STRENGTHENING THE HEALTH MANAGEMENT INFORMATION SYSTEM IN AFRICA

PRESENTED BY THE DEPARTMENT OF HEALTH STUDIES. UNIVERSITY OF SOUTH AFRICA

Define tomorrow.

UNISA college of human sciences

Introduction

- This is the second in the OER series on health management information systems (HMIS) in Africa presented by the Department of Health Studies.
- It follows the introductory series shown in: http://hdl.handle.net/10500/24426
- This Open Educational Resource (OER) presents organisational, behavioural and technical determinants of the performance of Routine Health Management Information Systems (RHIS).

ORGANISATIONAL DETERMINANTS

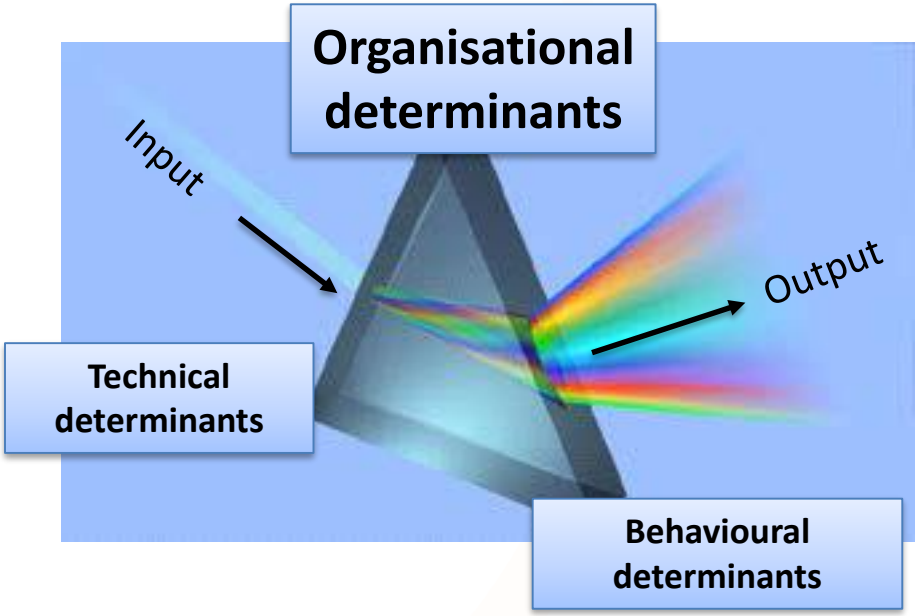
Conceptual framework

Organisational factors (determinants) are presented in the PRISM framework to illustrate its relative relationship towards behavioural and technical determinants.

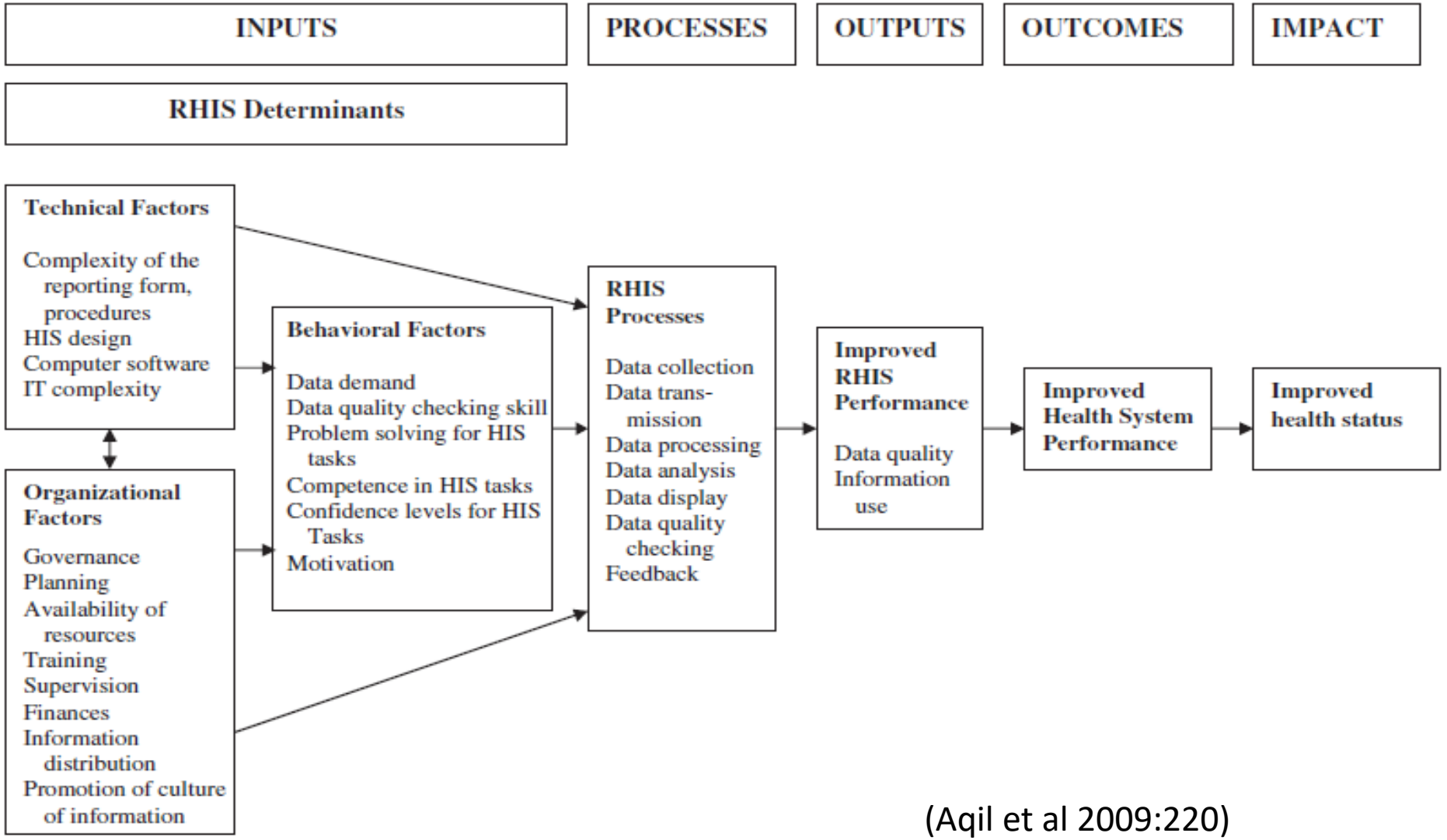
Read more in the article by (Aqil, Lippenveld, & Hozumi 2009:219)

https://academic.oup.com/heapol/article/24/3/217/567261

The PRISM Framework



Organisational determinants



(Aqil et al 2009:220)

Video of South African Health information system

This video covers Routine Health Information System. It also addressed Organisational determinants starting from obtaining information and how it is disseminated in South Africa.

https://www.youtube.com/watch?v=0Kr72Tjl1zY

Some thought provoking questions

- Governance: How is HIS regulated and implemented in your own country?
- Planning: Who are the key stakeholders ? What are their roles?
- What is the difference between data collections and data capturing?
- Resources: Which tools are used for data capturing. Paper-based or electronic?

Some thought provoking questions

- How is the information culture inculcated in your facilities?
- What support structures exist in your facility to ensure effective data management processes?
- How is information on performance of the HIS communicated? Feedback mechanisms employed?

Some thought provoking questions continuation

- Is there a culture of and capacity for using HIMS in South Africa?
- Is there an existing policy? Refer to the link as attached
- *https://www.wits.ac.za/media/migration/files/cs-38933.../sahr2011.pdf*

What do you think?

- What should be done to strengthen organisational determinants mentioned in the previous slides?

https://etd.uwc.ac.za/xmlui/.../Bessick_jr_mcom_ems_2017.pdf?...1...y

Reflect on the RHIS in your field of practice

- Use the organisational and behavioural assessment tool to evaluate the RHIS in your practice (OBAT)

  (Aqil et al. 2009:224).

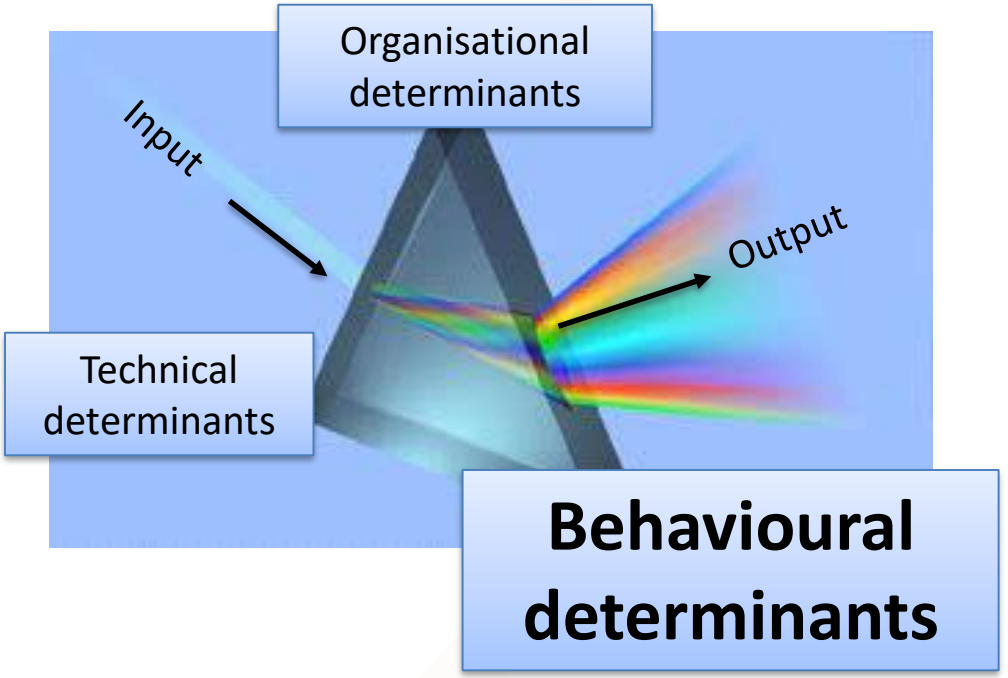
BEHAVIOURAL DETERMINANTS

Introduction of behavioural determinants

Behavioral factors (determinants) are presented in the PRISM framework to illustrate its relative relationship towards technical and organisational determinants.

The following slides focus on the behavioural factors.

The PRISM Framework



Continuation of behavioural determinants

- Behavioural factors refers to the manner in which the people collect and use the data. Their knowledge, skills, attitudes, values and level of motivation are therefore essential to consider when optimising the performance of a RHIS.

Continuation of behavioural determinants

- Behavioural factors can directly or indirectly affect the RHIS processes and ultimately affect the quality of the data, the reports and the health status of communities. Refer back to the diagram from Aqil et al 2009:219 to explain one such example (e.g. attitude towards the data capturing system)

Reflect on the RHIS in your field of practice

Read the article by Ahmadian et al. 2017:4625-4630 and identify the behavioral factors that influenced the Health Information System at these hospitals.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5557144/pdf/epj-09-4625.pdf

Continuation of reflection on RHIS in your field of practice

- Click on the link to watch a video on an example from South Africa.

https://www.youtube.com/watch?v=0Kr72Tjl1zY

Reflect on the video:

- What is the importance of a good functioning RHIS?

Continuation of reflection on RHIS in your field of practice

- Who are the role players that could affect the quality of the RHIS reports?
- What are the key competencies required in effective data management?
- How do attitudes influence data management processes in your own facility?
- What strategies are used to motivate staff to generate complete, accurate and reliable data in your unit?

Continuation of reflection on RHIS in your field of practice

- Several tools have been developed to measure the various factors affecting the performance of a RHIS.
- The following is a training resource to use these tools:

https://www.measureevaluation.org/resources/tools/health-information-systems/prism/prism-training-kit-session-7

Continuation of reflection on RHIS in your field of practice

- A survey has been conducted from 161 health information personnel in 58 health facilities and 2 district offices in South Africa. Searchfor the article by Nicol, Brashaw, Phillips and Dudley (2013:788-792) at DOI: 10.3233/978-1-61499-289-9-788 and critical reflect on their use of the modified version of the PRISM's self-administered Organisational and Behavioural tool (OBAT).

TECHNICAL DETERMINANTS

INTRODUCTION TO TECHNICAL DETERMINANTS

- Information technology is an engine for the development of health information systems
- It requires software, hardware and good command of IT knowledge and skills from the user

Continuation Technical determinants

Routine health information system relies on the complex interactions between people, processes, environment and technology.

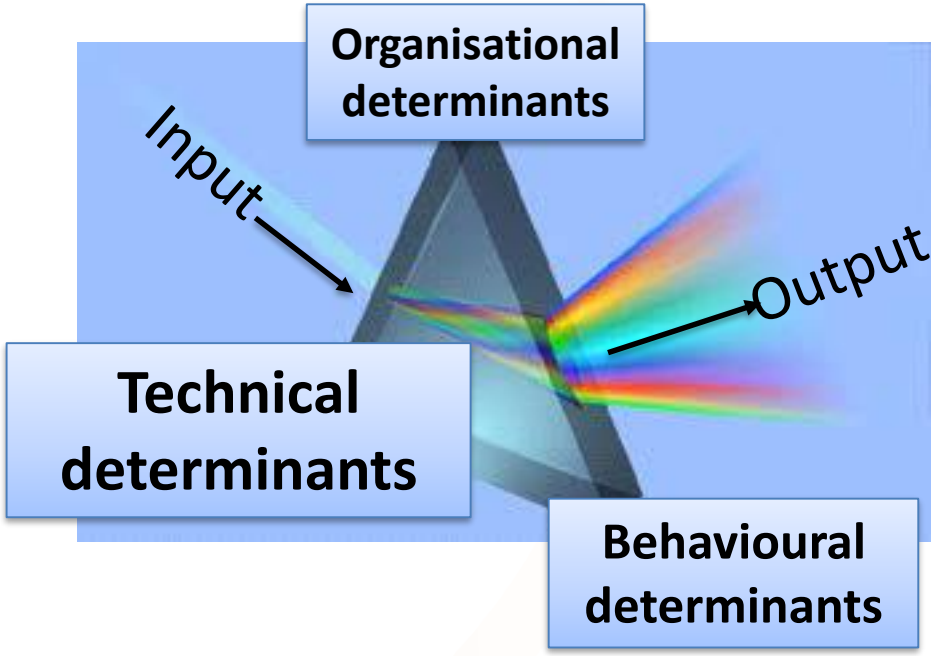
The following slides focus on the technical determinants as depicted in the PRISM framework

Read more in the article by

Aqil et at. 2009

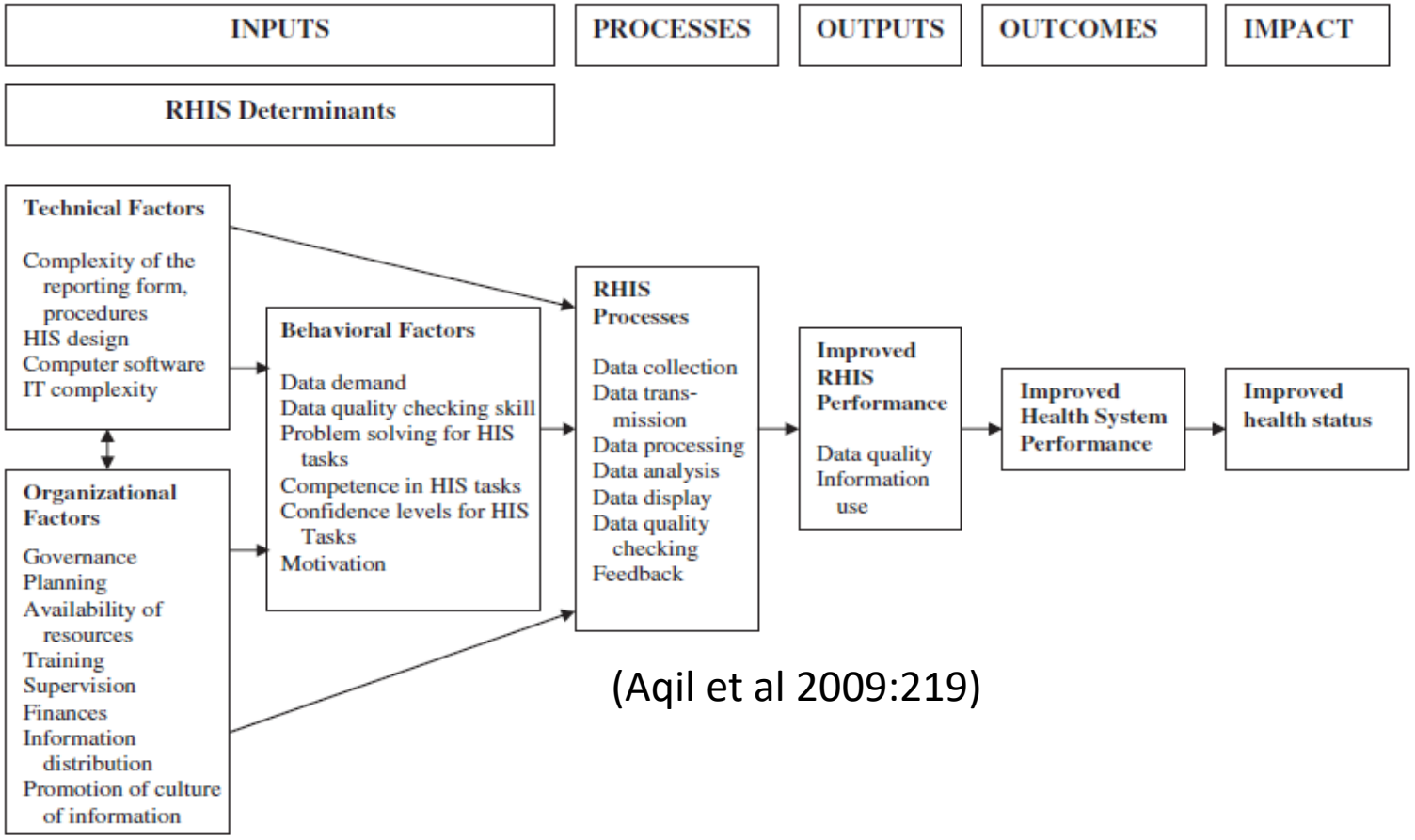
https://academic.oup.com/heapol/article/24/3/217/567261

The PRISM Framework



Continuation of Technical determinants

The technical factors is an input component with direct influence on the process component and ultimately on the outcomes and



(Aqil et al 2009:219)

Note: Technical determinants forms part of the input process

Technical determinants: Components

- IT software
  - Programme or system development, IT servers and technical support by IT specialists
- Internet connectivity
  - Watch the video to understand the Internet
  - https://www.youtube.com/watch?v=7_LPdttKXPc
  - Broadband: DSL; fibre-optic, cable, satellite
- IT hardware
  - Computers, tablets, smart phones

Technical determinants: HISP

- Who is HISP? Open the link below to learn more about them as developers of the DHIS
  - https://www.hisp.org

- The latest version used in South Africa is Web-DHIS2. This software programme contains the health indicators as on the tick registers used in the health facilities

Technical factors: HISP in South Africa

- Learn more about the tick registers and reports completed by health professionals in PHC facilities and hospitals. Open the following link for information and refer to the Annexures.
- https://www.hst.org.za/publications/NonHST%20Publications/Facility_Level%20DHMIS_SOPs.pdf
- Data on these registers are captured on DHIS2 by data capturers and clinicians, where there are no data capturers

Technical determinants: Inter-operability with other electronic health systems in South Africa

The link below will take you to the NDoH South Africa. Familiarise yourself with the different National Health Information systems (NHISSA) for example:

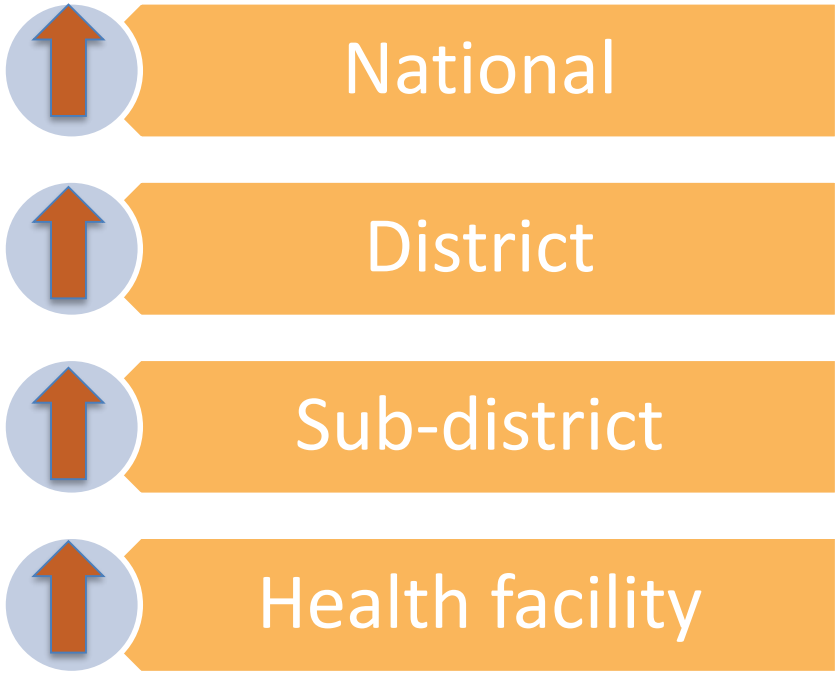
- eConnect
- eTick registers
- Tier.net (refer to TB & HIV)
- MomConnect

www.health.gov.za/index.php/nhi/category/293-nhissa?

Data from these systems is interoperable with the DHIS2

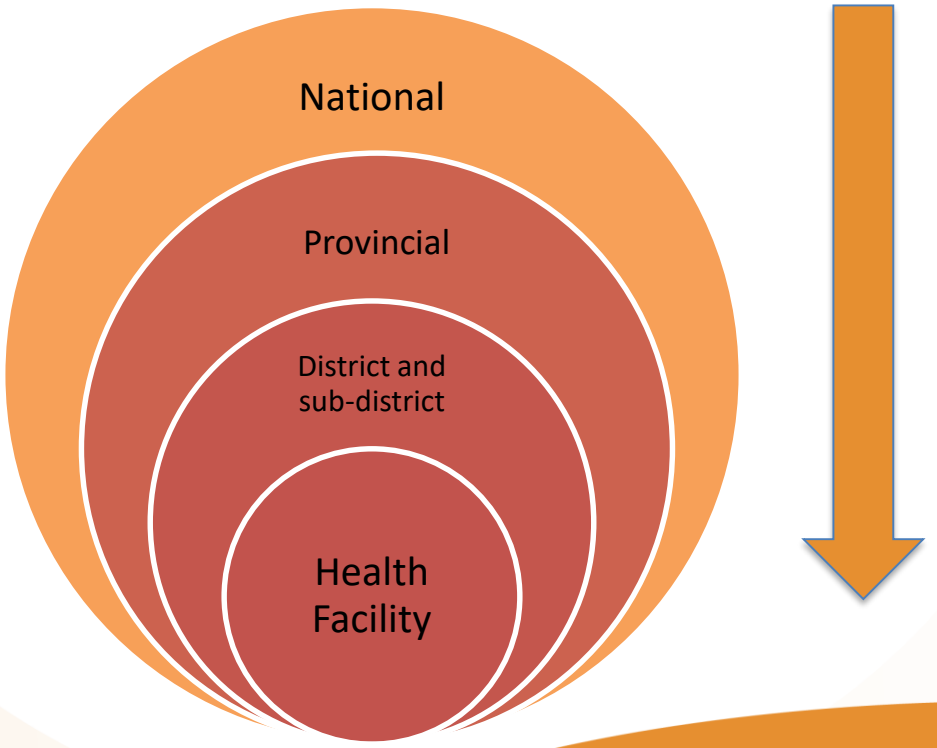
Technical determinants: DHIS flow of data

Are you familiar with the route of data submission?



Technical factors: DHIS flow of feedback

- Once data is processed and analysed the findings reported can be used by authorities to make decisions on all levels of health care:



DHIS2 TOOL USE IN AFRICA

- The value of electronic health information tools are illustrated in the following videos

https://www.youtube.com/watch?v=BGl3Md19Qkc

https://www.youtube.com/watch?v=gFnnNWC55Iw

Technical related challenges in use of electronic DHIS

- IT and systems
- Does the programme include the relevant indicators to allow for comprehensive reporting?
- Are the necessary software tools installed and maintained?
- Are the Internet data allocation sufficient to ensure optimal use of the system?

- Are there built in mechanisms to warn the user of incomplete data fields?
- Are technical assistance available to assist and address possible challenges?
- Are health professionals skilled and updated on the use of the relevant tools?

Technical related challenges in use of electronic DHIS

Equipment

- Are tally sheets and registers available
- Are computers available?
- Are computer software updated to use latest?
- Are electricity available and stable?

Technical related challenges in use of electronic DHIS

Human resources: Health professionals (this relates to the behavioural factors)

- Do clinicians understand the importance of accurate completion of tick registers?
- Are manual tick registers completed accurately and on time?
- How does the facility manager monitor the transfer of data to the DHIS?
- How does the facility manager validate data for completeness and accuracy?

Technical related challenges in use of electronic DHIS

Human resources: Data capturers

(this relates to the behavioural factor)

- Do the health facility have data capturers?
- Do the capturers understand the importance of their work?
- Are data capturers trained to operate the soft ware program?
- Are data capturers skilled to accurately transfer paper data to the computer?

Reflect on the RHIS in your field of practice

- Identify possible technical challenges or weakness in the system you are currently using. Open the following link and download the free full text article.
- https://www.ncbi.nlm.nih.gov/pubmed/28848639
- You may find the dimensions and criteria of system challenges as depicted in Table 2 of the journal article useful

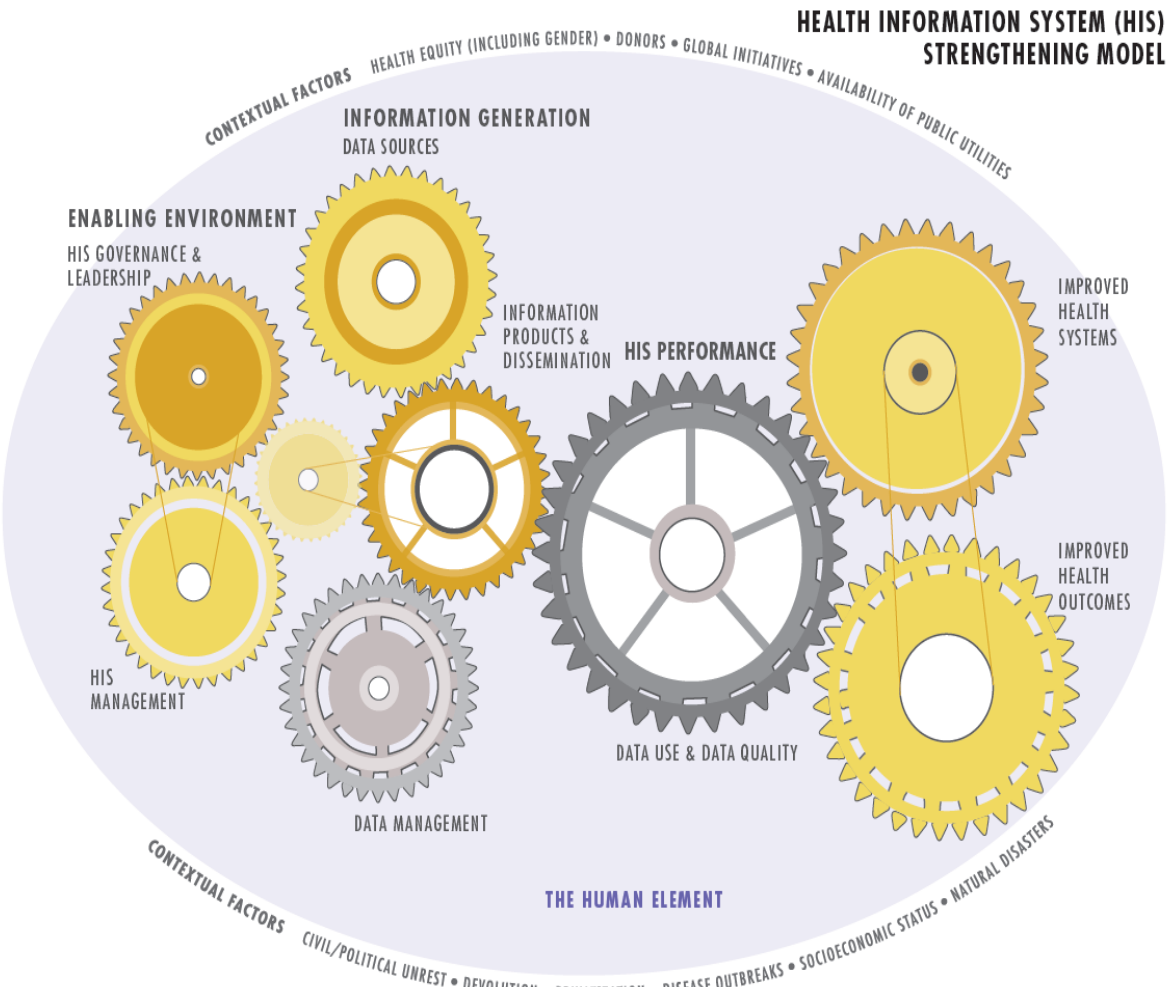
Generating solutions

In terms of the weaknesses or challenges you have identified, where do they fit into the entire process of the health information system strengthening model as depicted in the diagram?

Can you identify solutions to improve those weaknesses and get the wheels moving to improve the quality of data and frequency of data use?

Use the link to access a variety of PRISM tools to assist in designing, strengthening and evaluating RHIS performance

https://www.measureevaluation.org/resources/tools/health-information-systems/prism



Source: MEASURE Evaluation. 2017. Chapel Hill, NC: MEASURE Evaluation, Carolina Population Center, University of North Carolina.

Reflect on the RHIS as in your practice field

- What are the resources needed to ensure an effective RHIS?
- Are relevant policies and SOP’s in place and enforced?
- What are the organizational challenges you experience?

Continuation of reflection on RHIS in your practice field

- Who takes overall responsibility for operating the RHIS?
- Identify the necessary skills needed by different role players involved in the RHIS
- How are the findings used in the operational planning of the health facility?
- What are the challenges you experience in terms of behavioural factors?

Continuation of reflection on RHIS in your practice field

- Are the software user friendly?
- Are data available and stable?
- Does the programme allow for feedback on findings on all levels of health care?
- What are the challenges you experience in terms of technical factors?

CONCLUSION

- Collecting, reporting, analysing and interpretation of routine health information is crucial for the planning and implementation of effective and relevant health services. The organisational, behavioral and technical determinants are directly and indirectly related and equally imported to ensure accurate, timely and complete health information.

ATTRIBUTIONS

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- Aqil, A., Lippenveld, T. & Hozumi, D. 2009. PRISM framework: a paradigm shift for designing, strengthening and evaluating routine health information systems. *Health Policy and Planning*, 24, 217-228. Online Open Access[2]

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3 MEASURE Evaluation is funded by the U.S. Agency for International Development (USAID) through cooperative agreement GPO-A-00-03-00003-00 and is implemented by the Carolina Population Center at the University of North Carolina at Chapel Hill, in partnership with Futures Group, ICF International, John Snow, Inc.,

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Management Sciences for Health, and Tulane University. The opinions expressed are those of the authors and do not necessarily reflect the views of USAID or the U.S. government

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