Swiss TPH

CDSS Symposium

Introduction

Dr Fenella Beynon, Digital Health Unit
8th February 2023

Swiss TPH CDSS Symposium – Introduction

What is a clinical decision support system (CDSS)*?

Or CDSA, health worker decision support, digital decision support, computerised decision support…

- **Use decision logic**, combining:
  - Individual health information
  - Knowledge base

- **Provide person-specific recommendations**
  - Clinical assessment, diagnosis, treatment

- **Decision <u>support</u> not Decision-making**
  - Transparency & level of content

- **Digital tool**
  - Standalone or integrated

- **May leverage data for decision making**
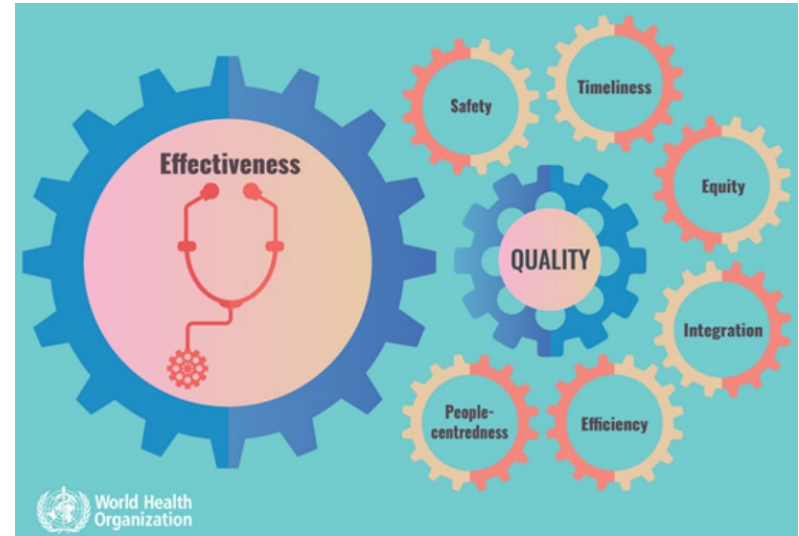 - E.g. monitoring / surveillance dashboards

Image courtesy of the TIMCI project

Swiss TPH

What is a clinical decision support system (CDSS)?

Why consider using CDSS in resource-constrained settings?

- **Healthcare providers face many challenges in adhering to guidelines in resource-constrained settings**
  - Training, mentorship, time pressure, multiple (/ conflicting) guidelines, cognitive overload...

- **Poor quality of care → significant mortality**
  - Estimated 5.7 - 8.4 million (15%) deaths annually in low- and middle-income countries[1]

- **CDSS can support adherence to evidence-based recommendations**
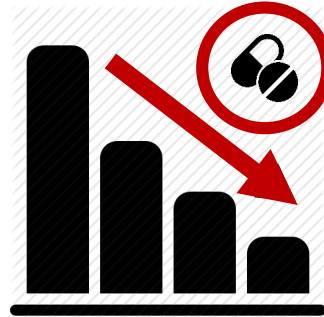 - → improved quality of care

WHO 2023

1. National Academies of Sciences, Engineering, and Medicine. 2018. Crossing the global quality chasm: Improving health care worldwide. Washington, DC. doi: https://doi.org/10.17226/25152.

Swiss TPH

Evidence for child health related CDSS

Improved quality of care [1-7]
- ↓ Morbidity
- ↓ Mortality

Reduction in antibiotics [2-3, 8-9]
- ↓ Antimicrobial resistance
- ↓ Costs
- ↓ Side effects / Morbidity

Improved knowledge & skills [5,10-12]
- ↑ Empowerment
- ↑ Uptake
- ↑ Care

Cost-effective / net savings [13]

Simplifies work [5, 10-12, 14]

Ref: [1]Mitchell, BMC Med Inf & Dec, 2013; [2]Rambaud-Althaus, AJTMH, 2017, [3]Bernasconi, PLoS One 2018; [4]Bernasconi, PLoS One 2019; [5]Finette, AJTMH, 2019; [6]Sarrassat, BMC Health Serv Res, 2021; [7]Schmitz, BMJ Open 2022; [8]Shao, PLoS One 2015; [9]Keitel, PLoS Med, 2017; [10]Bessat, BMC PH, 2019; [11]Mitchell, J Health Com, 2012; [12]Jensen, Ped Int Child Health, 2020; [13]Cousens, LSHTM, 2018; [14]Shao, BMC Health Serv Res, 2015

Swiss TPH

Evidence for CDSS

Annals of Internal Medicine | REVIEW

Effect of Clinical Decision-Support Systems

A Systematic

Tiffani J. Bright
Gregory Samsa,
Gillian D. Sand

Computerised clinical decision support systems and absolute improvements in care: meta-analysis of controlled clinical trials

Janice
George
thebmj

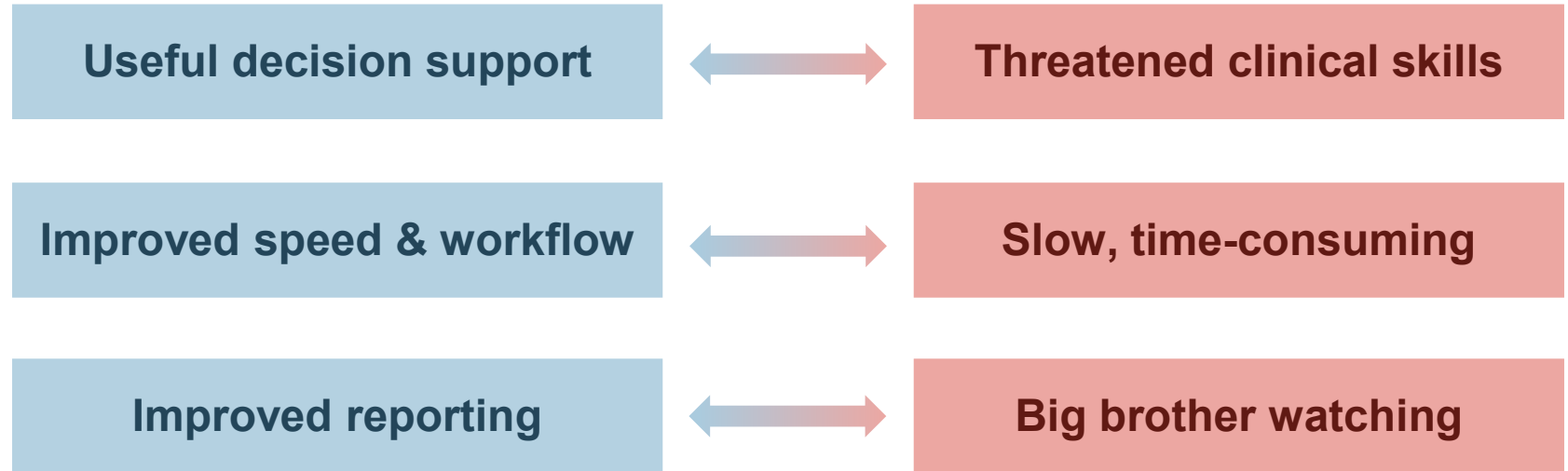Cochrane Database of Systematic Reviews | Review - Intervention

Decision-support tools via mobile devices to improve quality of care in primary healthcare settings

✉ Smisha Agarwal, Claire Glenton, Tigest Tamrat, Nicholas Henschke, Nicola Maayan, Marita S Fønhus, Garrett L Mehl, Simon Lewin   Authors' declarations of interest

Version published: 27 July 2021   Version history

https://doi.org/10.1002/14651858.CD012944.pub2 ✷

Swiss TPH

Divergent health worker perceptions & experiences

Useful decision support	⟷	Threatened clinical skills
Improved speed & workflow	⟷	Slow, time-consuming
Improved reporting	⟷	Big brother watching

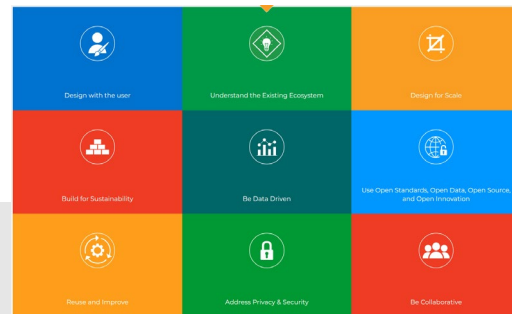Cochrane Database of Systematic Reviews | Review - Qualitative

Health workers' perceptions and experiences of using mHealth technologies to deliver primary healthcare services: a qualitative evidence synthesis

Odendaal et al 2020

Swiss TPH

Context and approach are critical to success

Digital health interventions should be integrated into the health system, not considered as stand-alone tools.

WHO 2019. twitter
https://tinyurl.com/29u6d6x6

Principles for Digital Development

Principles *for* Digital Development

- Design With the User
- Understand the Existing Ecosystem
- Design for Scale
- Build for Sustainability
- Be Data Driven

- Use Open Standards, Open Data, Open Source, and Open Innovation
- Reuse and Improve
- Address Privacy & Security
- Be Collaborative

https://digitalprinciples.org/

Swiss TPH

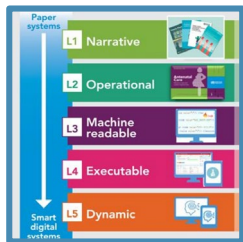# Principles for Digital Development: Be Collaborative

Be Collaborative

Being collaborative means sharing information, insights, strategies and resources across projects, organizations and sectors, leading to increased efficiency and impact.

https://digitalprinciples.org/

Overview of the symposium sessions

Keynote:
Carl Leitner, WHO

Session 1:
CDSS in the health ecosystem

Session 2:
Leveraging data from CDSS

Session 3:
Collaboration for sustainability

Swiss TPH

Swiss TPH

Thank you