



# CURRENT STATE AND FUTURE OPPORTUNITIES FOR OPTIMIZATION OF HEALTH INFORMATION SYSTEMS IN QATAR

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ورشة عمل بشأن تحديث الإحصاءات الرسمية في دولة قطر  
Workshop on Modernization of Official Statistics in Qatar

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# Health Information System (HIS)

## Definitions

### ***Information System***

*Provide specific information support to the decision- making process at each level of an organization (Winter, A. 2010)*

### ***Health Information System (HIS)***

*Health information system refers to any system that captures, stores, manages or transmits information related to the health of individuals or the activities of organizations that work within the health sector*



# Components of HIS

## 1. Health Information Systems Resources

legislative, regulatory and planning frameworks

## 2. Indicators (Health)

determinants of health, demographic profile

## 3. Data Sources

Surveys, registries, vital statistics etc.

## 4. Data Management

data handling: collection, storage, quality-assurance, compilation and analysis

## 5. Information Products

Data use as information and evidence

## 6. Dissemination and Use

readily accessible to decision-makers and stakeholders

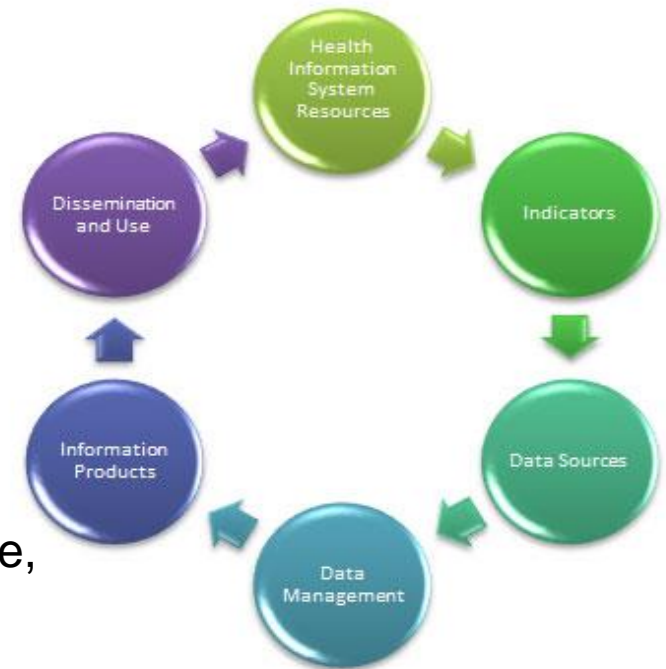


Figure 1 The six components of a Health Information System



# Health Information System (HIS)

## Importance of effective HIS

*Why do we need accurate and up to date data in health?*

- **Accurate, reliable and timely** information is vital to effective decision-making
- **Accurate, timely and accessible** health care data play a vital role in the planning, development and maintenance of health care services
- **Quality improvement and the timely dissemination of data** are essential for optimal health and appropriate resource allocation
- **Essential for evidence based program** implementation or program modification



# Health Information System (HIS)

## Importance of an effective HIS

*Why do we need accurate and up to date data in health?*

### ***Produces information needed by***

- *Patients, communities, service providers, program managers, policy-makers, providers of funds, global agencies and organizations*

### ***Information used for***

- *Better management, assess coverage and quality of services; costs and expenditures*
- *Detect and control emerging and endemic health problems*
- *Monitor progress towards health goals; and promote equity*



# Health Information in Qatar: Data Sources

- **National Health Surveys**
- **National Surveillance System**
- **Vital Statistics**
- **Health Intelligence and Information**
- **National Disease Registry**, such as Diabetes & Cancer
- **E-Health**
- **Other source of data**, such as Health Insurance, Injuries data, Road traffic accidents, health economics data etc.



# Health Information System in Qatar

## Health Indicators & Demographic profile

- Current estimated population as of September 2017 is about 2.7 million
- Population has been increasing over the years
- A relatively stable population of Qatari citizens



# Health Information System in Qatar

## Health Indicators & Demographic profile

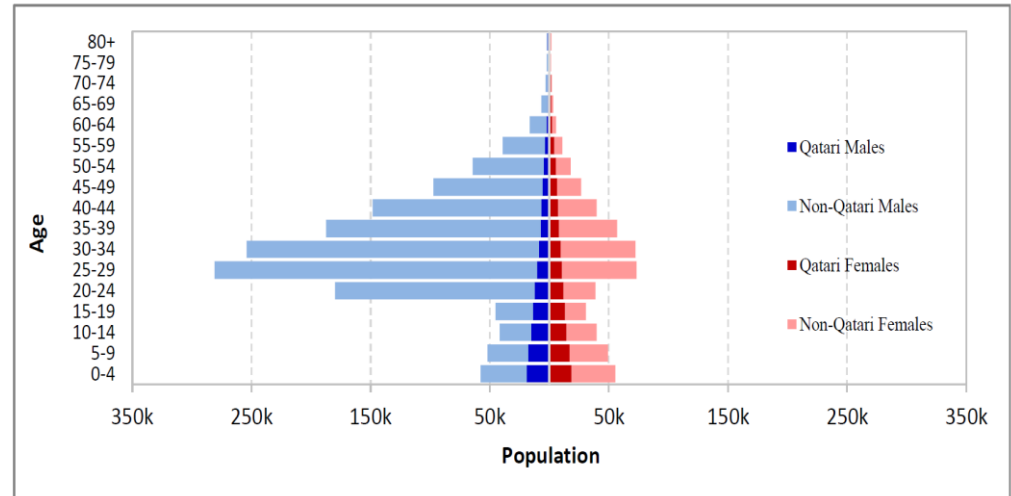
- High population of males due to increased number of male expatriates working in the country
- Life expectancy at birth of Qatari nationals **79.9** years for males, **82.4** years for females
- Access to sanitation and clean water is 100%
- Literacy rate among adults is ~98%



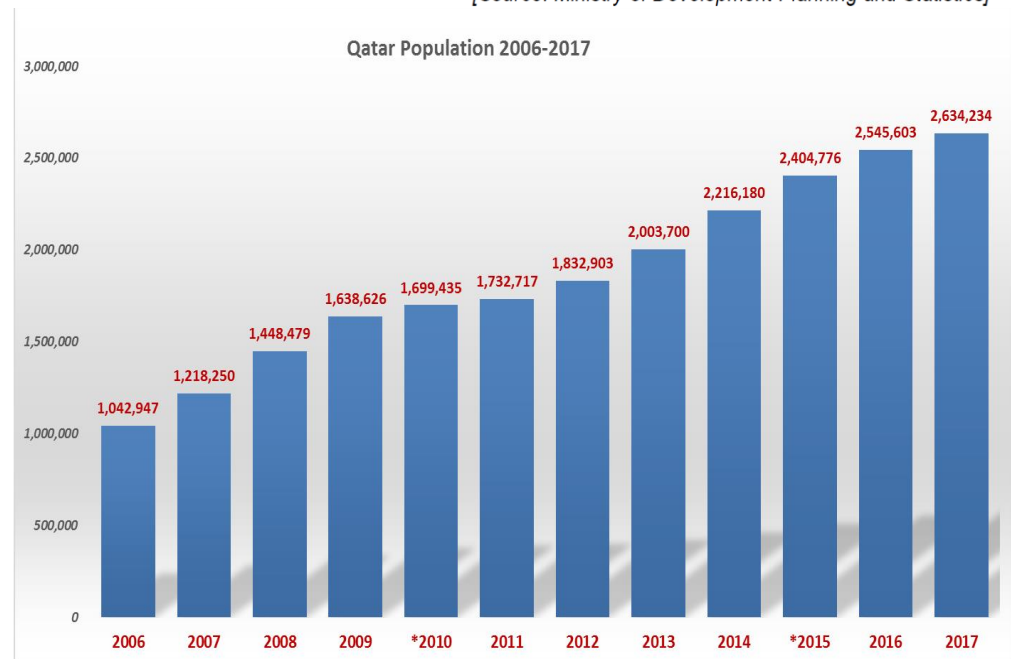


# Population in Qatar

***“Its important to adopt and implement an accurate and real time health information system to track and record population health situation from a rapidly increasing and characteristically unique population in Qatar “***



[Source: Ministry of Development Planning and Statistics]

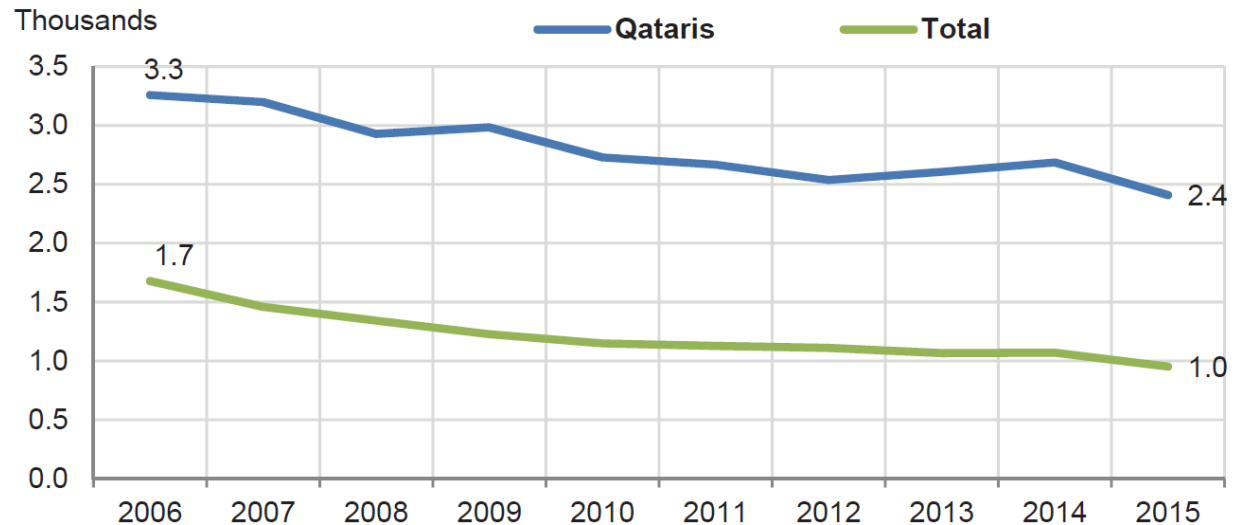




# Health Indicators: Mortality

- Overall mortality rate in Qatar is low with decreasing rates over the years
- The number of deaths reached 2,317 in 2015, compared to 2,366 deaths in 2014, which means that the number of deaths fell by 2.1% in 2015
- A decrease in CDR of ~27% among Qataris and ~43% among all population was observed between 2006 & 2015
- Age-standardized mortality (4.12 per 1,000) rates in 2013, ranking Qatar among the top of high-income countries in the region as well as around the world

**Crude Death Rate (CDR) per 1000 Population 2006-2015**



***“Mortality data is well maintained and comprehensive in Qatar”***

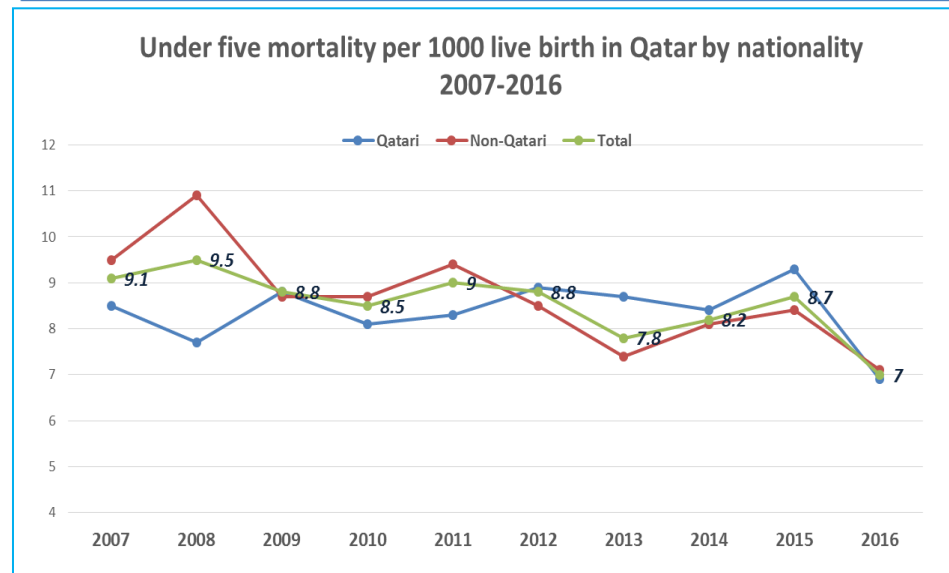
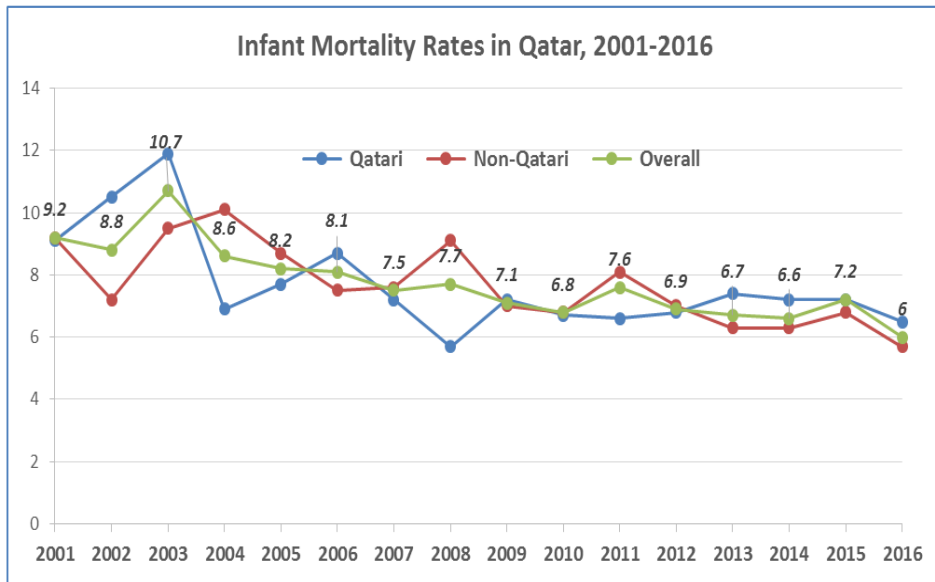


# Mortality Rates (Infants and Children)

Infant mortality rates had a 20% decline from 2004 to 2014 and a decline of ~34% from 2001 to 2016

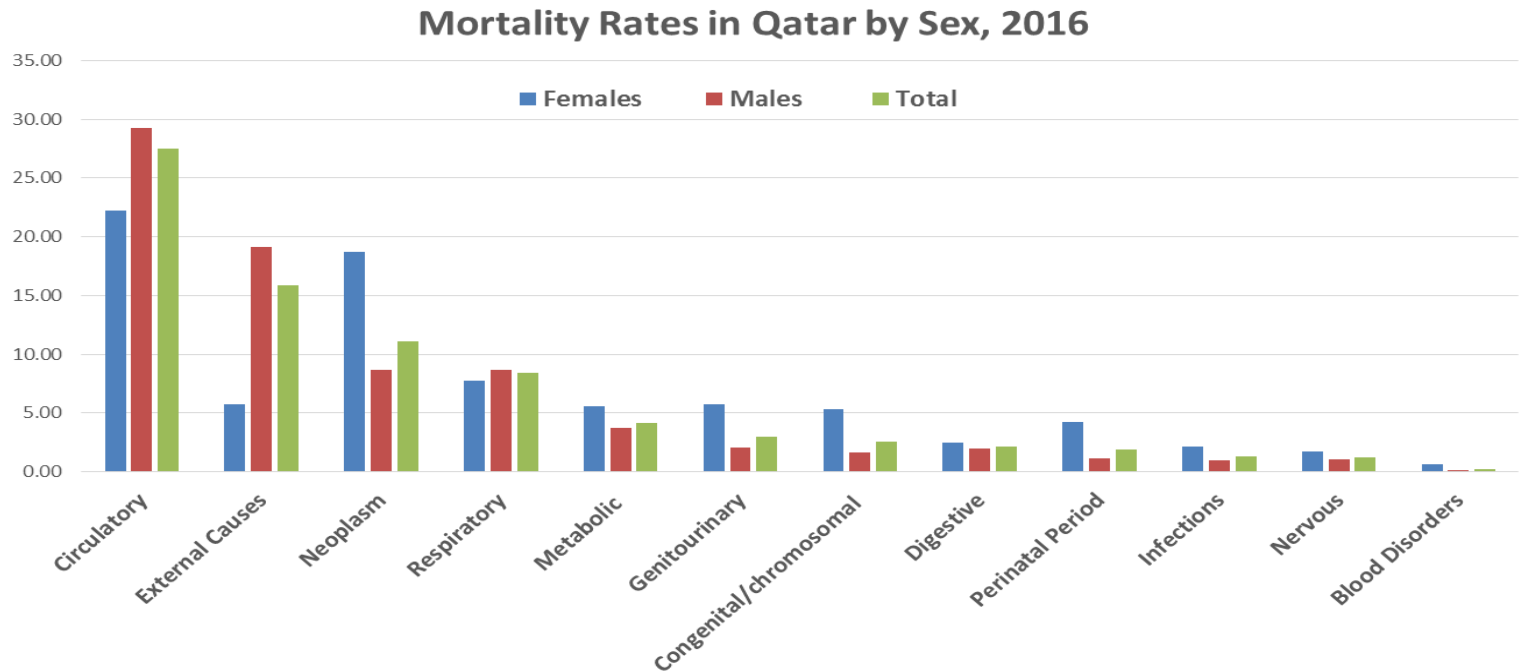
Congenital malformations (all types) (34.5%), Low Birth Weight (27%) and respiratory distress of newborn (2.8%) were the leading IM causes from 2004 to 2014

A decline of 23% in child mortality (under 5 years old mortality rates per 1000 live births) has been seen in Qatar from 2007 to 2016





# Mortality Rates (overall)



***“Proper ICD coding is carried out to determine gender and cause specific mortality rates in Qatar”***



# Health Indicators: Risk Factors Data

## Social Determinants and Behavioral Factors

### National STEPwise Survey 2012 *(Prevalence among participants)*

- Obesity = **41.4%**
- Overweight/Obese= **70.1%**
- Hypertension= **33%**
- Diabetes= **16.7%**
- Raised blood cholesterol= **22%**
- Less than 5 servings of fruit and/or vegetables consumption (average per day)= **91%**
- Low levels of physical activity= **45.9%**
- Current smokers = **16.4%**
- Percentage with three or more of the above risk factors, aged 18 to 64 years = **50.7%**



# Health Indicators: Risk Factors Data

## Social Determinants and Behavioral Factors

### Global Adult Tobacco Survey (GATS) -15 years or older

- **12.6% currently** (10.9% Qatari, 13.5% non-Qatari) use tobacco (smoked or smokeless)
- 12.1% currently smoked tobacco (men 20.2% and women 3.1%)
- 10% of adults were current cigarette smokers
- 3.4% shisha smokers
- 0.7% current users of smokeless tobacco products



# Health Indicators: Risk Factors Data

## Social Determinants and Behavioral Factors

### Global Youth Tobacco Survey (GYTS) 13-15 years old

- 20.7% of students had ever smoked cigarettes (Boys = 29.9%, Girls = 15.5%)
- **17.9% currently** use any tobacco product (Boys = 25.2%, Girls = 13.1%)
- 6.5% currently smoke cigarettes (Boys = 13.4%, Girls = 2.3%)
- 15.6% currently use other tobacco products (Boys = 19.4%, Girls = 12.6%)



# Communicable Diseases & Immunization

- Qatar's Health Protection and Communicable Disease Control (HP&CDC) coordinates the response for over **67 notifiable conditions**
- Qatar's *Expanded Program on Immunization or EPI* was established in 1979, and has improved dramatically in terms of coverage and now covers: Tetanus, Diphtheria, Pertussis, Polio, *Haemophilus influenzae* type b (Hib), Measles, Mumps, Rubella, Hepatitis B, Hepatitis A, Pneumococcus, Varicella, Tuberculosis, Rotavirus, Influenza and Meningococcus
- Impressive vaccination coverage has been observed in Qatar. almost reaching to 100% in 2016





## Qatar Health Core Indicators: Health Finance Data

Health financing	Value	Year
General government expenditure on health (GGHE) as of % of total government expenditure	7.6	2014
Out-of-pocket expenditure(OOP) on health as % of total health expenditure (THE)	4.9	2014
Per capita total expenditure on health at exchange rate (US\$)	2,581	2014

- General government expenditure on health in Qatar is better than EU-28 countries (7.6% in Qatar vs 7.2% in EU)
- Out-of-pocket expenditure(OOP) on health as % of total health expenditure (THE) is better than USA i.e. 4.9 in Qatar compared to US 12%



# Qatar Health Core Indicators

Health Work Force (per 10,000 population)	Value	Year
Physicians	25	2014
Nurses	58	2014
Dentists	7	2014
Pharmacists	9	2014
Density of recent graduates of registered health profession educational institutions (per 10,000)		
Physicians	1.5	2014
Nurses	2	2014

**Health workforce situation is better than 2006 MDG population threshold of 22.8/10,000**

Health Work Force (numbers*)	2016	Q3-2017
Physicians	6199	6546
Dentists	1615	1676
Nurses	15422	17017
Pharmacists and Assistant Pharmacists	2219	2405
Allied Health Professionals	7451	8501
Non-Medical Workforce	11218	11353

\*These numbers do not include the MOD and MOI staff



# Qatar Health Core Indicators

- Impressive recording of vital statistics data
- Capability of coding of mortality data using ICD system
- Capability of surveillance and tracking treatment success rates for communicable diseases

Health information system	Value	Year
Percentage of births registered	100	2016
Percentage of causes of deaths recorded	97	2016
Service quality and safety		
TB treatment success rate	74	2015



# Recommendations

- Development of multi-sectoral connections, stakeholder collaboration and agreements
- Strengthening strategies to develop and implement electronic data transfer and sharing systems (e-health etc.)



# Recommendations

- Staff training and workforce development in health information system area
- Development of public health data repository system
- Implementing enhanced surveillance approaches to obtain real time, latest and rich data from several sources



# Sustainable Development Goals and NHS

*Qatar's National Health Strategy 2017 – 2022 aligns with the SDG goal 3 i.e. Ensure healthy lives and promote well-being for all at all ages e.g.*

*It states and emphasizes on integrated health system that will enable Qatar to have an effective health information system. Some key features of NHS are:*



# Sustainable Development Goals and NHS

1. Promoting the healthcare system governance and building a more balanced system through increasing the opportunities of access to primary healthcare and to community centers
2. The integration between public and private health institutions along with building an active workforce and further training health workers
3. Early detection of diseases
4. Strengthening and enhancing emergency and urgent care services e.g. the first socio-psychological healthcare service center opened in November 2014
5. Healthy kids programs, workplace wellness programs, smoking-cessation clinics, etc.



# Sustainable Development Goals and NHS

**3.1** By 2030, reduce the global maternal mortality ratio to less than 70 per 100 000 live births. **( In Qatar, No Maternal death reported in 2016)**

**3.2** By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births. **(Qatar's IMR in 2016 = 6 and under 5 mortality = 7)**

**3.3** By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases. **(No outbreaks reported recently)**





# Sustainable Development Goals and NHS

**3.4** By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being. **(continue examining data in alignment to the implemented programs)**

**3.5** Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol. **(very low reports of mortality related to this, further examination of data continues)**

**3.6** By 2020, halve the number of global deaths and injuries from road traffic accidents. **[Decreasing death rates from 26/100,000 population in 2006 to less than 10/100,000 in 2013, 2014 which is less than the global rate (12/100000)].**



# Sustainable Development Goals and NHS

**3.7** By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.

**(Qatar is strengthening its universal health coverage as an integral part of NHS)**

**3.8** Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. **(Qatar is strengthening its universal health coverage as an integral part of NHS)**

**3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination. **(further examination of data continues)**



# Sustainable Development Goals and NHS

- The health indicators and data collected is essential for determination of health situation in Qatar as per accordance to the SDG goals
- The NHS related program expansion has been and will be beneficial in further strengthening of the health information systems in Qatar



# Sustainable Development Goals and NHS

- NHS alignment with SDG will not only result in comprehensive understanding of the health issues in Qatar but also able to provide high quality data
- The data obtained thru. these strategies could be used for developing key WHO based health indicators and evidence based strategies



# Conclusions

- Better and stronger HIS can resolved inadequacies in health systems
- Awareness of the importance and components of a HIS is a prerequisite to all those involved with its activities
- Self -assessment of HIS is necessary for its strengthening and use for better decisions and better health
- Development of e-health system will play a critical role in strengthening of health information systems in Qatar



Thank you