-administered semi-structured questionnaire was used to obtain information on socio-demographic characteristics of the study participants, their knowledge about anti-malaria national policy, diagnosis and treatment practices. Descriptive tests were used as appropriate. Bivariate analysis was set at significance level of P<0.05.

Results Sixty percent didn’t hear about the national policy; 23.8% had the guideline and only 11% received training on it. The first-line treatment for uncomplicated malaria was identified correctly: 10.1% for adult, 5.7% for children, and 26% for first pregnancy trimester whereas none of them mentioned the correct first-line drug for second and third pregnancy trimesters. The first-line treatment for complicated malaria was identified by; 85%, 66.8%, 49% and 6.3% to treat adult, children, first trimester and the second and third trimester of pregnancy respectively. The majority (91.4%) diagnose malaria based on symptoms and signs. Knowledge and practices were not significantly different between specialists and general practitioners.

Conclusions This study reveals poor knowledge among physicians regarding national anti-malaria policy and guideline, especially regarding treatment of simple malaria of the vulnerable groups. Involvement of all stakeholders during adoption and implementation of new national policies, providing training and refresher courses is recommended to ensure correct and effective use of current policy.
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