World Health Organization

Global consultation to optimize Routine Health Information Systems (RHIS) to effectively deliver Universal Health Coverage (UHC) and improve Primary Health Care (PHC) in countries

Session 1 - Countries at the center: Models to align and integrate RHIS in Primary Care Settings

Facilitator: Prof. Kristin Braa, University of Oslo

Session objective and contents

Objectives: Countries from different regions to share their experiences of RHIS strengthening and discuss key issues and lessons learnt

Contents

1. Iranian PHC information systems	- Ardeshir Khosravi - Head of the HIS at Iranian Ministry of Health
2. Situation of routine information systems in Tajikistan	- Dr Safar Sayfuddinov - Director of the Republican Center of Medical Statistics and Information, Ministry of Health and Social Protection of the Population
3. Health information system in Oman	- Sulaiman Al Rawahi, Ministry of Health, Oman
4. Models to align and integrate RHIS in Primary Care Settings in Nepal	- Paban GHIMIRE, National Professional Officer WHO Nepal Country office, presenting on behalf of Nepal MoH.
5. Strengthening RHIS for PHC in China	- Dr Xiaoxu Wang
6. "Healthy Islands Monitoring Framework - using local data to inform local issues"	- Vicki Bennett, Australian Institute of Health and Welfare (AIHW)

Session 1 Countries at the Centre: Models to align and Integrate RHIS in Primary Care Settings

Facilitator

Kristin Braa University of Oslo

Professor Kristin Braa is heading the Health Information Systems Program (HISP) at the University of Oslo, which is a global action research network responsible for the development of the District Health Information Software (DHIS2). DHIS2 is an open source, web-based health management information system (HMIS) platform. Today, DHIS2 is the world's largest HMIS platform implemented in over 100 coun-tries in Africa and Asia. 2.4 billion people are covered by this service in DHIS 2.

Speakers

Ardeshir Khosravi Iran

Dr Ardeshir Khosravi is a Faculty Member and Director of the Group for Health Statistics and Health Economics at the Iranian Ministry of Health and Medical Education and a Senior Researcher of the Research Center for Health Equity at Tehran University of Medical Sciences. In 2017, Dr Khosravi was awarded by the Iranian Ministry of Health and Medical Education for improvement of the Iranian Causes of Death Registration system.

Dr Khosravi has contributed to various aspects of the Iranian Health Information System, including the im-plementation of various National Surveys in Iran. He is one of the primary contributors and a member of the technical committee for developing and implementing the Electronic Health Record through the Iranian Primary Health Care.Dr Khsoravi holds a Doctor of Philosophy (PhD) in the field of Population Health and a Diploma in Public Health from the University of Queensland, Australia.

Paban GHIMIRE WHO Nepal Country Office

Paban Kumar Ghimire is a National Professional Officer in the WHO Nepal Country Office, presenting on behalf of the Nepal Ministry of Health.

Xiaoxu Wang China

Xiaoxu Wang works within the Centre for Health Statistics and Information, at the National Health Commission of China.

Saifuddinov Safar Rakhimovich Tajikistan

Dr Saifuddinov Safar Rakhimovich is a Medical Doctor within the Center for Medical Statistics and Information, of the Ministry of Health and Social Protection of the Population of the Republic of Tajikistan.

Between 1997-1999 he participated in the project “Creation of the European Network for Public Health - EUPHIN - EAST”, 1997-2000. participated in the creation of the Central Asian network on public health “CARINFONET”, 2006-2015. participated in the project supported by the European Union “Development of the health management information system in the Republic of Tajikistan”. 2015-2018 WHO expert on the development of the National Development Strategy of the Republic of Tajikistan for the period 2016-2030, Medium-Term Development Program of the Republic of Tajikistan for 2016-2020,

As part of the working group, he developed the National Health Strategy of the Republic of Tajikistan for 2010-2020, the Strategic Plan for the rationalization of medical institutions of the Republic of Tajikistan for 2011-2020. He was the coordinator and technical director of a number of studies on maternal and child health, smoking problems, the health of schoolchildren, nutrition, risk factors for non-communicable diseases. With the support of the European Union, within the framework of the project “Technical Support for Strengthening the Healthcare Information System”, a Unified Healthcare Management Information System of the Republic of Tajikistan was created. This system works online and allows you to have detailed informa-tion about the health status of the population and the activities of health care institutions.

Suleiman Al Rawahi Ministry of Health Oman

Suleiman Al Rawahi is the Head of the Biostatistics Section within the Ministry of Health in Oman. He is a statistician by background and has a Master of Public Health, Epidemiology and biostatistics from Curtin University Australia. He is the focal point for UNICEF and WHO within the Ministry.

Vicki Bennett Australian Institute of Health and Welfare

Vicki is the Head of the Metadata and Classifications Unit at the Australian Institute of Health and Welfare, where she has held a number of different roles over the past 13 years. She has also lectured at a range of Australian universities and is passionate about ensuring that good health information is used to improve health outcomes for all.

Vicki has a degree in Health Information Management, and a Masters in Health Informatics and has had a diverse career both domestically and internationally. She has worked extensively across the Pacific over the past 18 years. She has recently been appointed as an Advisor to the Pacific Health Information Network Board and also as the President Elect for the International Federation of Health Information Management Associations.

World Health Organization

Optimizing Routine Health Information Systems in Countries

Global consultation – Country Experience

SCORE for Health Data Technical Package

Deputy for Public health

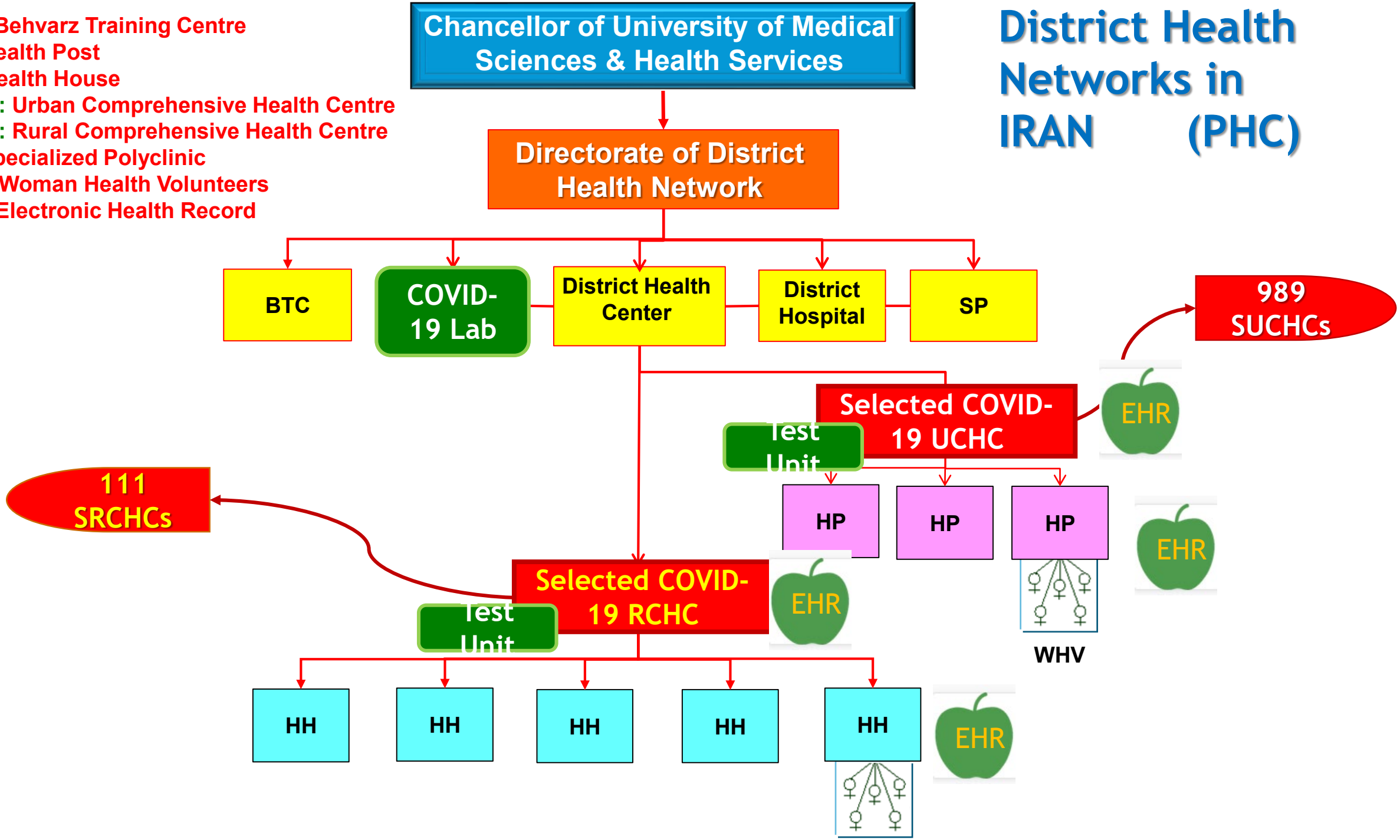
Islamic Republic of Iran

Iranian Primary Health Care Health Information System

Ardeshir Khosravi

BTC: Behvarz Training Centre
HP: Health Post
HH: Health House
UCHC: Urban Comprehensive Health Centre
RCHC: Rural Comprehensive Health Centre
SP: Specialized Polyclinic
WHV: Woman Health Volunteers
EHR: Electronic Health Record

District Health Networks in IRAN (PHC)



Rational of the Iranian PHC's Health Information system based on Electronic Health Record (EHR)

- PHC's Electronic Health Record was a mandate in,

❑ Fifth and sixth national social, cultural and economic development plan

❑ HTP and UHC

- Develop Health Service Delivery was based on :

❑ new Iranian PHC

❑ revised service packages based on population age groups needs, NCD and SDH

Hence, EHR was a prerequisite particularly for expansion of family practice program and referral system.

- In 2014, in line with the Iranian HTP, the PHC's Electronic Health record was launched across the countries.

Features of the electronic record

- The EHR, containing all continues health information and services of a person over his or her life-Sycle which are stored electronically at PHC level.
- Information can be shared among different health organizations.
- The EHR includes all health service packages by age and sex based on health network structure.
- Different levels of access are defined for Service Providers and Health Managers. It includes a wide range of information including:

❖ personal demographic information,

❖ records of diseases, medical records and Health cares

❖ and all information affecting on individual health.

Also, there is possibility of interaction with other systems out of the Ministry of Health and Medical Education such as Insurance System, National Organization for Civil Registration, etc.

میز کار رئیس گروه آمار و اقتصاد بهداشت اردشیر خسروی

بسیج ملی مبارزه با کووید 19 | مرحله اول | مرحله دوم | مرحله سوم | مرحله چهارم | خدمت | ویزیت | ارزیابی | ساختار شبکه | عملکرد | مادران | غیر واگیر | بهداشت محیط و کار

تعداد تشکیل پرونده (نفر)		تعداد مراجعه (نفر-روز)		تعداد خدمات		تعداد ارجاعات		تعداد پرونده در 365 روز گذشته		کاربران سامانه	
مجموع	79,539,277	مجموع	953,492,156	مجموع	3,424,256,502	مجموع	155,393,124	مجموع	63,170,434	مجموع	198,898
امروز	16,531	امروز	610,532	امروز	1,380,490	امروز	66,222	امروز	610,532	امروز	66,599

نمایه توده بدنی | هرم سنی جمعیت | گروه های سنی | تعداد خدمات | خدمات امروز | خدمات ماه گذشته | میانگین خدمات روزانه به تفکیک ماه | فعالیت مراکز | فعالیت کاربران | افراد ثبت نام شده

خانوار تحت پوشش | فشارخون مراجعه کنندگان | کاربران برخط به تفکیک محل خدمت | کاربران برخط به تفکیک نقش | خدمت در ایام هفته | خدمت در ساعات شبانه روز | ارزیابی خطر ده ساله بیماریهای قلبی عروقی | تعداد پیامک های دعوت به خدمت | بسیج ملی کنترل فشارخون

Results of HIS intervention in I.R.Iran

- Successes:
- Near 94 percent of the Iranian population are registered (~79,500,000)
- All PHC facilities (29,377) are using EHR using online program
- all health care and services based on service packages and age groups are electronically delivered to defined population of the PHC's facilities.
- Electronic Referral system are using
- Electronic prescription has been designed and will used very soon
- Client satisfaction are monitored by send SMS based EHR
- Challenges:
- Data quality particularly in early years
- No comprehensive data sharing between 4 EHR programs
- No link with private facilities
- Low coverage in mega cities

Lessons learned from HIS implementation in I.R.Iran

- **Recommendations:**

- Developing of the PHC's EHR is related to developing of Health Services delivery and model of care and this issue should be considered in planning and implementation of HIS
- Link between public and private facilities and sharing data needs coordination ad regulation
- **Support needs** (e.g additional technical, financial, capacity building)
- Data quality assessment
- Financial and Technical support for monitoring and evolution of the program

Thanks for your attention

World Health Organization

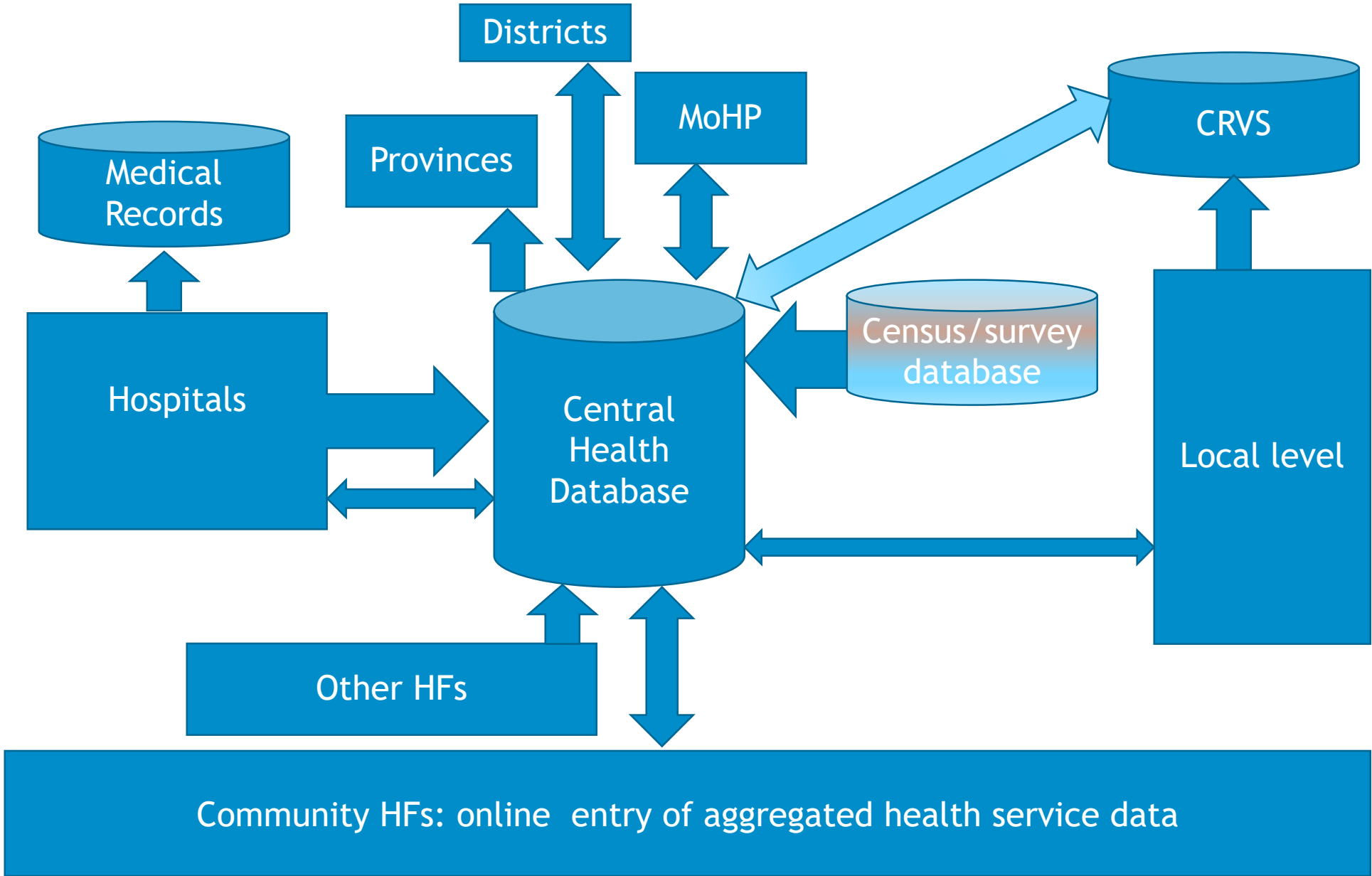
Optimizing Routine Health Information Systems

Models to align and integrate RHIS in Primary Care Settings Nepal

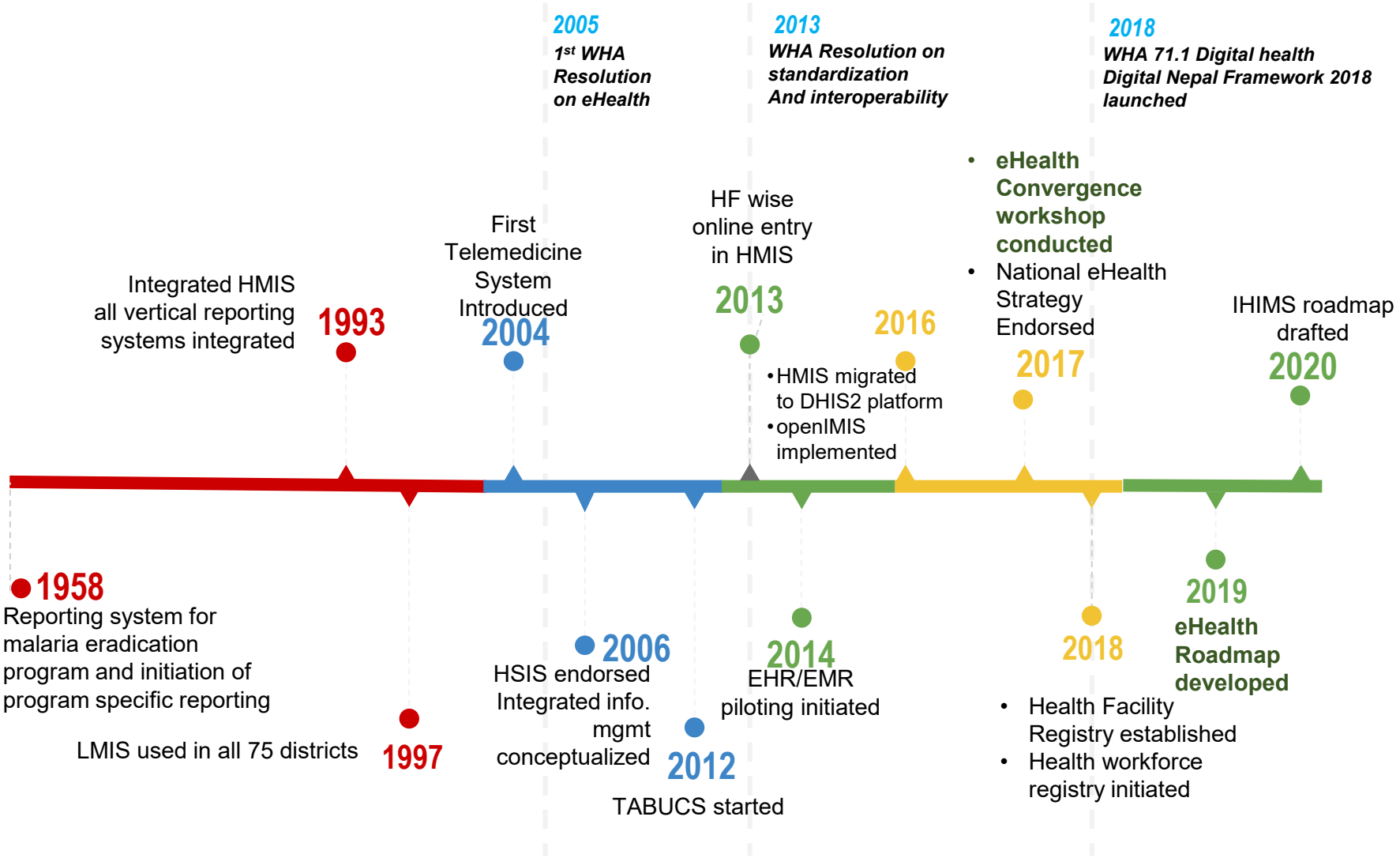
SCORE

HIS governance and RHIS flow, Nepal

- Governance structure is federal with seven provinces and 753 local levels
- National Health Policy, Public Health Service Act and CRVS strategy for health data governance
- Health facilities are kept in jurisdiction of tiers of governments
- Institutions delivering basic health services are 134 public hospitals, 2,277 non-public health facilities, 194 primary health care centres, 3,767 health posts , 11,589 PHC Outreach Clinics , 16,698 EPI clinics plus 49,481 FCHVs.



NEPAL's Health Information and Digital Health Journey



Current status of national HIS

75% of indicators have data available to monitor the health-related SDGs

Data sources and status for SDGs progress measurement	No. of measurements
HMIS	9
HMIS (Partial)	12
HMIS (Partial) and CRVS	6
HMIS and EWARS	2
HMIS and Maternal and Perinatal Death Surveillance	1
HMIS (Partial), CRVS and Nepal Police.	2
HW Registry	1
IMIS	1
LMIS	1
Cancer registry	1
Population based surveys	23
Total measurements	59

HIS intervention in Nepal

Area of HIS intervention

- RHIS designed for planning and monitoring for PHC through information on basic health care at sub-national levels
- Use of available technologies for HIS improvement
- Demand driven RHIS; considering data need at service delivery points and planning units
- Sub-national leadership for health data
- Availability of disaggregated data: geography, HF wise and administrative unit
- Public-private engagement for digital solutions
- RHIS Assessment

RHIS intervention implemented in the country

- Roadmaps for eHealth and RHIS
- Initiation to form M and E mechanism at provincial levels
- HF and HW Registries initiated
- Continuity of health surveys
- HIS integration in PME at institutional level
- Information management unit and system for COVID19 data management

Results of HIS intervention

Successes:

- Shortened span of health surveys through use of technology in data collection, management and dissemination
- Data availability at sub-national levels for planning and monitoring
- Emerging market for digital health solutions
- Linkages established through TWG with M and E, CRVS and population census authorities
- MoHP affiliated to Health Data Collaborative
- Practice of preparing SDGs status report and conducting data gap assessment for SDGs
- Use of SCORE recommendations in RHIS Roadmap
- Availability of COVID19 related information in IMU
- Development of SDGs National Action Plan including health data accelerator

Challenges:

- Indirect chain of command and loose communication for knowledge transfer
- Lack of harmonization and uniformity of interventions
- Digital divide
- Optimizing data use
- Paucity of knowledge on holistic approach for health data management and use
- Ad-hoc interventions
- Lack of support mechanism at country level for DHIS operation and maintenance
- Dependency on partners for continuity of RHIS, especially in COVID 19 data management

Lessons learned from HIS implementation

Recommendations:

- Enforcement of regulations and establish dedicated institution/mechanism for health data governance
- Urgency of digital health platform
- Equipping sub-national governance and service delivery units with capacity and infrastructure
- Expedited implementation of eHealth and RHIS roadmap for comprehensive solutions
- Expediting formation of sub-national mechanism for M and E
- Localization of SDGs and orientation
- Thinking on data; how data originators can be benefited directly
- Improving reviews with support of data
- Enhance local accountability
- Implementation research for health data interventions

Support needs

- Sharing of interventions and solutions; intra-region
- Advocacy and support for HR development
- Technical support for digital health planning and laying digital health platform
- Linking institutions for capacity building; digital health, monitoring, standards including ICD and MCCoD
- Capacity building for M and E to enhance data use

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Optimizing Routine Health Information Systems

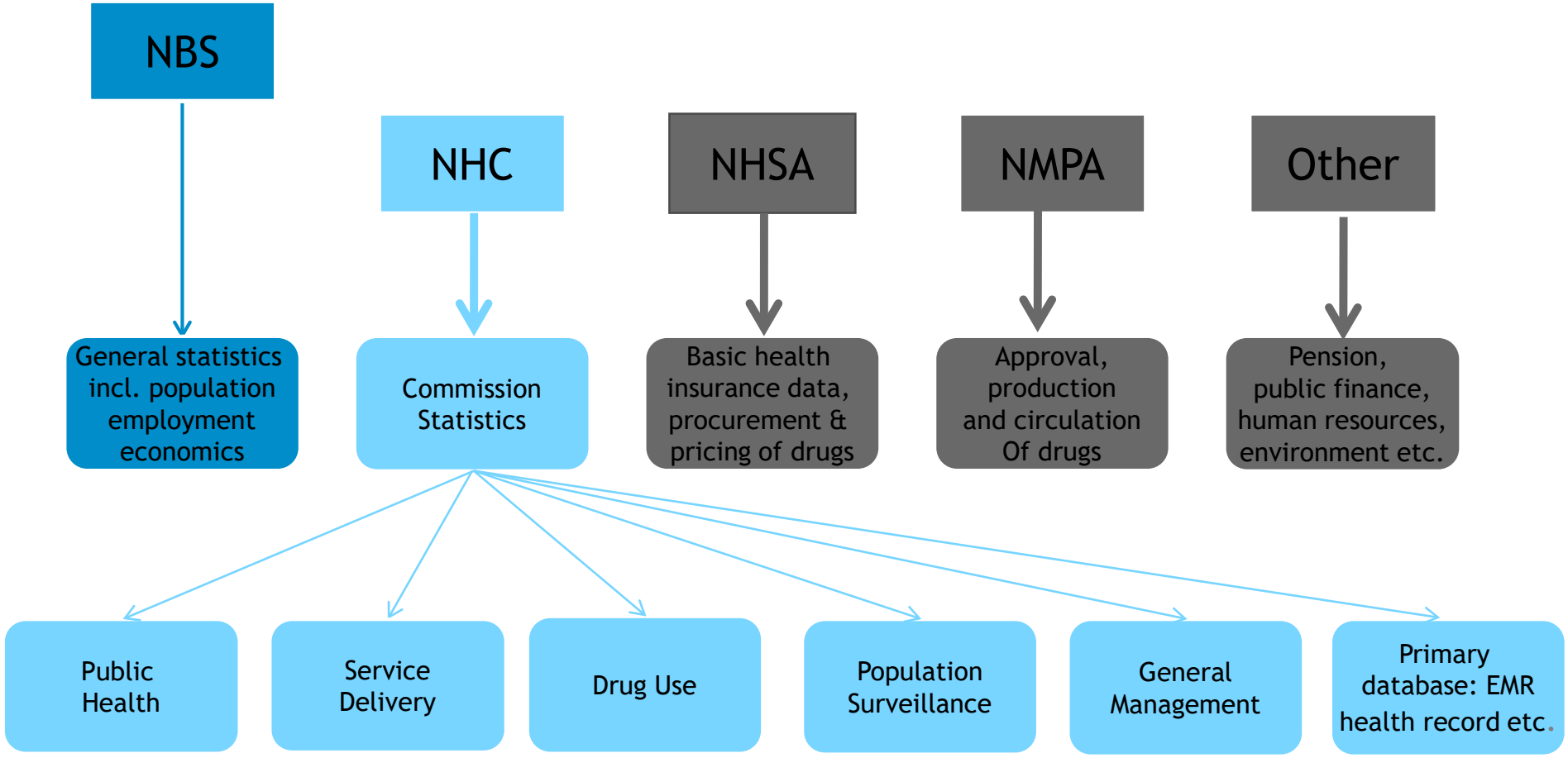
Expert consultation - Country Experience

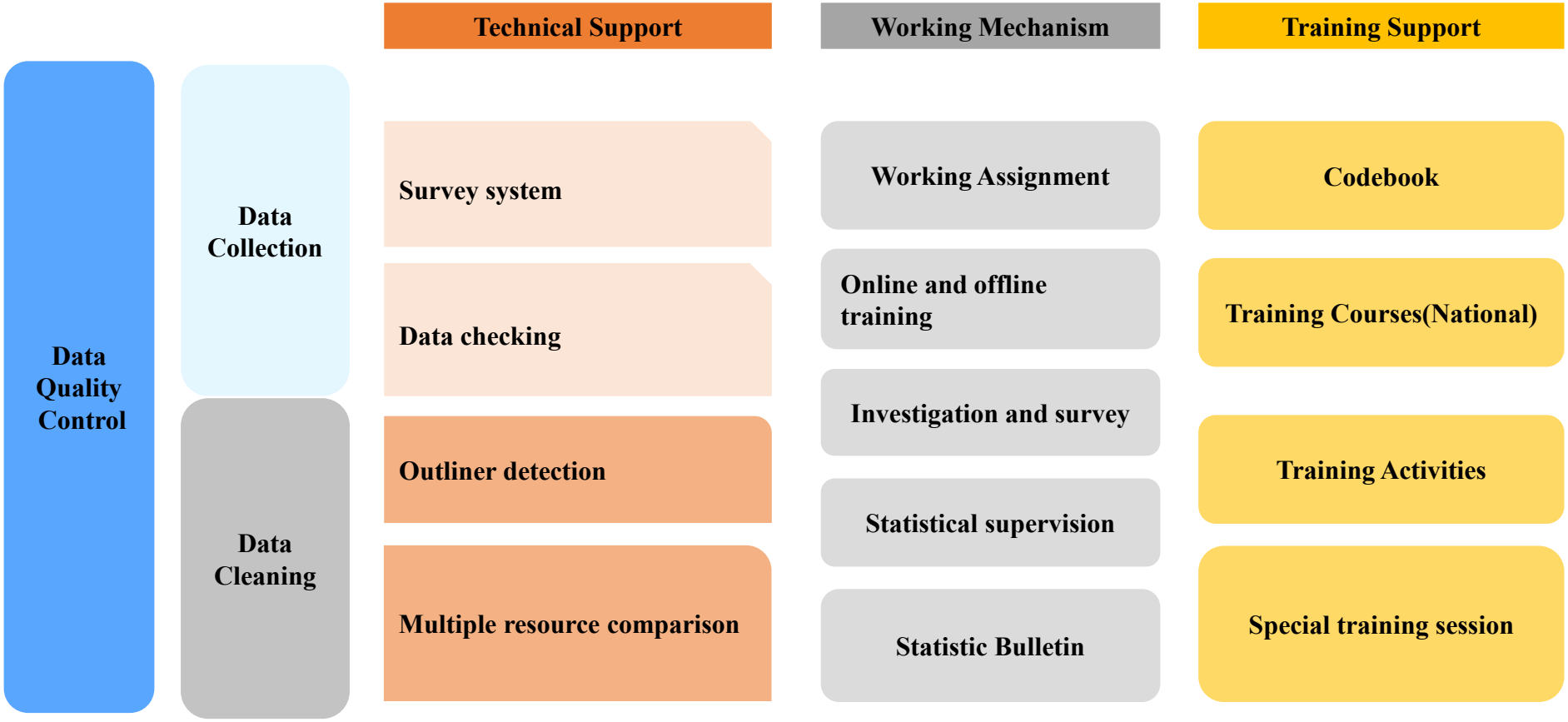
SCORE

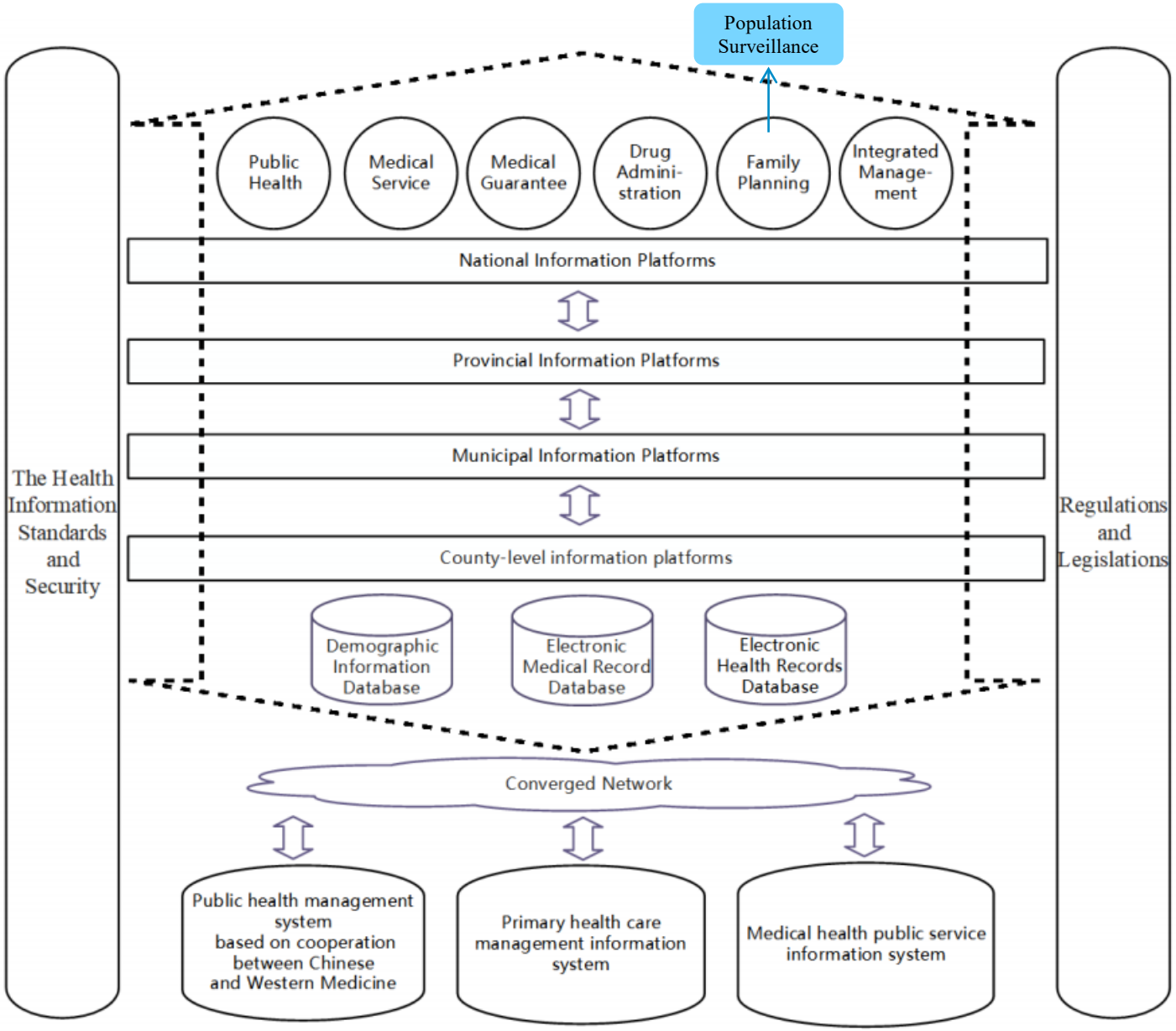
CHINA

Promote UHC & PHC with digital approaches supported by optimized RHIS

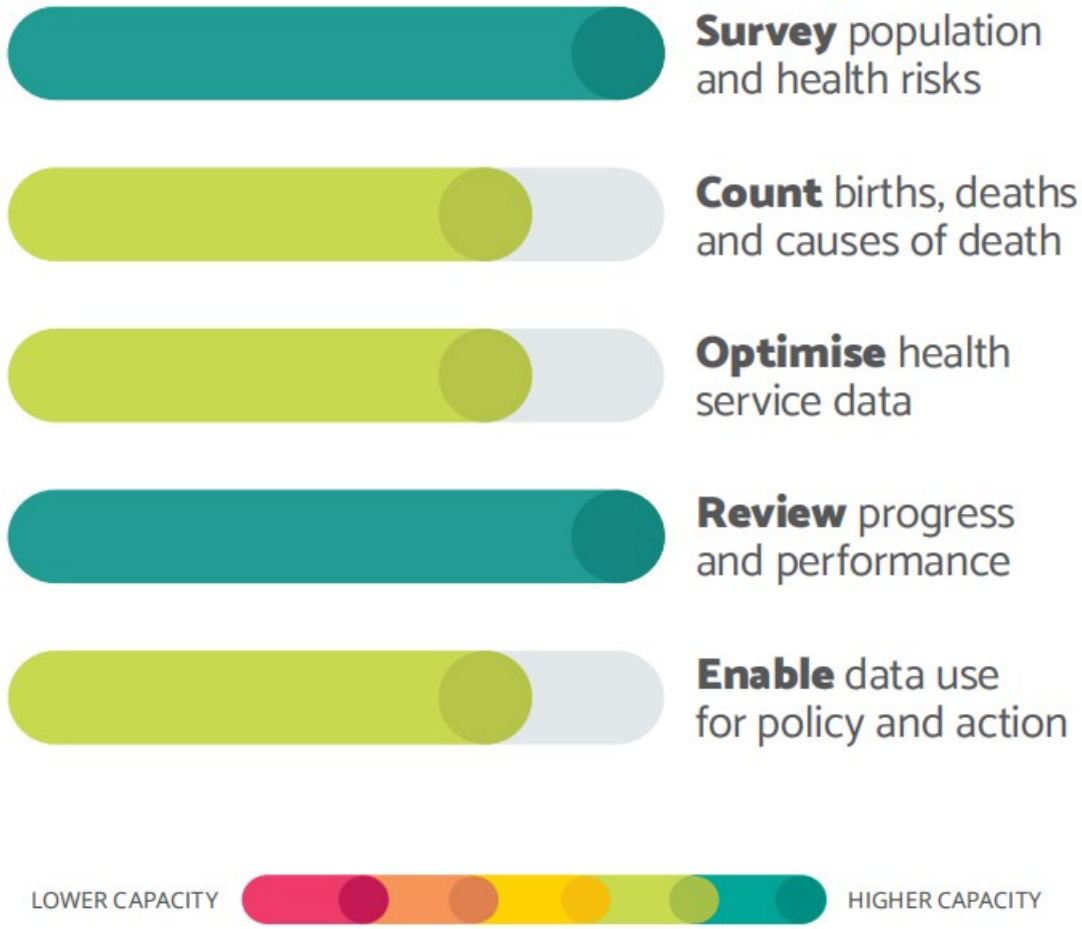
Health information collection system




Data Quality Control
Data Collection
Data Cleaning
Technical Support
Survey system
Data checking
Outliner detection
Multiple resource comparison
Working Mechanism
Working Assignment
Online and offline training
Investigation and survey
Statistical supervision
Statistic Bulletin
Training Support
Codebook
Training Courses(National)
Training Activities
Special training session



Li, Chen, et al. "Implementation of National Health Informatization in China: survey about the status quo." JMIR medical informatics 7.1 (2019): e12238.


Survey population and health risks
Count births, deaths and causes of death
Optimise health service data
Review progress and performance
Enable data use for policy and action
LOWER CAPACITY
HIGHER CAPACITY

World Health Organization

Ситуация рутинных информационных систем здравоохранения в Таджикистане

Global consultation/ Глобальная консультация - Страновой опыт

Ministry of Health
and Social Protectin
of the Populatcioh of the
Republic of Tajikistan

World Health
Organization

Республика Таджикистан

Информационная система здравоохранения: достижения, перспективы.

SCORE for Health Data Technical Package

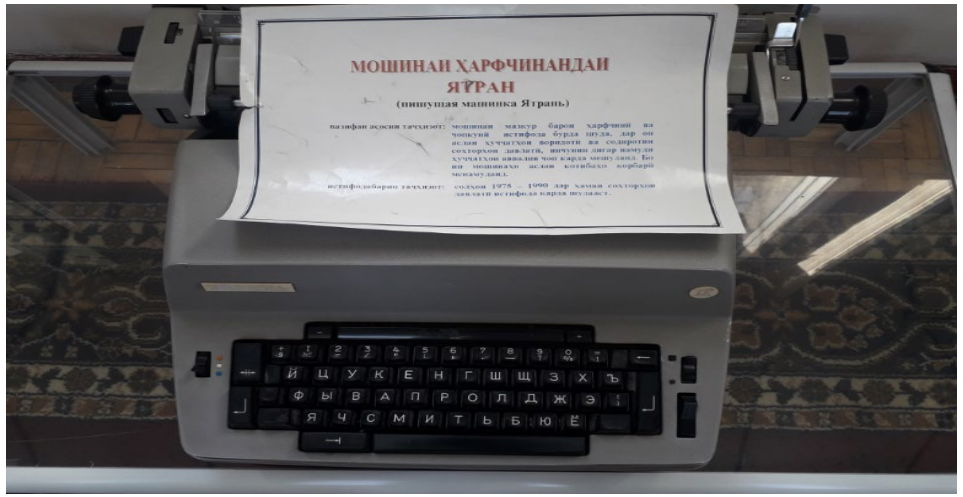
9 сентября 2021 года Республика Таджикистан отмечает 30-летие своей независимости.

За этот период Таджикистан достиг значительных успехов в повышения качества и эффективности медицинских услуг и улучшение здоровья населения. Уровень заболеваемости снизились в 3 раза, младенческой и материнской смертности более чем в 2 раза, ожидаемая продолжительности жизни при рождении увеличилось с 68,2 (2000г.) до 75,1 лет (2019г.). Используются современные методы диагностики и лечения больных, улучшена инфраструктура и внедрены новые информационные технологии.

Структура информационной системы здравоохранения

ЦМСиИ - Центр медицинской статистики и информации, ОМК/ОМО- оргметодкабинет/отдел

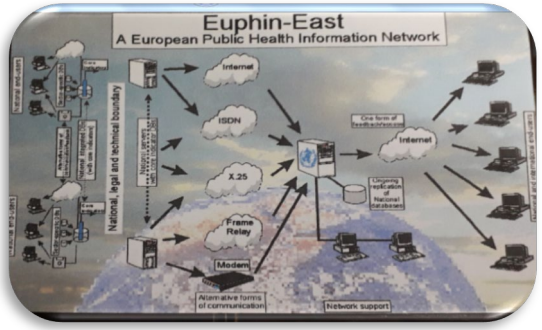
Информационные технологии 90-х годов

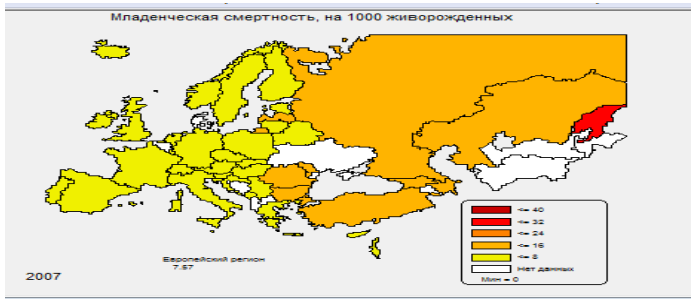


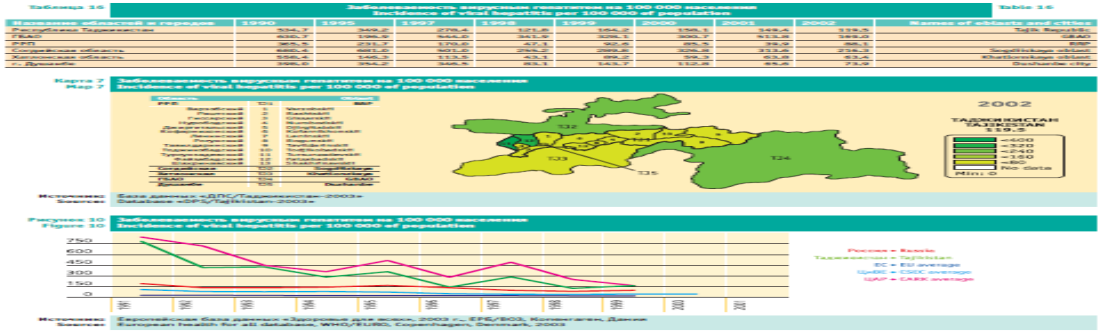
Информационная система здравоохранения развивалась в трёх направлениях:

1. Развитие информационной системы в целях управления здравоохранением
2. Развитие информационной системы в целях обеспечения доступа к медицинским услугам на расстоянии -телемедицина
3. Развитие информационной системы в целях наблюдения, диагностики и лечения пациентов - цифровизация здравоохранения (электронные медицинские паспорта)

1. Развитие информационной системы в целях управления здравоохранением



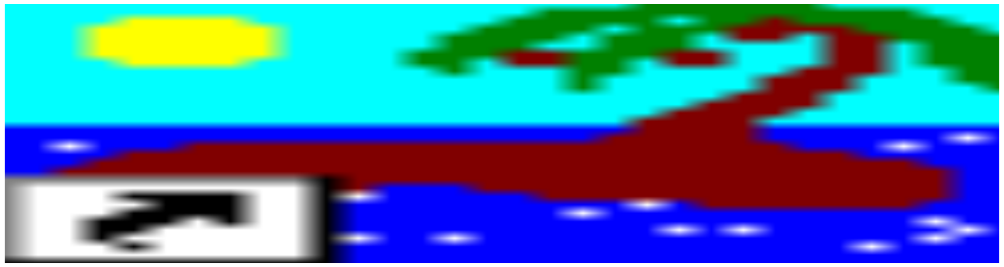




В сотрудничестве с ВОЗ, в рамках создание Европейской и центрально-азиатской информационных систем по общественному здравоохранению развивалась информационная система управления здравоохранением в РТ

2000-2014 годы функционировали частично автоматизированные электронные системы

MEDSTAT → **База данных здравоохранения**

 → **Оперативные данные**

Factor_Ink

STACIONAR → **Данные о деятельности стационара**

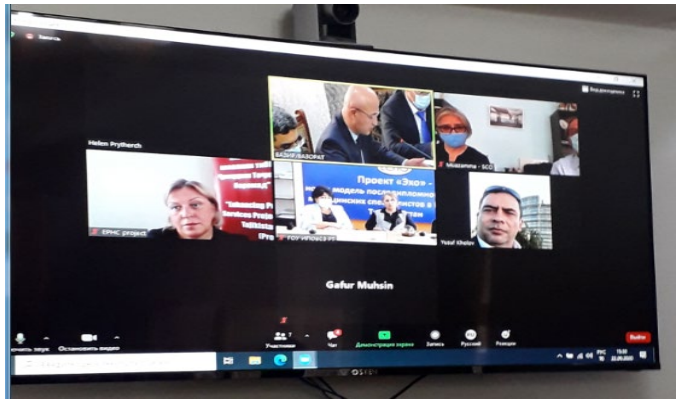
С 2015 года начала функционировать в он-лайн формате, разработанная при поддержке Европейского Союза на базе DHIS2 информационная система по сбору, обработке и представления информации о состояние здоровья населения и деятельности учреждений здравоохранения

Установлены сервера, учреждений здравоохранения обеспечены компьютерной техникой, средствами связи, персонал обучен. Информация о заболеваемости формируется с использованием кодов МКБ-10

2. Развитие информационной системы в целях обеспечения доступа к медицинским услугам на расстоянии -телемедицина

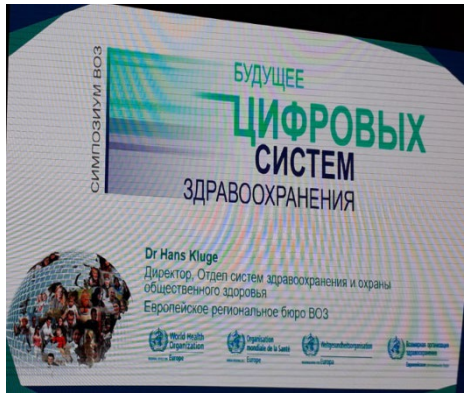
- **В стране используются более 25 современных телемедицинских установок**

Пандемия COVID -19 продиктовала необходимость широкого использования возможности информационных технологии в целях консультации пациентов на местах, обучения специалистов, мониторинг деятельности и принятие оперативных решений



Установлена он-лайн связь со всеми регионами страны

3. Развитие информационной системы в целях наблюдения, диагностики и лечения пациентов - цифровизация здравоохранения (электронные медицинские паспорта)



В рамках инициативы ВОЗ «Будущее цифровых систем здравоохранения» и принятая Правительством Республики Таджикистан «Концепция цифровой экономики», разработан проект Стратегического плана цифровизации здравоохранения на 2021-2025 годы.


Правительство Республики Таджикистан

ПОСТАНОВЛЕНИЕ

КОНЦЕПЦИЯ ЦИФРОВОЙ ЭКОНОМИКИ

№ 642, 30.12.2019г.


ПРОЕКТ

Министерство здравоохранения и социальной защиты населения Республики Таджикистан

ПРИКАЗ

Стратегический план цифровизации здравоохранения на 2021-2025гг.

2021с.

Уроки, извлеченные из внедрения ИСЗ в Республике Таджикистан

- Созданная на платформе DHIS2 информационная система является отличным инструментом для формирования и использования информации в целях управления системой здравоохранения. Данная платформа не содержит информацию для наблюдения, диагностики и лечения отдельных пациентов.
- Телемедицинская система должна функционировать в рамках двухсторонних и многосторонних соглашений между отдельными учреждениями в стране и других стран с использованием сопоставимых, профессиональных, стационарных и передвижных телемедицинских установок.
- Цифровизация здравоохранения - является инструментов обеспечения доступа к достоверной информации, принятие клинических решений, использования искусственного интеллекта.

Трудности. Поддержка.

Цифровизация здравоохранения требует определенных ресурсов:

- Технические средства (сервера, компьютеры, средства связи)
- Программное обеспечение
- Обучение персонала
- Нормативно-правовая база
- Администрирование и сопровождение системы


Спасибо за внимание!

World Health Organization

Situation of routine health information systems in Tajikistan

Global consultation – Country Experience

SCORE for Health Data Technical Package

Ministry of Health and Social Protectin of the Populatcioh of the Republic of Tajikistan

World Health Organization

Republic of Tajikistan

Health Information System

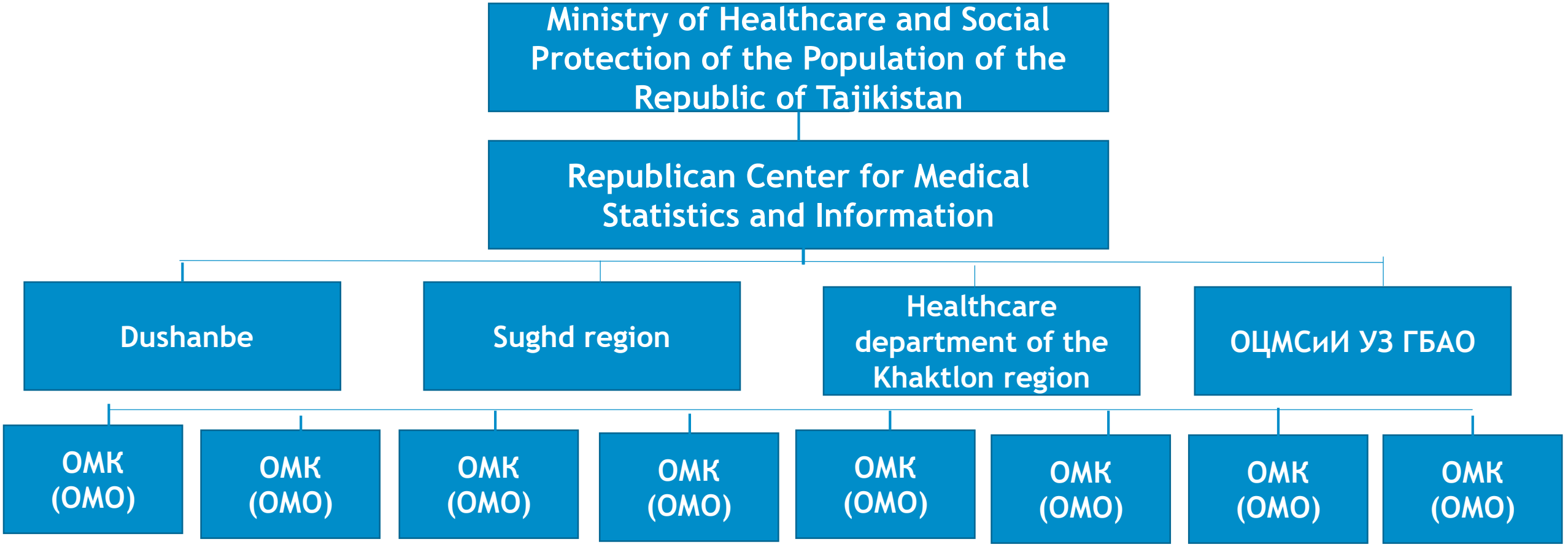
achievements, perspectives

On September 9, 2021, the Republic of Tajikistan celebrates the 30th anniversary of its independence.

During this period, Tajikistan has made significant progress in improving the quality and efficiency of medical services and improving the health of the population.

The incidence rate decreased by 3 times, infant and maternal mortality by more than2 times, life expectancy at birth increased from 68.2 (2000) to 75.1 years (2019). Modern methods of diagnostics and treatment of patients are used, infrastructure is improved and new information technologies are introduced.

The structure of the health information system



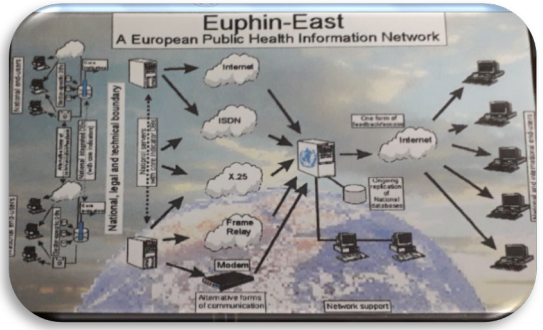
ЦМСиИ - Center for Medical Statistics and Information, ОМК/ОМО- orgmethodologicaloffice / department

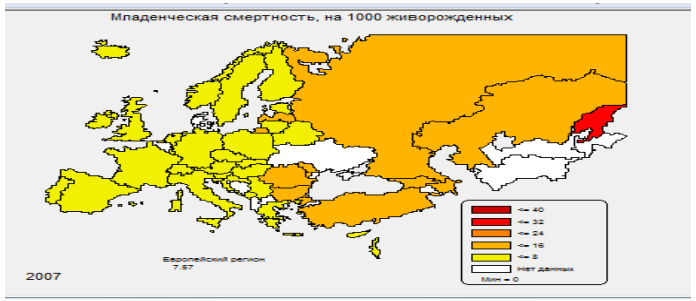
Information technology of the 90s

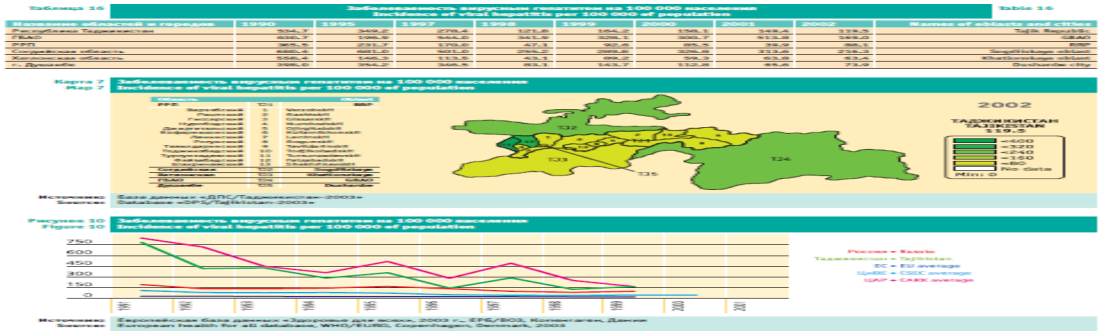
The health information system has evolved in three directions:

1. Development of an information system for health management purposes
2. Development of an information system to ensure remote access to medical services - Telemedicine
3. Development of an information system for the observation, diagnosis and treatment of patients - digitalization of healthcare (electronic medical passports)

1. Development of an information system for health management purposes



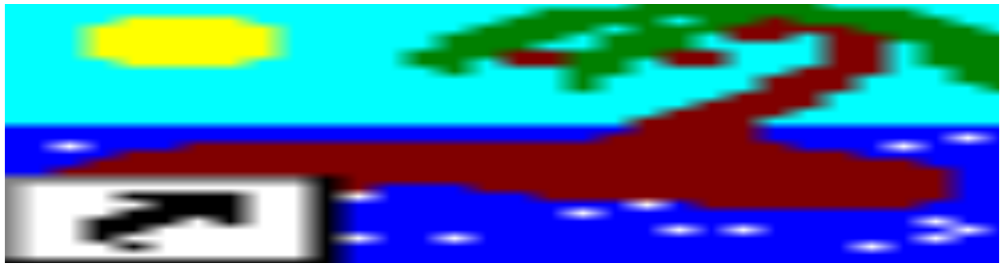




The health management information system in the Republic of Tajikistan was developed in cooperation with WHO, in the context of developing the European and Central Asian information systems for public health.

2000-2014 partially automated electronic systems

MEDSTAT → Healthcare database

 → Operational data

Factor_Ink

STACIONAR → Data on Hospital activity

Since 2015, electronic information system developed with the support of the European Union on the basis of DHIS2 for the collection, processing and presentation of information on the state of health of the population and the activities of health care institutions,

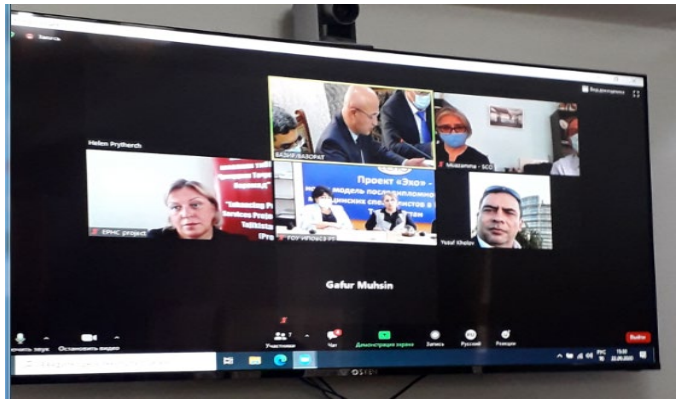
Servers have been installed, health care institutions have been provided with computers, communication facilities, personnel trained.

Information on morbidity is generated using ICD-10 codes

2. Development of an information system to ensure access to medical services at a distance - telemedicine

- More than 25 modern telemedicine installations are used in the country

The COVID-19 pandemic forced the need to use the opportunity of information technology in order to consult patients on the spot, train specialists, monitor activities and make operational decisions.



Established online connection with all regions of the country

3. Development of an information system for monitor diagnosing and treating patients - digitalization of hea (electronic medical passports)

Through the WHO initiative "The future of digital health systems" and through the "Concept of the digital economy" adopted by the Government of the Republic of Tajikistan, a draft Strategic Plan for the digitalization of healthcare for 2021-2025 has been developed.

Lessons learned from the implementation of HIS in the Republic of Tajikistan

- The DHIS2 platform is an excellent tool for generating and using information for managing the healthcare system. This platform does not contain information for diagnosis and treatment of individual patients.

- The telemedicine system should operate within the framework of bilateral and multilateral agreements between individual institutions in the country and other countries using comparable, professional, stationary and mobile telemedicine installations.

- Digitalization of healthcare is a tool for providing access to reliable information, making clinical decisions, using artificial intelligence.

Difficulties. Support.

Digitalization of healthcare requires certain resources:

- Technical means (servers, computers, communication facilities)
- Software
- Training
- Legal and regulatory framework
- System administration and maintenance


Thank you for the attention!

World Health Organization

Optimizing Routine Health Information Systems in Countries

Global consultation – Country Experience

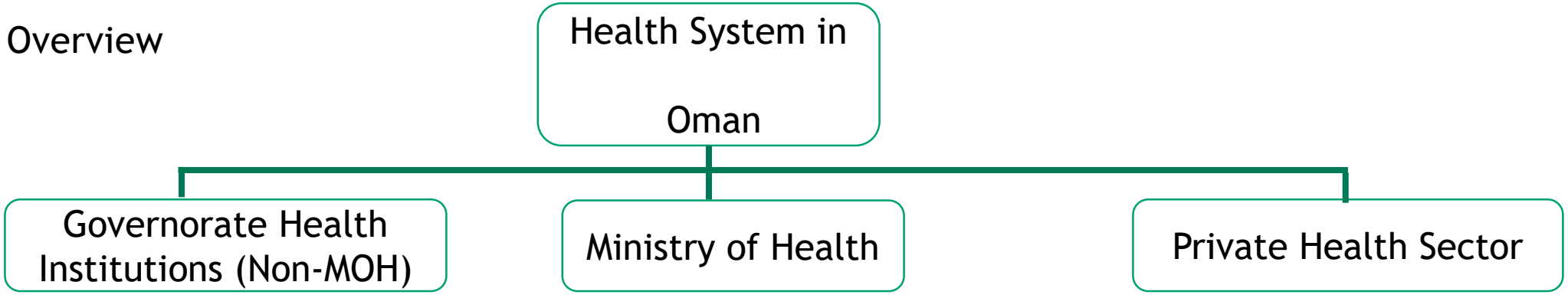
SCORE for Health Data Technical Package

Oman

Health Information Systems in Oman

About [Oman]

- Overview



- Current status of national Health Information System:

SCORE country profile: https://www.who.int/data/data-collection-tools/score/country-profiles

- Overall summary score (page 4)
  - ❖ Overall Score was green
  - ❖ The highest score was in **"Surveillance of public health threats"** & **"Births & Death Registration"**
  - ❖ The lowest score was **"Health service resources: Health Financing"**
- Data availability to monitor UHC/SDG (page 5)
  - ❖ 94% of indicators have data available to monitor the Health related SDGs
  - ❖ 74% >>> coverage of essential Health services (3.8.1 UHC) (Source Annual Health Report 2020)

HIS intervention in [Oman]

What Topic	Support needs	How it's Implementing
Upgrading to Fully electronic system for Births & Deaths Notification System (BDNS)	• Building Capacity to improve COD • How to redistribute the garbage codes.	• TOT for doctors and Coders. • Using methodology or software to redistribute garbage codes. • Making brief guideline to " How to choose COD"
Upgrading the HIS in MOH to be full electronic system	•Building capacity to analyzing big data	• Trains statistician in " analyzing big data". • Trains in "making modeling and projections" •Making deep analyzing & writing scientific report.

Input Data (Opd visits)

-Medical records (SHIFA)
-Civil ID
-Demographic info
-Clinic (New-FU)

• Registration

Opd visits by age, sex, nationality, clinic, …..

-Nurse
-BP, Sugar, Temp
-Waiting time at clinic

• Vital signs

Nursing procedures

-History
-LAB, Rad request (waiting for results)
-Diagnose
-opd morbidity (icd-10)

• Doctor managemen

Service Utilization

-Follow up (Appointment)
-Referred to Hosp (waiting time for appointment)
-Admitted (inpatient)

• Final Decision

Appointments waiting period

pharmacy

Prescriptions

Cost

Health Information Reporting System (at all Levels)

Input Data (Inpatient Services Utilization)

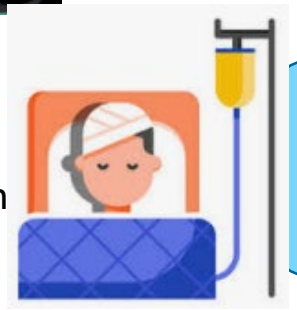
-Medical records (SHIFA)
-Civil ID
-Demographic info
-Ward/ Department

• Registration

IP by age, sex, nationality, Department, …..

-Ward/ Department

• Admission



-Bed Distribution
-Bed occupancy/ Turnover.

-History
-LAB, Rad request -Diagnose
-IP morbidity (icd-10)

• Doctor managemen

Service Utilization

Discharged (Alive or dead)
Discharge Icd-10

• Final Decision

Length of stay
Bed count days
IP mortality COD

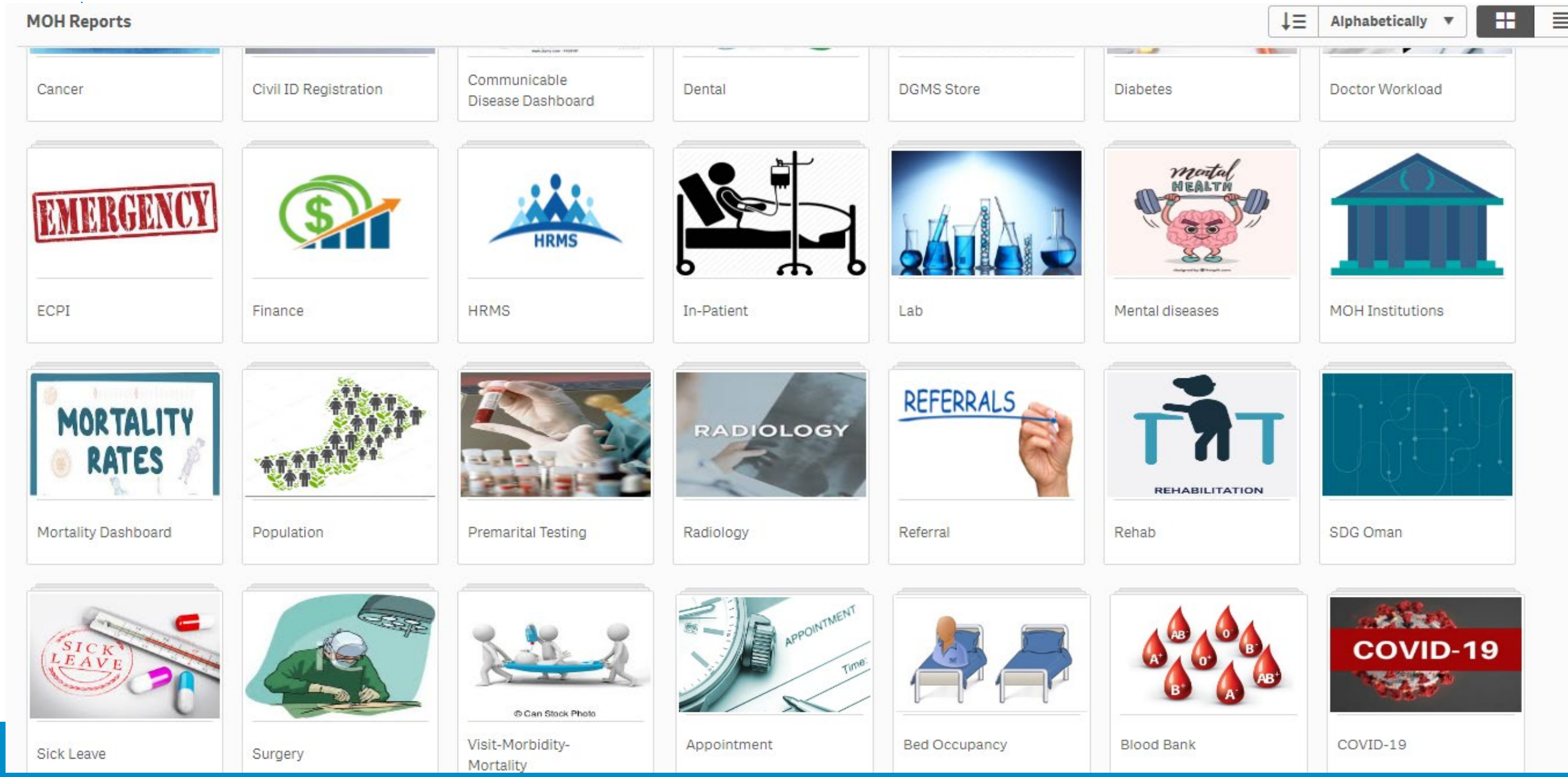
pharmacy

Prescriptions

Cost

Health Information Reporting System (at all Levels)

A screenshot of the main screen of the dashboard (Nabdh AlShifa):



Results of HIS intervention in [Oman]

- Successes:

❖ Digitalization of HIS in MOH (Automatically updated)
❖ Increasing the quality of the data
❖ Reporting National figure from the routine system (eg. Births & Deaths Data, Manpower, CDC, Blood Bank, Opd Visits, Health institutions, etc)

- Challenges:

❖ Lacking in analyzing big data.
❖ Lacking in How to calculate some SDG indicators (eg 3.5.1 & 3.5.2)
❖ Low experience in how to calculate DALYs, HALE, YLD

Lessons learned from HIS implementation in [Oman]

- **Recommendations:**

❖ Calculate aggregated data for SDG indicators by Age, Gender, Nationality, etc.

❖ Professional staff in analyzing, estimating and making projections.

❖ Upgrade some registers to be a national registers

- **Support needs** (e.g additional technical, financial, capacity building)

❖ Building Capacity to analyzing big data

❖ Tanning in Modeling, how to make projections/estimation and other related subjects.

❖ Tanning in " How to write scientific reports".

❖ Support to calculate some SDG indicators, (3.5.1 Coverage of treatment interventions (pharmacological, psychosocial and rehabilitation and aftercare services) for substance use disorders, 3.5.2 which stated "Harmful use of alcohol, defined according to the national context as alcohol per capita consumption (aged 15 years and older) within a calendar year in liters of pure alcohol).

❖ Brief guideline on " How to choose COD", to be shared with doctors

Australian Government

Australian Institute of Health and Welfare

Fundamental health information building blocks

Vicki Bennett

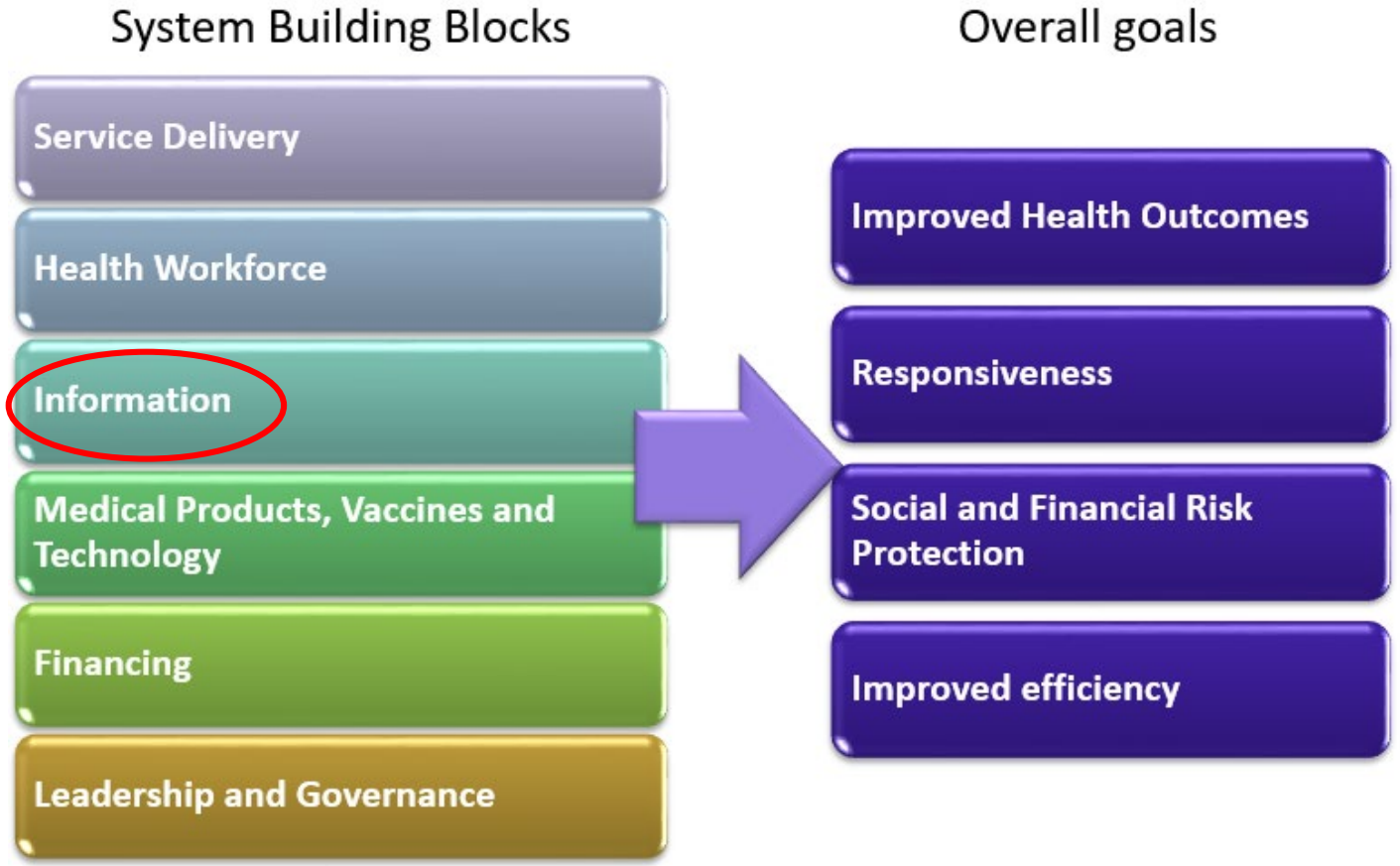
Head, Metadata and METeOR Unit

WHO Global Consultation on Routine Health Information Systems, 1-2 September 2021

AIHW

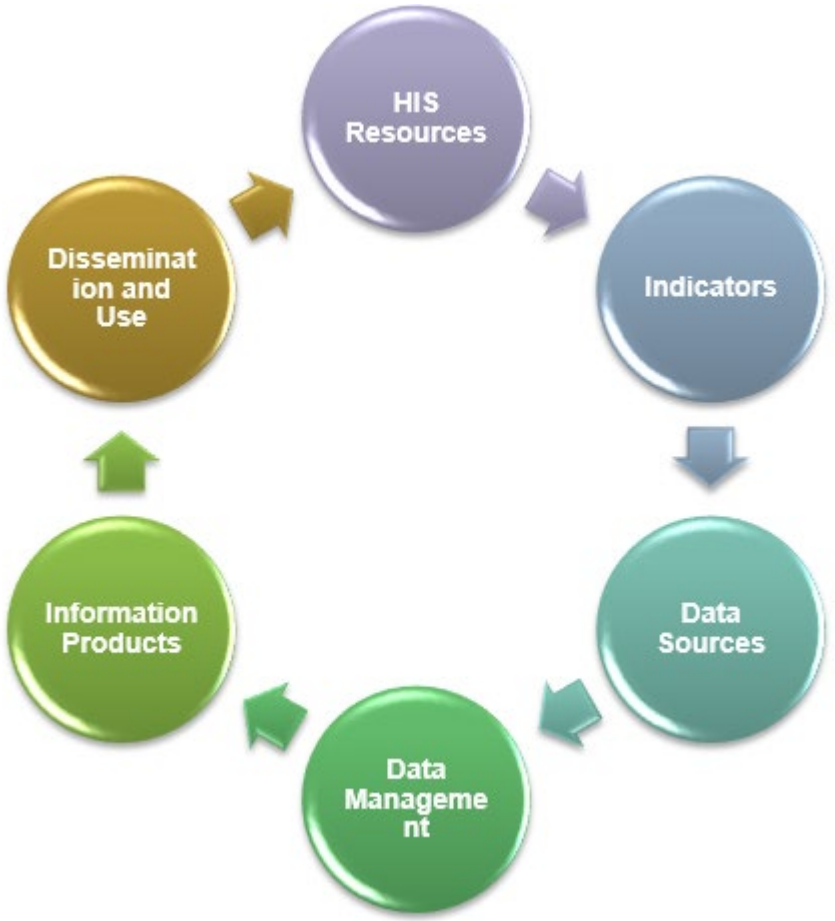
Stronger evidence,
better decisions,
improved health and welfare

WHO Framework on Health System Strengthening



World Health Organisation (WHO) Everybody's Business: *Framework for Action Strengthening Health Systems to Improve Health Outcomes* http://www.who.int/healthsystems/round9_2.pdf

Defining Health Information Systems



Health Metrics Network (HMN) *Framework and Standards for Country Health Information Systems*
http://www.who.int/healthmetrics/en/

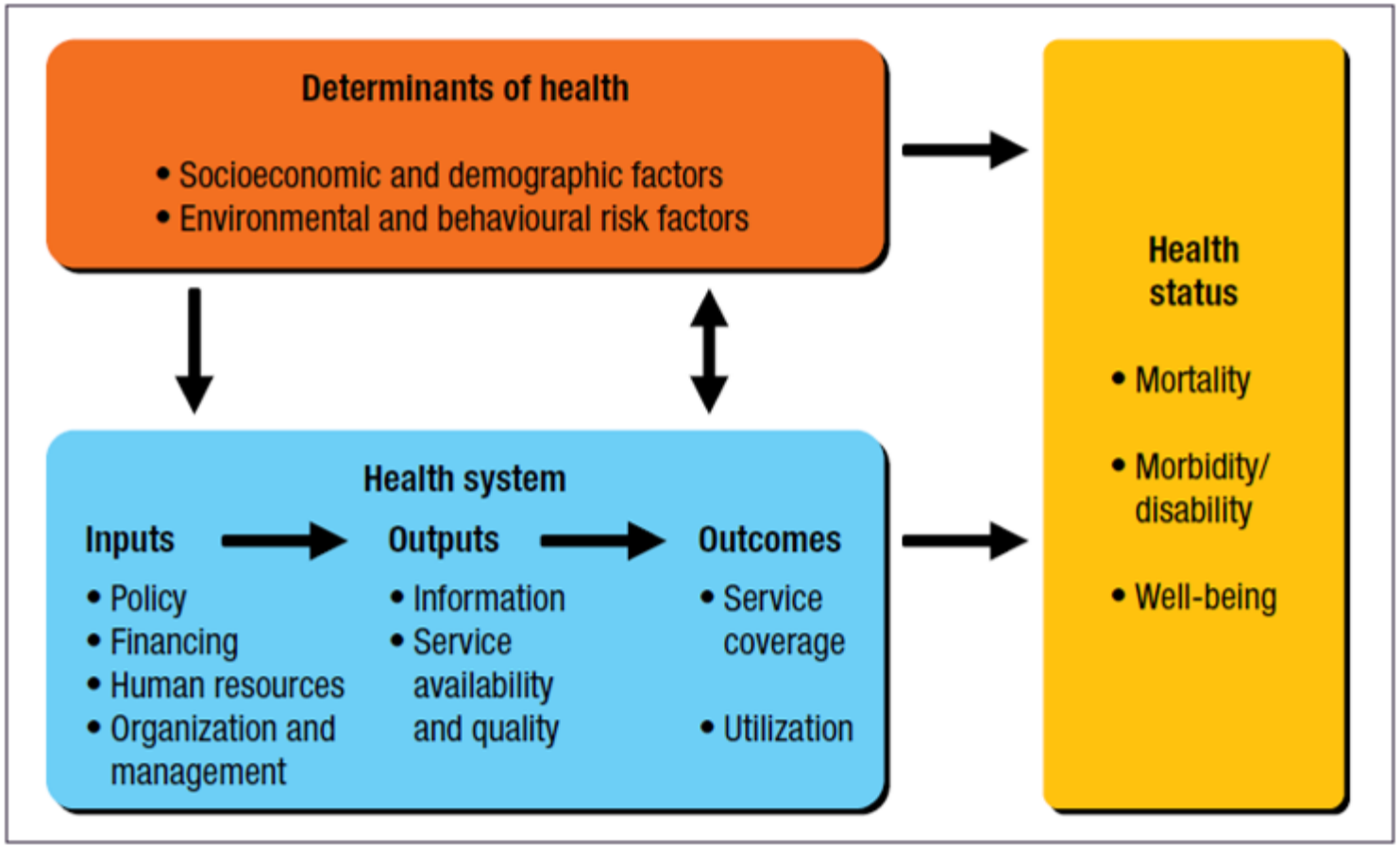
1. Information System Resources

- Includes the legislative, regulatory and planning frameworks, the resources that are required such as:
  - personnel
  - financing
  - logistics support
  - information and communications technology (ICT)
  - coordinating mechanisms within and between the six components

2. Indicators

- The need for a core set of indicators and related targets covering:
  - determinants of health
  - health system inputs, outputs and outcomes
  - health status

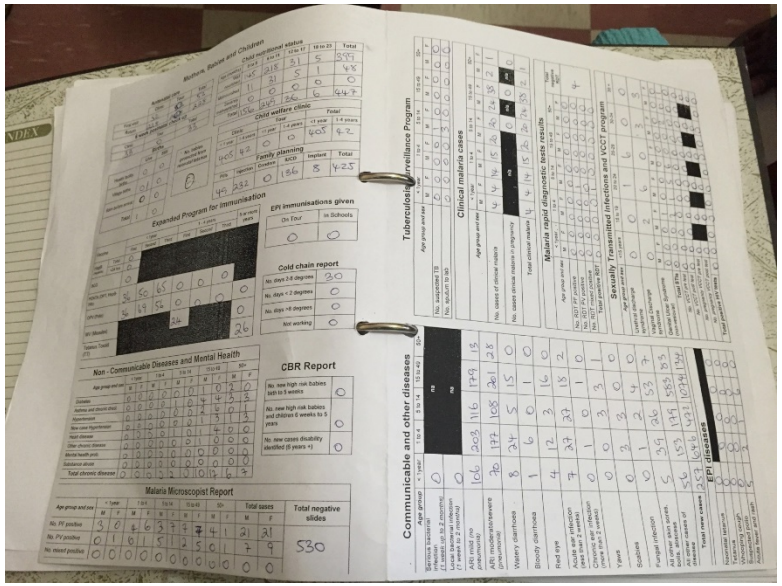
2. Indicators cont'd. Domains of measurement of HIS



Framework and standards for country health information systems / Health Metrics Network, World Health Organization

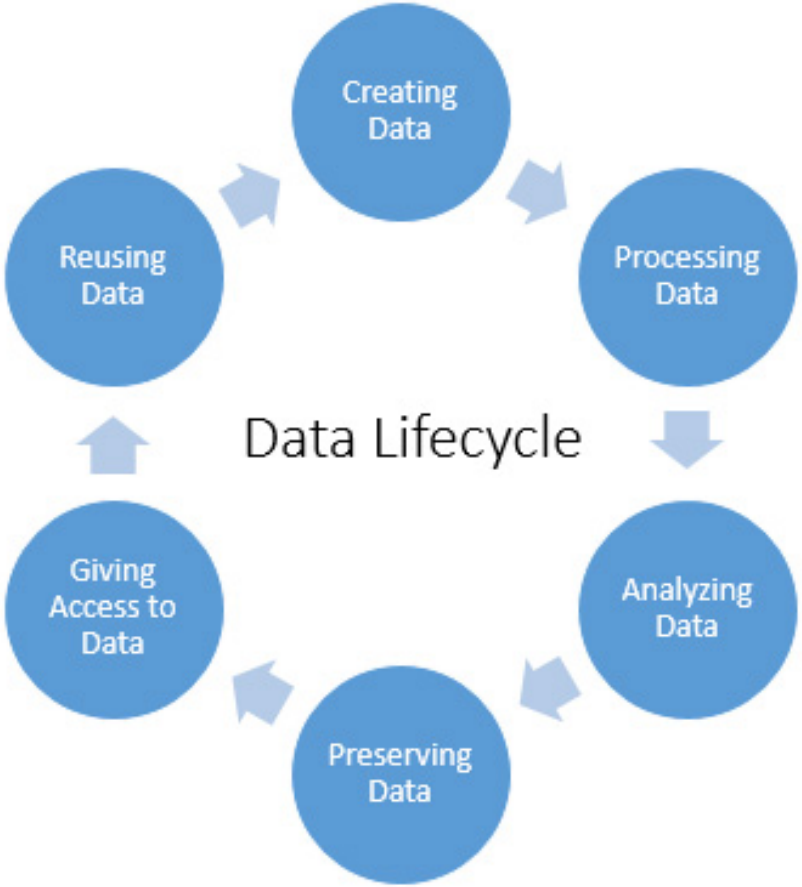
3. Data sources

- Two main categories:
  - population-based approaches (censuses, civil registration and population surveys)
  - institution-based data (individual records, service records and resource records)



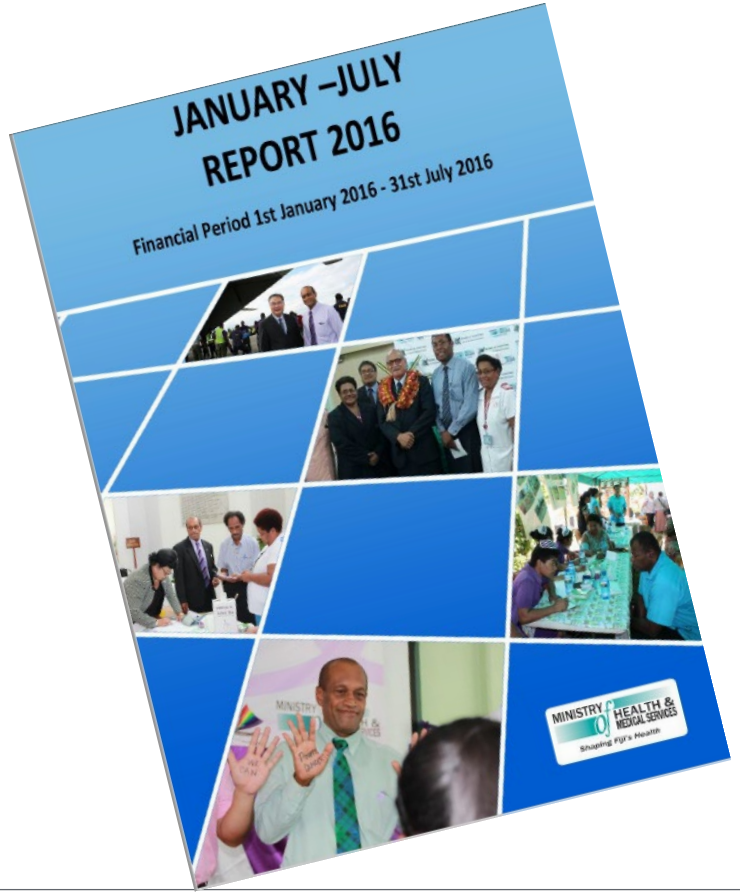
4. Data management

- Covers all aspects of data handling from collection, storage, quality-assurance and flow, to processing, compilation and analysis



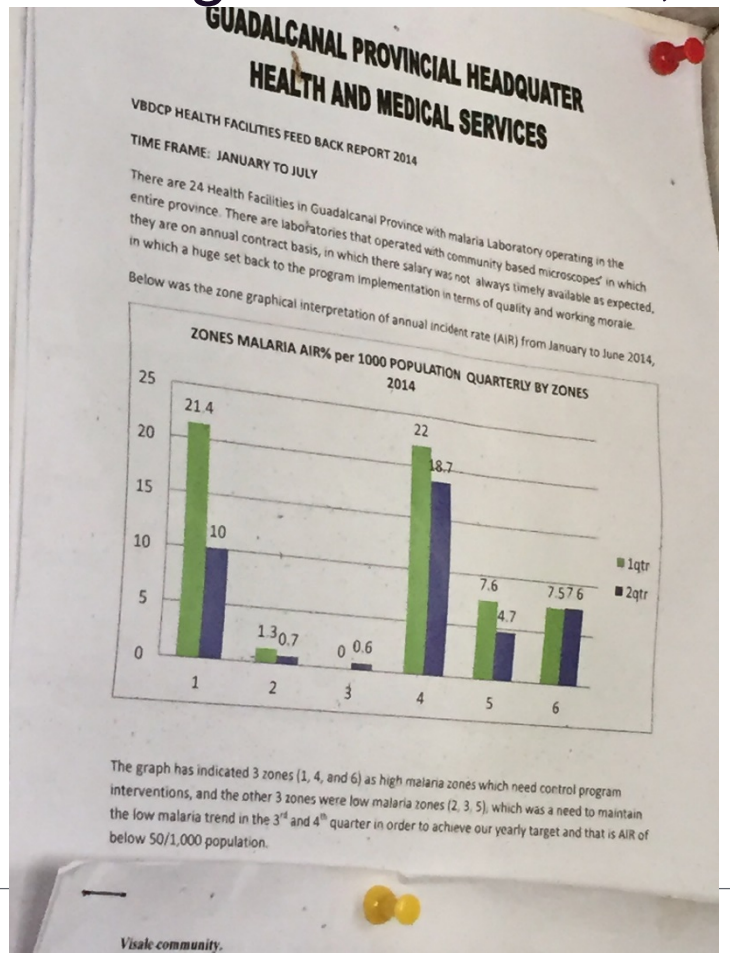
5. Information products

- Data must be transformed into information that will become the basis for evidence and knowledge to shape health action



6. Dissemination and use

- Making the data readily accessible to decision-makers and by providing incentives for, or otherwise facilitating, information use



GUADALCANAL PROVINCIAL HEADQUATER
HEALTH AND MEDICAL SERVICES

VBDCP HEALTH FACILITIES FEED BACK REPORT 2014

TIME FRAME: JANUARY TO JULY

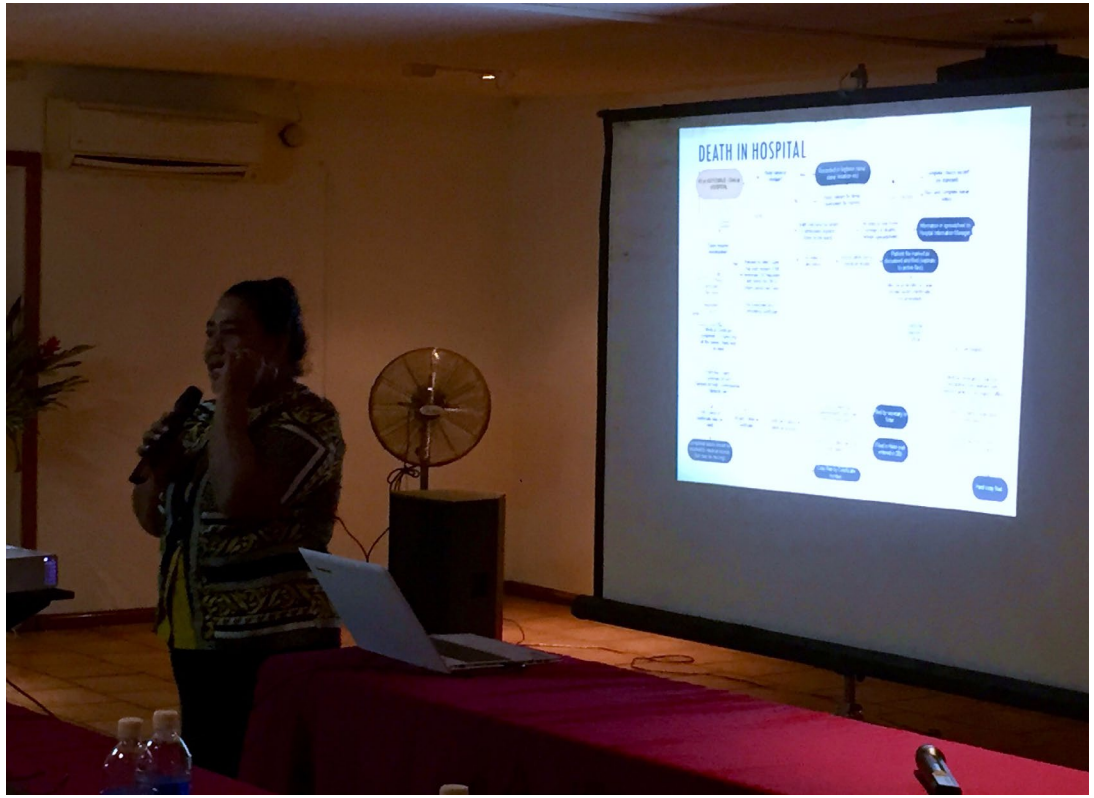
There are 24 Health Facilities in Guadalcanal Province with malaria Laboratory operating in the entire province. There are laboratories that operated with community based microscopes' in which they are on annual contract basis, in which there salary was not always timely available as expected, in which a huge set back to the program implementation in terms of quality and working morale.

Below was the zone graphical interpretation of annual incident rate (AIR) from January to June 2014,

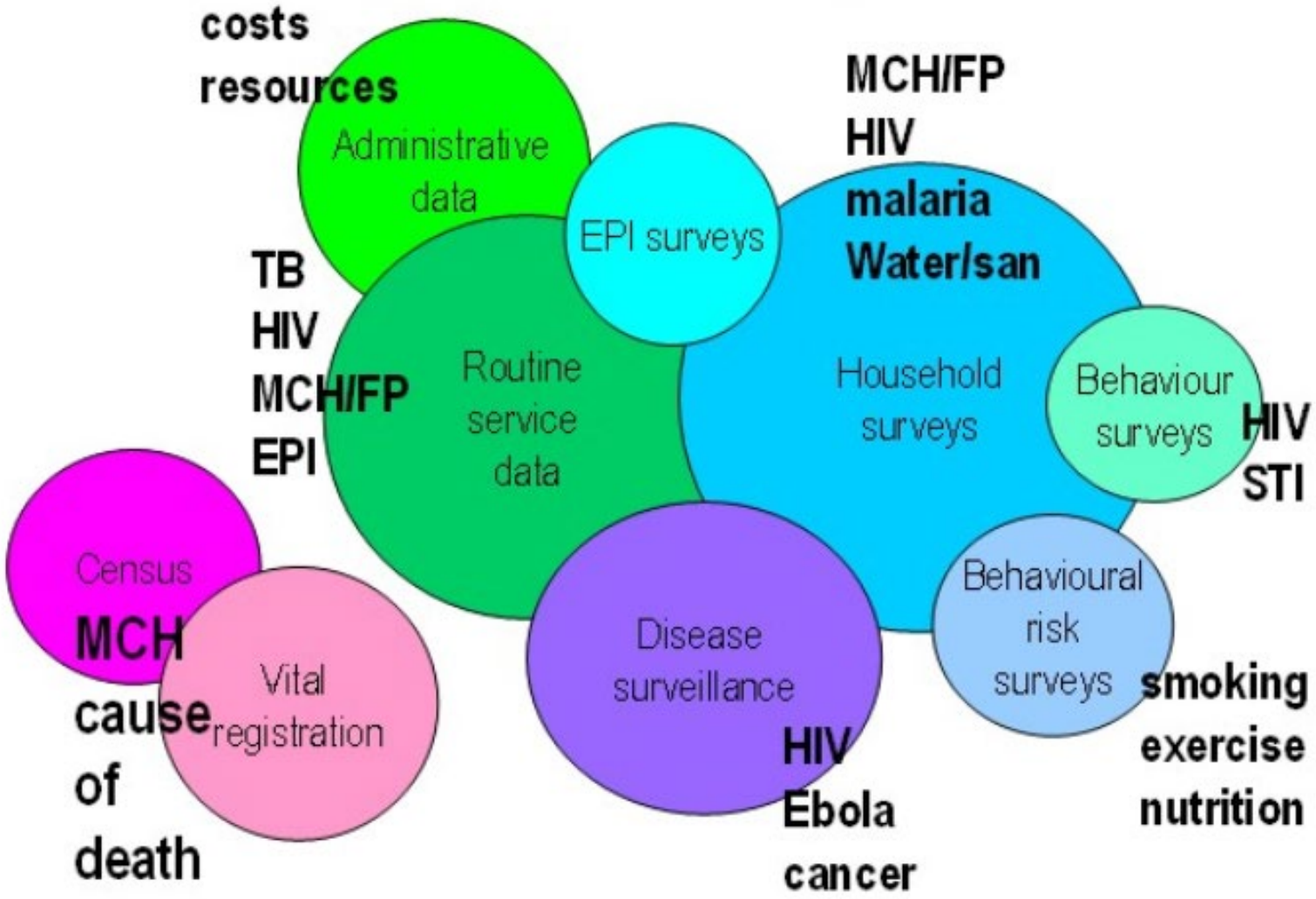
ZONES MALARIA AIR% per 1000 POPULATION QUARTERLY BY ZONES 2014

The graph has indicated 3 zones (1, 4, and 6) as high malaria zones which need control program interventions, and the other 3 zones were low malaria zones (2, 3, 5), which was a need to maintain the low malaria trend in the 3rd and 4th quarter in order to achieve our yearly target and that is AIR of below 50/1,000 population.

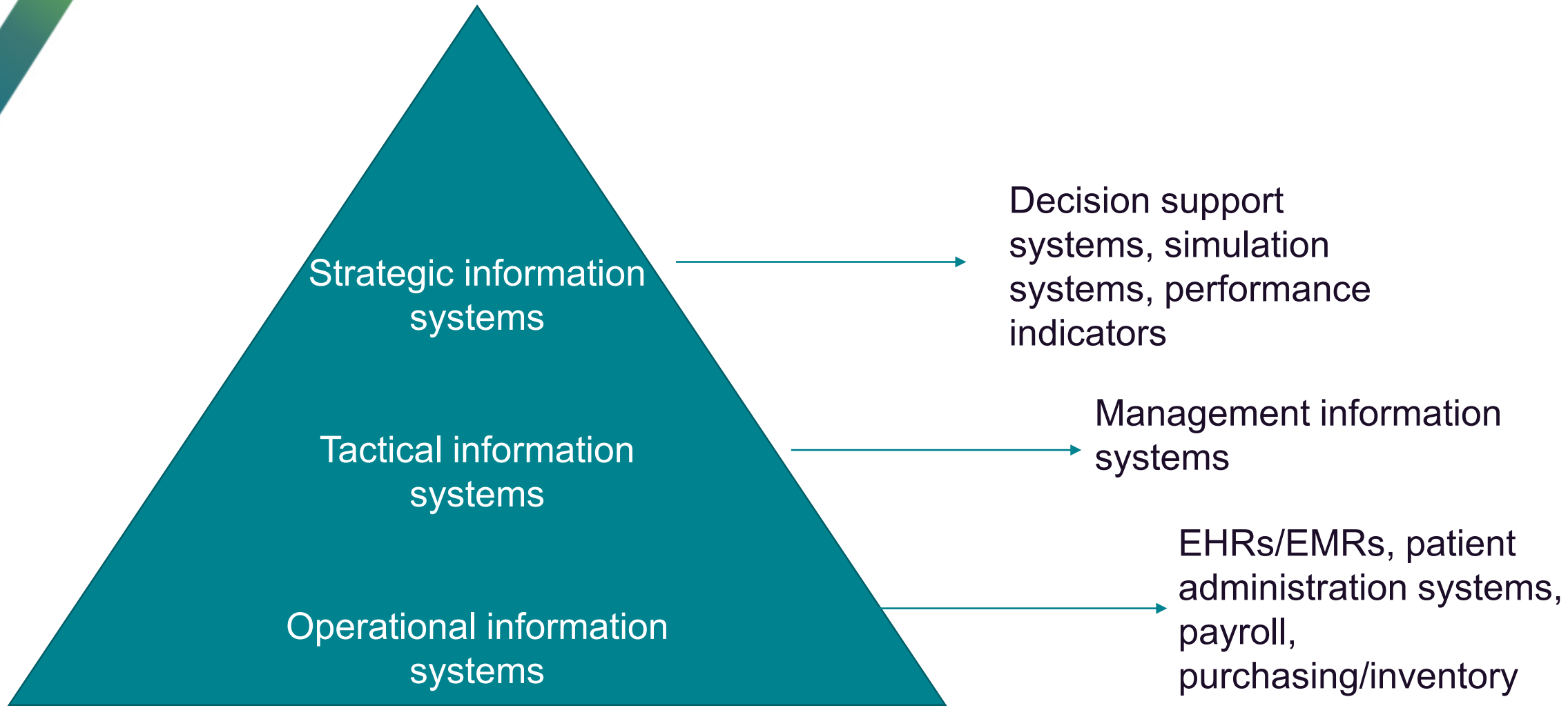
Visale community.



Health Information System (HIS) sub-systems rarely interact



Types of information systems



Where to from here? Can’t computerize a bad manual process!

It is not good enough to just ‘collect’ data - we must ‘use’ information

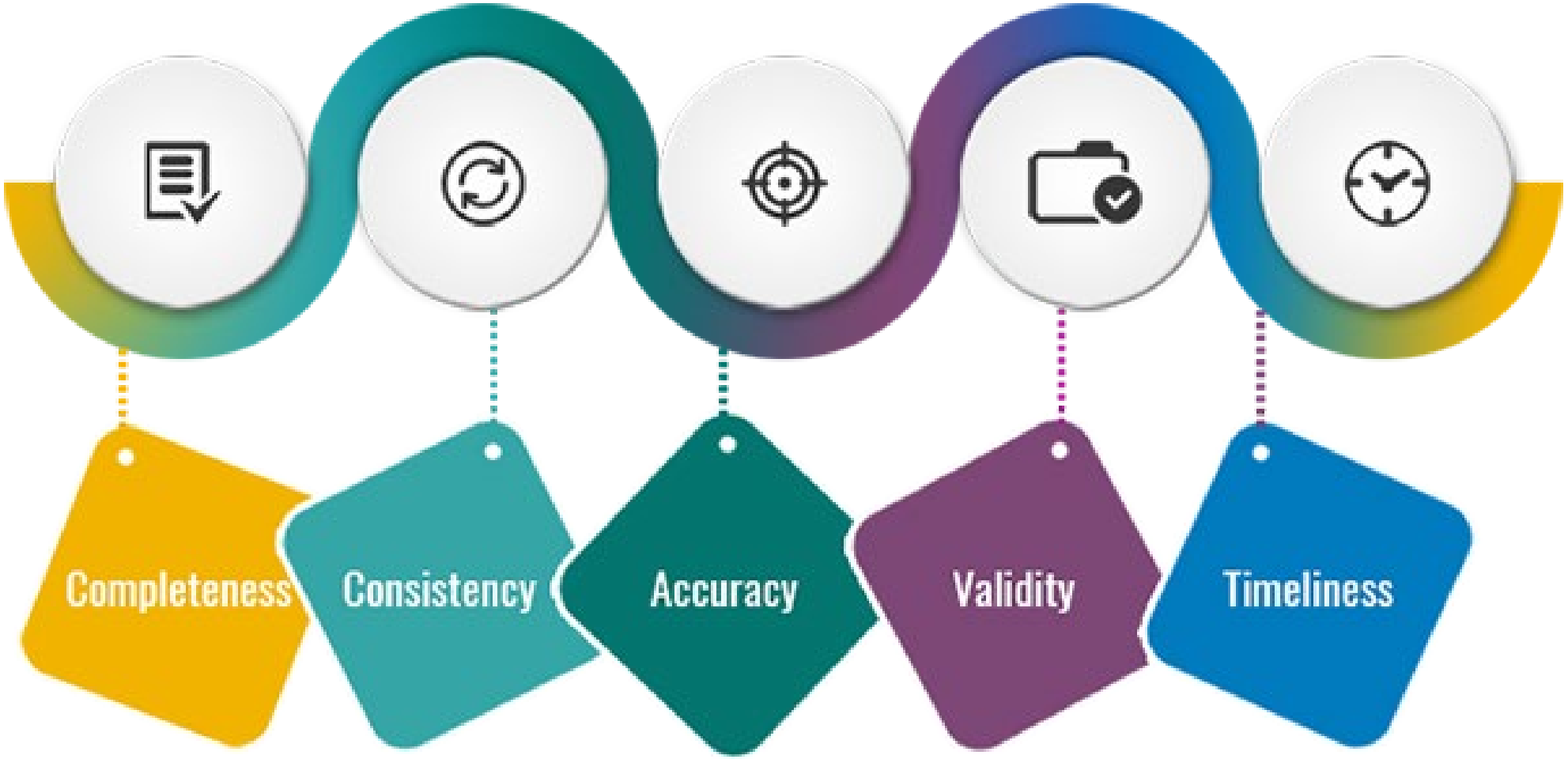
Intersect between HIS and digital technology

- Primary purpose:
  - Information, primarily about patients, in a way that is correct, and up to date, accessible the right people at the right time in a usable format
  - Knowledge to support diagnosis and therapy
  - Information about the quality of care, performance and costs
- Secondary purpose:
  - Improve data generation, compilation and exchange but will require the existence of clear data quality standards to be of optimal value

Digital technology can enable improved health care and outcomes but…

- Who will enter the data?
- How will it impact on current workflows?
- How will you make sure nobody is left behind?
- What is the quality of the data? Digital information sharing may support improvements in quality but could also expose poor record keeping
- How safe is the data? Promotion of information governance, privacy and security
- What are the benefits? Need for research focus on evaluation of impact on improved outcomes

Data quality



Data quality issues

DQ impact	Clinical scenario	DQ problem
Clinical	A letter of invitation for the follow up service or a check-up was sent to a patient who recently died from cancer	No date of death recorded
Clinical	Inability to manage patients with chronic diseases	Multiple identities
Clinical	Mismatch of patient's information	No single source of truth
Avoidable costs	Operational costs of data cleansing and manual data validation	High costs of duplicate processes
Service efficiency	Difficulties in inviting people for the service or follow-up	Contact details are missing or incorrect
Service efficiency	A new service was created or improved, but there is not enough utilization	Overestimation of the demand due to duplicate entries

Improving data quality

- Improvements in data quality and interoperability through adoption of clinical terminologies, unique identifiers and data standards
- Healthcare identifiers:
  - Identifiers for Individuals, Providers and Organisations
  - Ensures that the right information is associated with the right person

HIS mapping – sense checking the data

STI STATISTICS 2007

Months	Gono	Trike	Cand	Syph	Hp/B
JAN	7	6	1	1	2
FEB	7	9	2	0	0
MARCH	6	1	1	0	0
APRIL	3	2	3	0	0
MAY	0	4	0	0	0
JUNE	2	2	1	0	0
JULY	5	5	2	0	0
AUG	7	7	3	2	0
SEPT	5	4	1	0	0
OCT	5	9	3	1	0
NOV	8	5	2	0	0
DEC	0	0	1	0	0
Total	55	54	20	4	2

STI STATISTICS 2008

MONTHS	Gono	Trike	Cand.	Syph.	Hp/B
JAN	0	2	1	0	0
FEB	0	7	0	0	1
MARCH	0	8	2	0	1
APRIL	0	3	0	1	7
MAY	0	4	2	0	4
Total	0	24	5	1	13

Metadata standards important for comparative analysis – across all sources of data collection

- Metadata is ***"data about data"***
- A metadata record captures critical information about the content of a dataset - how data are defined, structured and represented
- Metadata allows data to be discovered, accessed, and re-used
- A metadata standard provides structure and consistency to data documentation
- Standards and tools vary – select according to defined criteria such as data type, organizational guidance, and available resources
- Use of standards enables data interoperability

Why secondary use of electronic health record data

- The data can provide a better understanding of:
  - the natural progress and development of diseases
  - evaluation of health care interventions
  - causes of disease
  - assessing equity of care
  - appropriateness of care
  - continuity of care
  - describing trends in health care utilization
  - efficiency and sustainability of the health care system
  - and change in health outcomes of particular population subgroups

Principles to follow

- Collect once, use many
  - Use the data collected by disease programs and add it to general management data
- Have a single source of truth
- Consider ‘respondent burden’ - KISS
  - Its better to collect less and get 100% response than ask for too much and only get 50% response
- Only collect as often as needed
  - How often is it used?
  - How long will it realistically take to see a change in the data?

Principles to follow cont'd.

- Only collect what you actually use
  - What decision will I make based on knowing this information?
- Consider local needs before global needs
  - Make sure data is useful for management and planning
- Consider how to get the best answer to the questions that need answering
  - e.g. how is it best calculate to find out about contraceptive prevalence rate?
  - Survey vs regular data collection