CAN INFORMATICS
TRANSFORM PUBLIC HEALTH
IN SAUDI ARABIA

By:
Dr Ali Al Shehri | MD, MPhil, FRCGP, ACHE, MFPH
Associate Dean, Academic and Student Affairs
President, Saudi Association of Public Health (SAPH)

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WHY PUBLIC HEALTH?

Increase life expectancy *(40s to 70s & 80s)*

Decrease/prevent diseases *(eradication of lethal disease)*

Enhance cost-effectiveness of healthcare *(Cuba = USA!!)*
ESSENTIAL FUNCTIONS OF PUBLIC HEALTH

- Monitor health status to identify community health problems.
- Diagnose and investigate health problems and health hazards in the community.
ESSENTIAL FUNCTIONS OF PUBLIC HEALTH

- Inform, educate and empower people about health issues.
- Mobilize community partnerships to identify and solve health problems.
ESSENTIAL FUNCTIONS OF PUBLIC HEALTH

- Develop policies and plans that support individual and community health efforts.
- Enforce laws and regulations that protect health and ensure safety.
- Link people to needed personal health services and ensure the provision of health care when otherwise unavailable.
ESSENTIAL FUNCTIONS OF PUBLIC HEALTH

- Assure a competent public health and personal healthcare workforce.
- Evaluate effectiveness, accessibility and quality of personal and population-based health services.
- Research for new insights and innovative solutions to health problems.
PUBLIC HEALTH ACHIEVEMENTS

U.S. 2001-2010

- Vaccine-Preventable Diseases
- Prevention and Control of Infectious Diseases
- Tobacco Control
- Maternal and Infant Health
- Motor Vehicle Safety
PUBLIC HEALTH ACHIEVEMENTS
U.S. 2001-2010

- Cardiovascular Disease Prevention
- Occupational Safety
- Cancer Prevention
- Childhood Lead Poisoning Prevention
- Public Health Preparedness and Response
PUBLIC HEALTH FACES MAJOR CHALLENGES IN THE 21ST CENTURY

- Emerging diseases, e.g. Ebola
- Non communicable diseases
- Bioterrorism and chemical poisoning
- Globalization and easy travels: Global Outbreak Alert and Response Network.
Public health has to enhance its functions in this information age by utilizing the information and communication technology (ICT)

- Information → Decision
- The better the information the better the decision
PUBLIC HEALTH INFORMATICS

- Public Health Informatics provides fast, reliable and valid information to make decisions.
- Sound information about public health leads to sound decisions for public health.
- Sound information is essential for Health care management, planning and policy.
PUBLIC HEALTH INFORMATICS

- Public Health Informatics deals with electronic resources and processes of:
  - Collecting
  - Keeping
  - Retrieving
  - Disseminating and utilizing information in public health practice
  - Research and learning.
CDCs NATIONAL CENTER FOR PUBLIC HEALTH INFORMATICS (NCPHI)

Provides leadership in the application of information and computer science and technology to public health practice, research and learning.
Electronic health record support of public health functions

Use of health care, population and other public health data in supporting public health systems and analyses

Basic capabilities that support public health practice such as statistical and health surveillance

Public Health decision support
PUBLIC HEALTH INFORMATICS

“the systematic application of information and computer science and technology to public health practice, research and learning”

ACTIVITIES MAY INCLUDE:

- Collection and storage of vital statistics
- Collection and reporting of communicable diseases
- Disease surveillance
- Display disease statistics and trends
- Immunization
- Hospital statistics
Large country
2,250 sq m
GDP 2013
746 Billion US$
Population:
1950=3M
2011=27M
2015=30M (Mostly young)
Life Expectancy
73.7
Vaccine coverage
Almost 99%

Eradication of polio and many other communicable diseases

But ...
More chronic diseases (*Obesity, DM, IHD*)
- Road traffic accident is a major problem
- Environmental and Occupational Safety Issues
- Multiple providers of healthcare: cost-effectiveness?
- Mass Gathering Medicine
- Others
BRIEF HISTORY AND DEVELOPMENT OF HEALTHCARE IN SAUDI ARABIA (MoH)

1 1925 Department of Health
2 Later General Directorate of Health and Aid
3 1950 Ministry of Health (MoH) was established
4 1978 KSA signed Alm-Ata Declaration as a member of WHO: Health for All through PHC as preventive, curative and rehabilitative approach
BRIEF HISTORY AND DEVELOPMENT OF HEALTHCARE IN SAUDI ARABIA (MoH)

- **1981**: Directorate of PHC at MoH
- **2002**: Establishment of Council of Health Services
- **2009**: National Evaluation Committee reviewed PHC and made recommendations
- **2010**: Deputy minister PH
- **Now more than 2,037 PHCCs and 244 Hospitals under MoH**
## CURRENT SYSTEMS

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<tr>
<th>Services provided through</th>
<th>Governmental and Private</th>
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<tbody>
<tr>
<td><strong>Primary, Secondary and Tertiary care</strong></td>
<td>Multiple providers and sectors with multiple levels and tiers of services</td>
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<tr>
<td>Accounts for almost <strong>60%</strong> of services kingdom-wide.</td>
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Multiple providers with little connection

- Ministry of Health
- University Hospitals
- National Guard Health Affairs
- School Health Units
- Security Forces Medical Services
- Health Services in the Royal Commission for Jubail and Yanbua
- Armed Forces Medical Services
- Red Crescent
- ARAMCO Health Services
- Others
Percentage of Service Provision

- MoH - 60%
- Other Government Sector - 20%
- Private - 20%
Creation of Council of Health Services as a coordinating body for all Healthcare providers.
Development in ITC:

*eGovernment:* many initiatives and projects to transform:
- **G2C:** Government-to-citizen
- **G2B:** Government-to-Business
- **G2G:** Government-to-Government
- **G2E:** Government-to-Employee
- **IEE:** Internal Efficiency and Effectiveness
Development in ITC:

**eLearning and Education**

- National eLearning Center
- SEU: Saudi Electronic University
- Many graduate programs in information management and health informatics
- MoHE programs, projects and units
- Thousands of scholarship in HI and public health-related specialties
A number of electronic surveillance systems:

- GPHIP has worked with the Kingdom of Saudi Arabia, Ministry of Health (MoH) to strengthen its surveillance for mass gatherings (*i.e.*, Umrah, Ramadan, Hajj).

- Mobile-based Notifiable Electronics Disease Surveillance System (*MNDESS*), to create instant daily reports which allowed MoH officials to respond promptly to early signs of possible outbreaks.
A number of electronic surveillance systems:

- The Saudi Arabia National Guard Health Authority (SANG-HA); CDC/NGHA Integrated Electronic Disease Surveillance System (NG-IEDSS) pulls together data from three major disease reporting systems.

- Healthcare Associated Infections (HAI), notifiable diseases, and environmental and occupational disorders.
Many initiatives for Health Informatics but ?coordination and ?Integration.
National Public Health Informatics may play a major role in optimizing current public health functions and transform it on the long run.
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<th>Challenges</th>
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<td>Multiple providers</td>
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<tr>
<td>Multiple systems</td>
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<tr>
<td>Trained staff</td>
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Where are we now?
CAN INFORMATICS TRANSFORM PUBLIC HEALTH IN SAUDI ARABIA

THANK YOU!

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