



# Information for Decision Making

**Vimbai M. Hungwe**, President

Association for Health Information and Libraries in Africa - AHILA

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EBM will enable faster, timely and inexpensive clinical decisions and also increase the number of patients a doctor can see per day..... EBM boosts the confidence of doctors in making decisions ( Nwagwu, 2008)

“Good practice is a combination of both expertise and good evidence. But **where** is the **evidence**? **No journals, no clinical summaries, no guidelines**”. (Nwagwu, 2008)

# What is a Decision?

- A choice or judgement that you make after thinking and talking about what is best thing to do (Oxford Dictionary 7<sup>th</sup> ed.)
- A decision is an irreversible choice among alternative ways to allocate valuable resources

# Decisions!

- Decision making is an everyday event
- Decisions are not always easy
- Sometimes decisions are elusive and sometimes they don't get made
- Decision making is art and science!



# Data

- A collection of facts
- Could be in the form of:
  - Numbers
  - Text
  - Images etc

Can be interpreted or processed by humans or machine to give meaning

# Information

- Information is data in usable form
- Information is result of data that have been analyzed and interpreted for decision making
- $\text{Data} + \text{analysis} = \text{information}$

# Decision Making & Information

Decision making is therefore the process of deciding about something and information plays a key role in this process



# Information qualities to look for:

- Relevant
- Up-to-date
- Accurate
- Meet the needs of the user
- Reliable
- Right format
- Worth the cost

# Examples of use of information

- **Health situation & trend analysis** : data on morbidity, disability & mortality
- **Forecasting** : projections, new trends, preventing epidemics, etc...
- **Surveillance** : health observatories including epidemic diseases, food safety

# Use of information

- **Management and planning** : data for decision making,
- **Policy development** : evidence- based policies and strategies

## Power of Information – driving more effective and efficient healthcare delivery

**80% of physicians changed their care as a result of evidence\* as follows:**

- Avoided hospitalisation in 12%**
- Reduced overall length of stay in hospital in 19%**
- Changed diagnostic tests in 51% and drug choices in 45%**
- Avoided additional tests or procedures in 49%**

\* Marshall J G. *The impact of the hospital library on clinical decision making: the Rochester study*. Bull Med Libr Assoc. 1992 April; 80(2): 169–178

## Lack of Information and knowledge

**Tens of thousands of people die every day, often for the simple reason that the parent, carer or health worker lacks the information and knowledge they need to save them ([www.hifa2015.org](http://www.hifa2015.org))**

# What makes a health care decision hard?

- Complexity
- Dynamic effects
- High stakes
- Unclear alternatives
- **Uncertainty including limited / lack of information**

But.....

Isn't the provision of health information the most cost-effective approach to our health care problems which can reap huge positive results?

# We need:

A good health information system that ensures **timely, available, reliable, good quality and comprehensive data and information** for decision-making.



# Health Information Systems.....

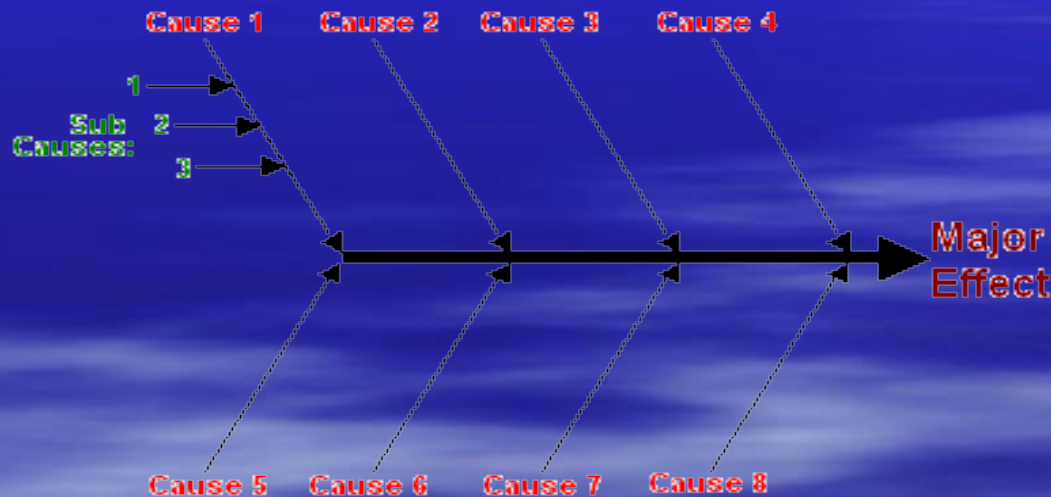
- “...a combination of people, equipment and procedures organised to provide health information to health workers and others in a way that enables them to make informed decisions”(Boerma,1991).

How do we use information to influence our decision?



# Defining problem

- What is issue to be covered?
- What is the problem?
- What decisions need to be taken?



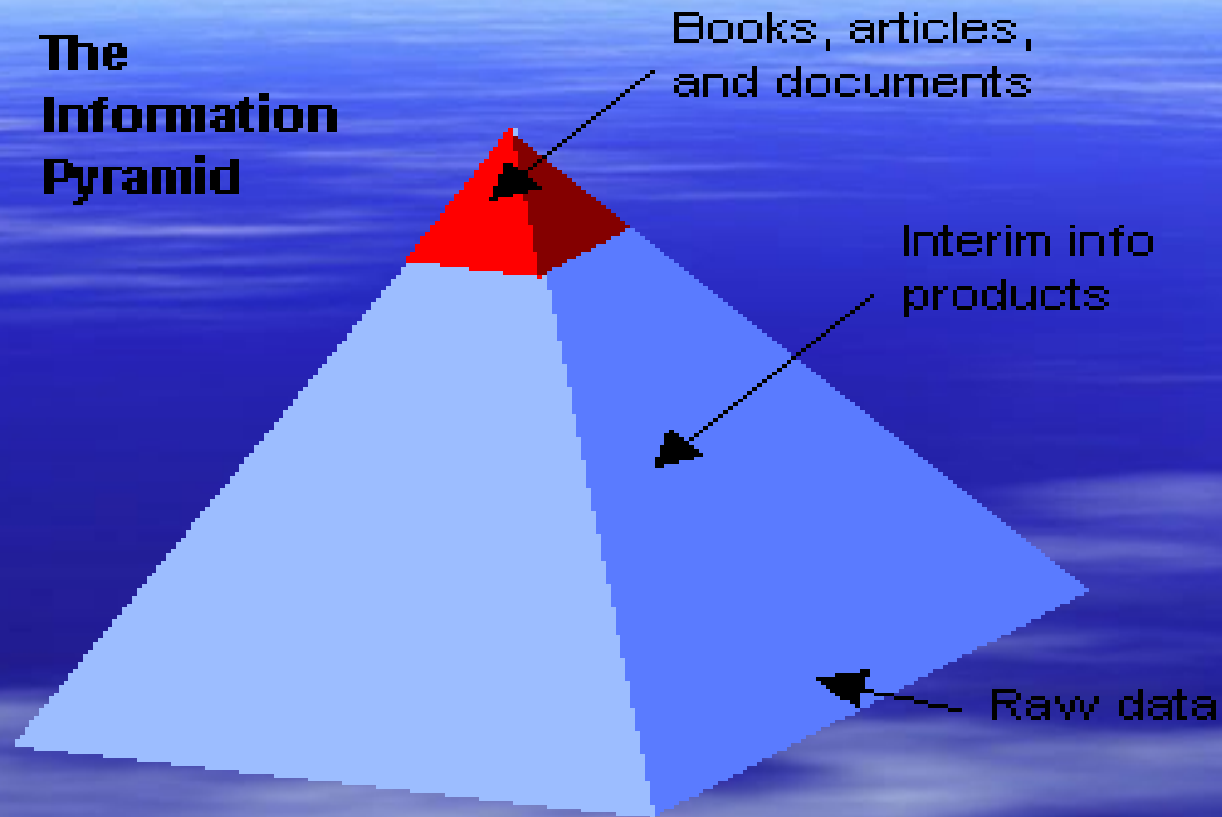
(Hari Srinivas)

- For each of the causes and effects list info and data that will be required

# Finding information

- What information is needed?
- Where can you get that information?
- Which aspect of the problem will it help
- Which source can provide best information
- In what format?
- Evaluate sources to see which of them provides the best information

## The Information Pyramid



NB: you can have unrecorded information in form of experiences and insights

# Four states of information possession

|                                     |   |
|-------------------------------------|---|
| Information you know you have       | Information you don't know you don't have |
| Information you don't know you have | Information you know you don't have       |

# Processing the knowledge

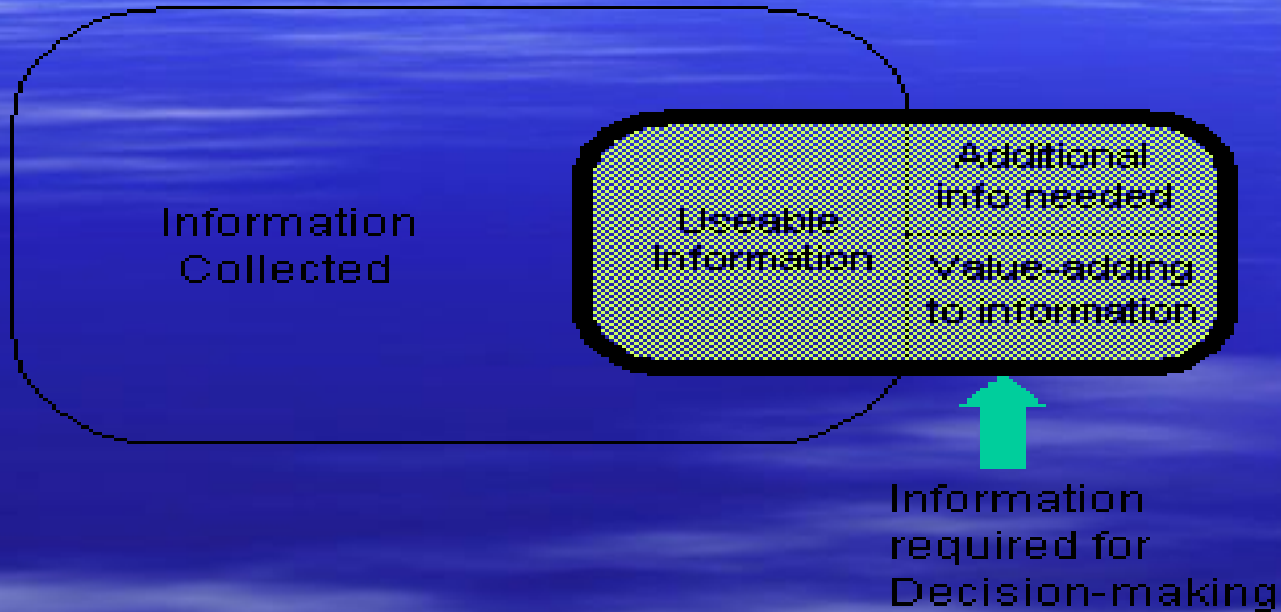
- Extract and organise information from the various sources
- Which parts from the collected information needs to be used
- Is there any additional data or information needed?
- Present the information in the best possible way that will help you understand situation and make a decision

# Processing the knowledge

- Collected information is evaluated and integrated for its:
  - relevance
  - validity
  - interconnectedness



# Processing the knowledge



# Taking the decision

- Involve all concerned parties (interactive and inclusive process )
- Form opinion from information for its efficiency and effectiveness
- Did the decision solve the problem?
- You may need to revisit the decision over time and refine to meet changing needs

# Taking the decision



# Decision Support Systems

- computer-based information systems including knowledge-based systems that support decision-making
- Clinical DSSs are typically designed to integrate a medical knowledge base, patient data and an inference engine to generate case specific advice [Wyatt J, Spiegelhalter D, 1991]

# We have a challenge in Africa:

- Promote a culture of information based decision making
- Information often the forgotten “budget line”
- Need for political support/ will

# Role of the Information Professional

- Advocate for recognition of health information as an essential part of the health care system
- Already possess advanced online searching skills, rapid document retrieval and delivery services, and up-to-date knowledge of the world's medical information resources and networks (Haines, 1999)
- Become a partner in the decision making process

Thank you!