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Swiss Tropical and Public Health Institute
Schweizerisches Tropen- und Public Health-Institut
Institut Tropical et de Santé Publique Suisse

Associated Institute of the University of Basel

Swiss Centre for International Health
Health Systems Support Unit

Swiss TPH Spring Symposium 2018

Decision Support and Health Information Systems: Potential and Pitfalls

Context adapted Approaches to Data Collection and Knowledge Production

Helena Greter

"***Effective use of information is the foundation of modern public health practice***" (CDC)

"Quality of Life through Quality of Information"

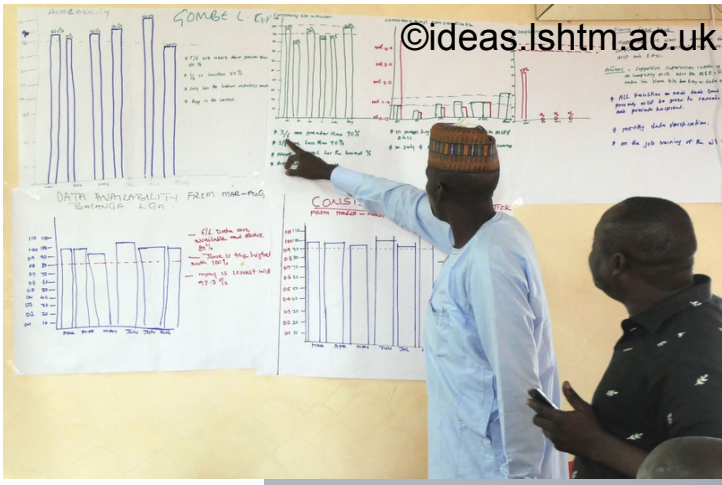
(Medical Information Congress theme 2012)

"***Healthcare is about information***"

(Concepts for a Personal Health Record)

This highlights the importance of **how the information is gained**, and how crucial it is to obtain **quality data**.

Obtaining quality information



1. Data

- Availability: paper records, data base
- Access: to available data or to a population

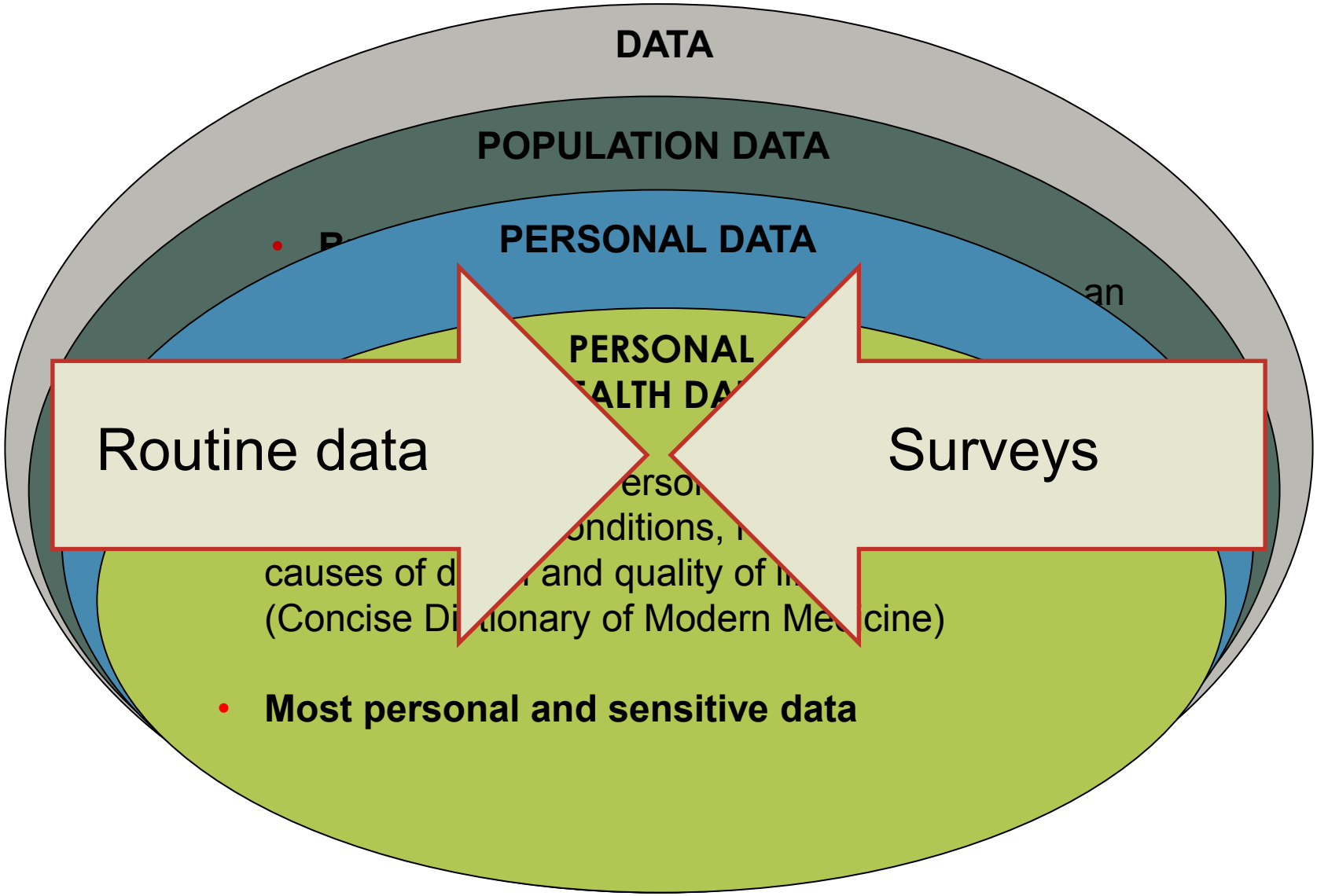
2. Data collection

- Data quality
- Data security

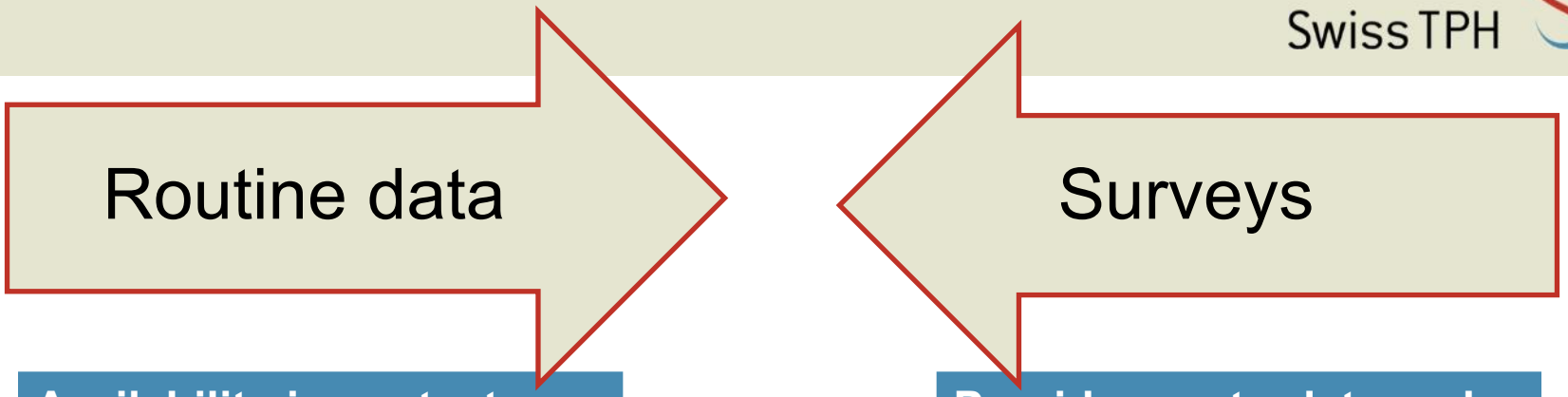
3. Knowledge production

- Analysis and interpretation
- Dissemination

The concept of personal health data



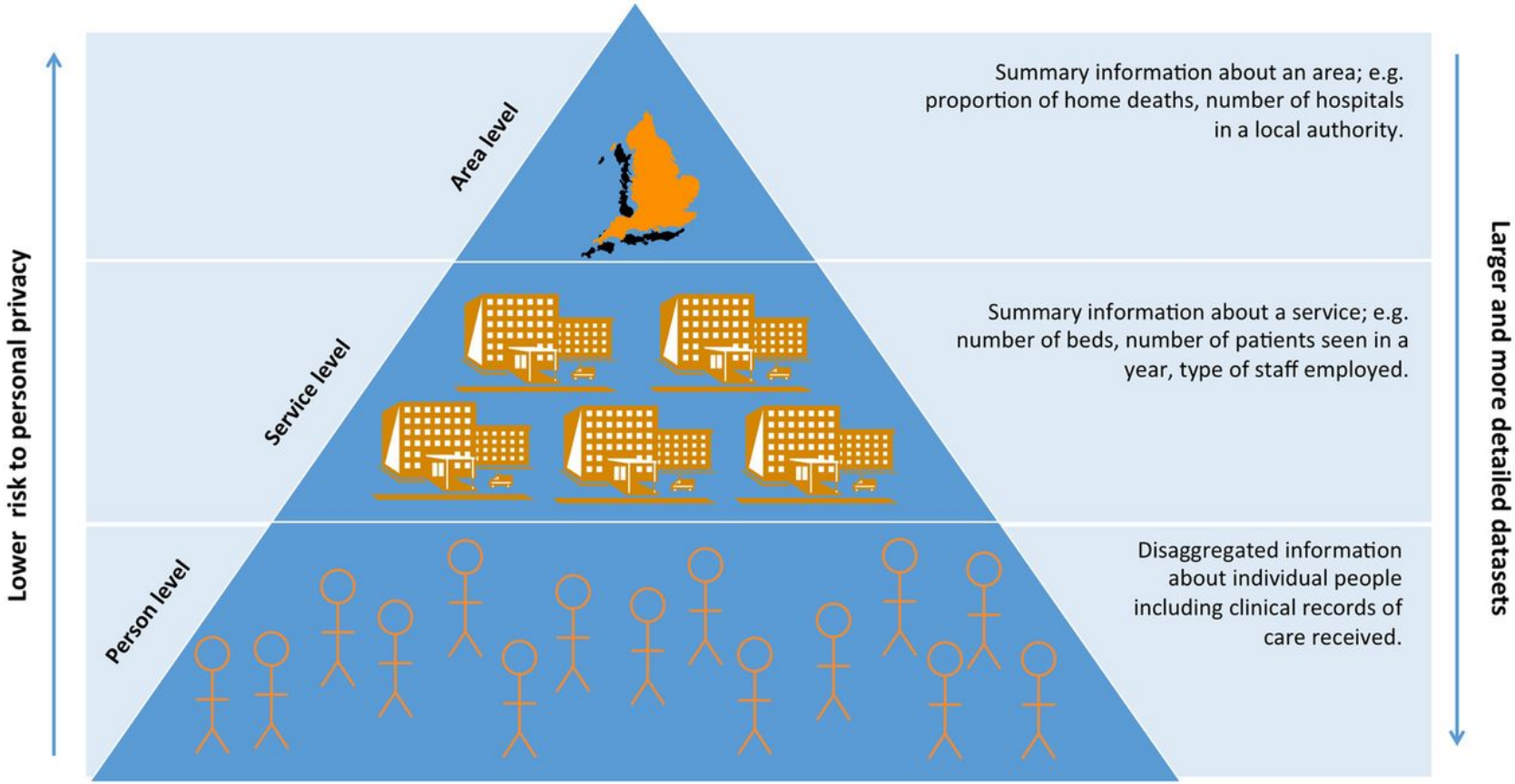
- **Most personal and sensitive data**



Availability is context dependent	Provides up-to-date and targeted data
Readily available at low cost	Representative of the study population through random sampling
Useful for initial assessment or identifying hypotheses	Point-in-time Up-to-date data
Coverage: non-random sub-sample of a population	Targeted information on defined variables
Not always up-to-date, Can be politicalyl influenced and manipulated	Effort to collect data: time consuming and costly

Routine Data Collection

Reliable and accurate public health information is essential
for monitoring health and for
evaluating and improving health-care services and programmes.



Joanna M Davies et al. BMJ Support Palliat Care
doi:10.1136/bmjspcare-2015-000994
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Survey data collection tools

Types of data collection tools	
Paper based	• Face-to-face interview • Telephone interview • Questionnaire by mail
Computers replace paper	• CATI • CAPI (ODK)
Computers replace interviewers	• Self-administered Questionnaires • CASI (online surveys)

Survey essentials:

- Rigorous questionnaire design and **pre-testing in the very context**
- Skilled and well-trained interviewers

Data collection using CAPI: Advantages

Interviewer

- Better guidance through the questionnaire

Supervisor and survey coordinator

- Close surveillance of interviewer performance
- Real-time availability of data

Interviewee

- Perception of CAPI is context dependend:
- increased confidence as data seems more secured

Data collection using CAPI: Acceptability

Data quality

How does the survey tool influence data quality?

PAPI vs **CAPI**: Paper assisted vs tablet assisted personal interview:

✓ Less errors	Paper: 17% (accuracy)	Tablet: 2% (completeness)
✓ Reduced duration	Paper: 9.4 min	Tablet: 8.3 min
✓ Lower costs	Total survey costs 19% lower when using tablets	

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ORIGINAL ARTICLE

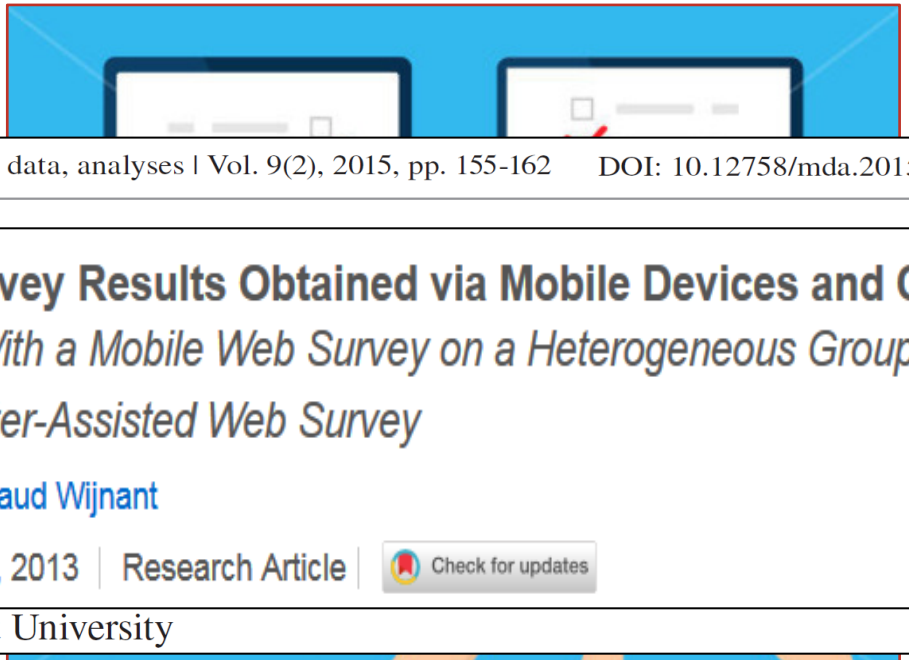
OPEN ACCESS Check for updates

Do surveys with paper and electronic devices differ in quality and cost? Experience from the Rufiji Health and demographic surveillance system in Tanzania

Oscar Mukasa[a,b], Hildegalda P. Mushi[a], Nicolas Maire [b], Amanda Ross [b] and Don de Savigny [b]

[a]Impact evaluation Thematic Section, Ifakara Health Institute (IHI), Dar es Salaam, Tanzania; [b]Department of Epidemiology and Public Health, Swiss Tropical and Public Health Institute (Swiss TPH), University of Basel, Basel, Switzerland

Computers replace interviewer: Online surveys



methods, data, analyses | Vol. 9(2), 2015, pp. 155-162 DOI: 10.12758/mda.2015.009

Comparing Survey Results Obtained via Mobile Devices and Computers

An Experiment With a Mobile Web Survey on a Heterogeneous Group of Mobile Devices Versus a Computer-Assisted Web Survey

Marika de Bruijne, Arnaud Wijnant

First Published April 5, 2013 | Research Article | Check for updates

Utrecht University

CASI on mobile devices:

- not different results than on computers

Yet…

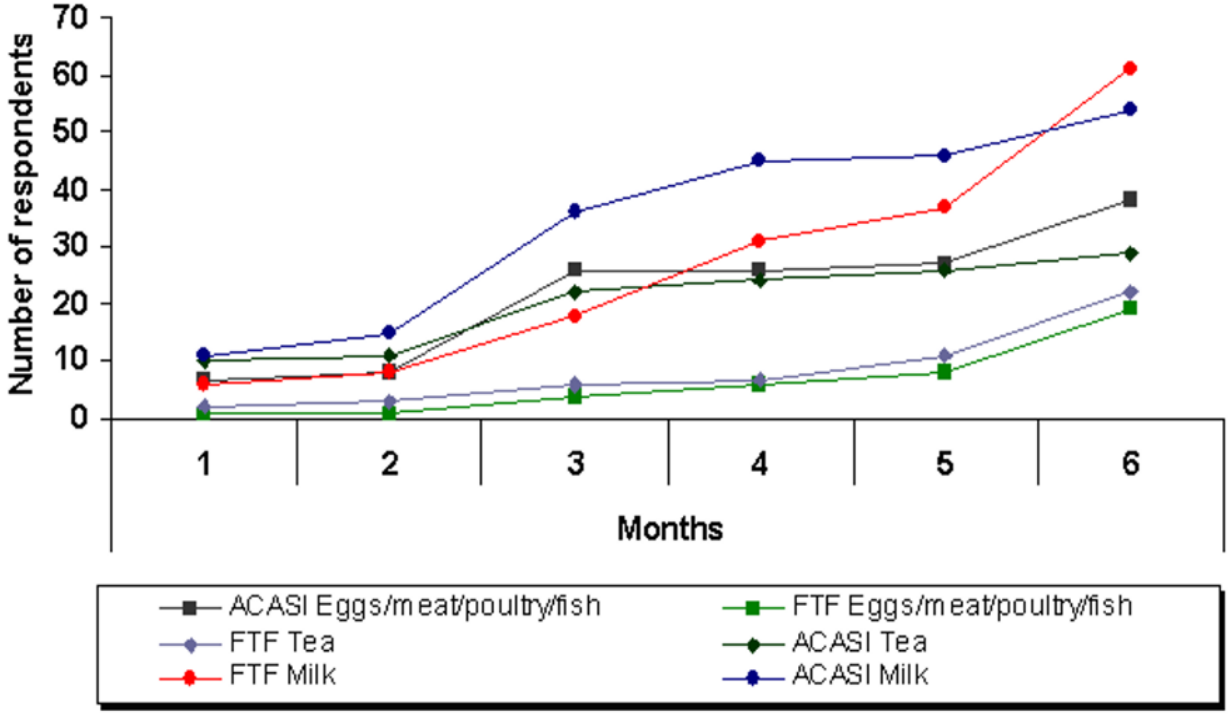
- Lower response rate
- Longer survey completion time

Evidence-Based Survey Operations:
Choosing and Mixing Modes to achieve context adapted data collection

Data quality in self-administered Questionnaires

CASI:

- reduced **social desirability bias**: more acqurate data on sensitive issues



Research article

Open Access

Audio computer-assisted self-interviewing (ACASI) may avert socially desirable responses about infant feeding in the context of HIV

Anthony K Waruru*[1], Ruth Nduati[2] and Thorkild Tylleskär[3]

Audio-computer assisted self-interview A-CASI

Research article

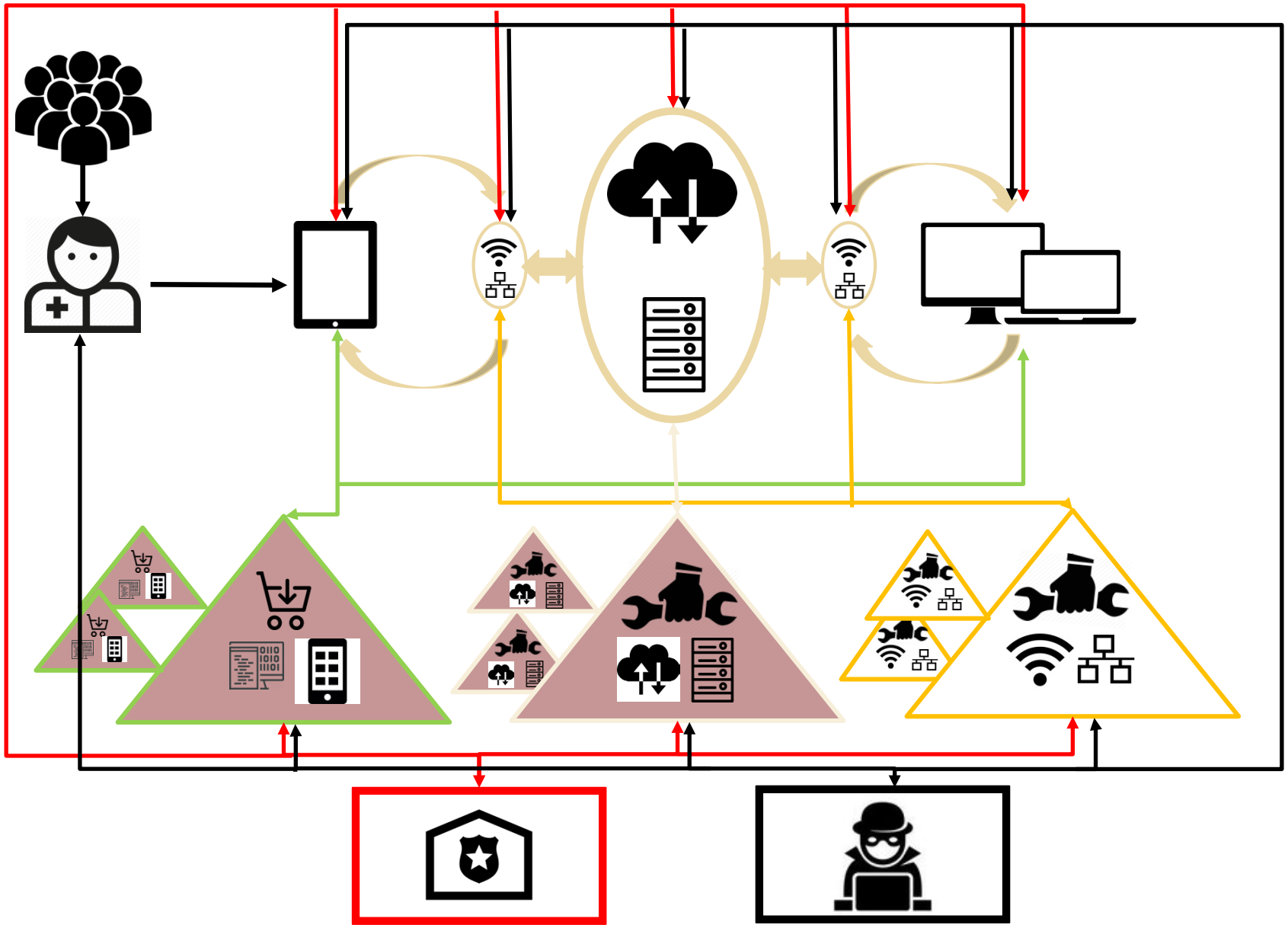
Open Access

Audio computer-assisted self-interviewing (ACASI) may avert socially desirable responses about infant feeding in the context of HIV

Anthony K Waruru*[1], Ruth Nduati[2] and Thorkild Tylleskär[3]

Data security:

- Beyond anonymisation of health data, privacy, data ownership
- Security risks beyond institutional control



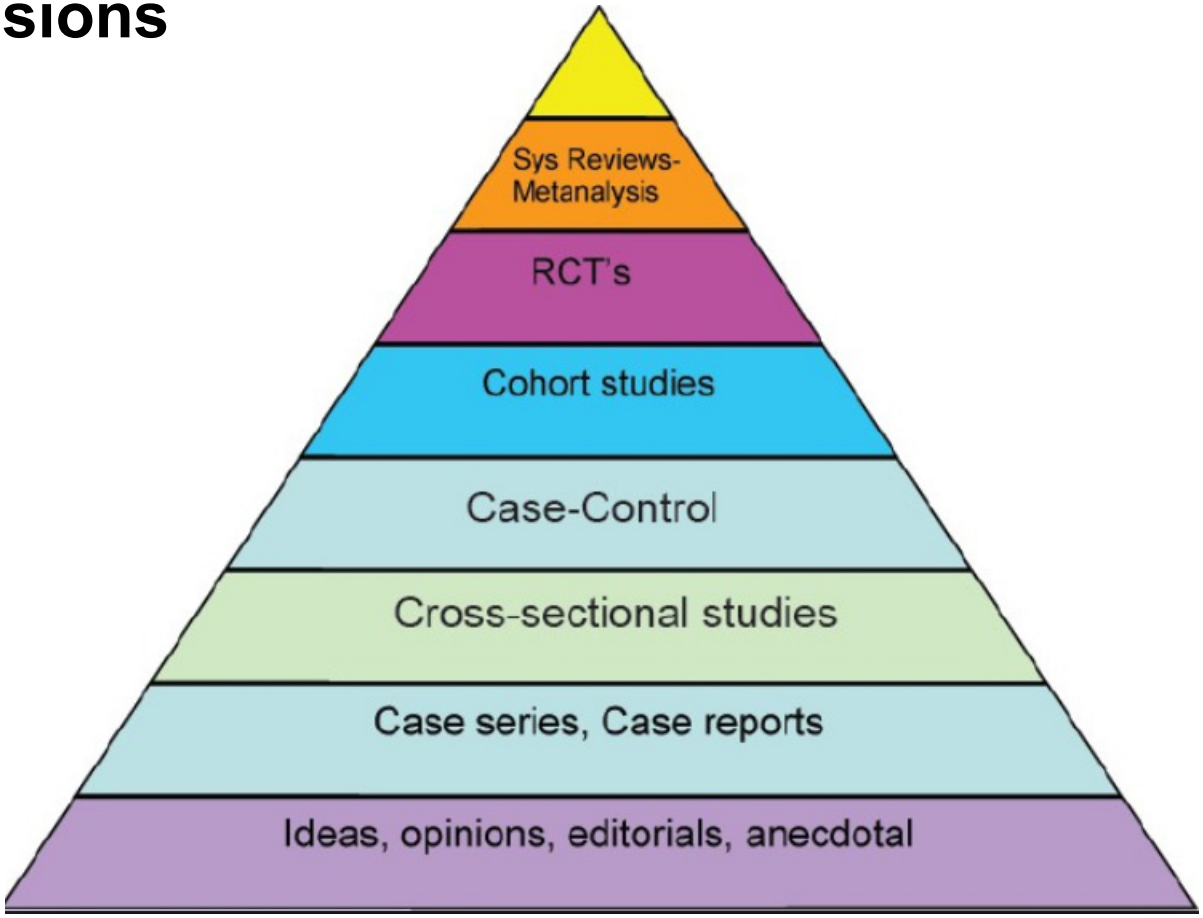
Privacy-by-design approach

Privacy by Design is an approach to systems engineering which takes privacy into account throughout the whole engineering process. (Wikipedia)

Privacy by Design is not about data protection

but designing so data doesn't need protection

Conclusions



To provide a strong fundament for evidence based decision making,
every level of the data collection process is of importance, taking into account the latest developments considering data quality and data security.

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Thank you!