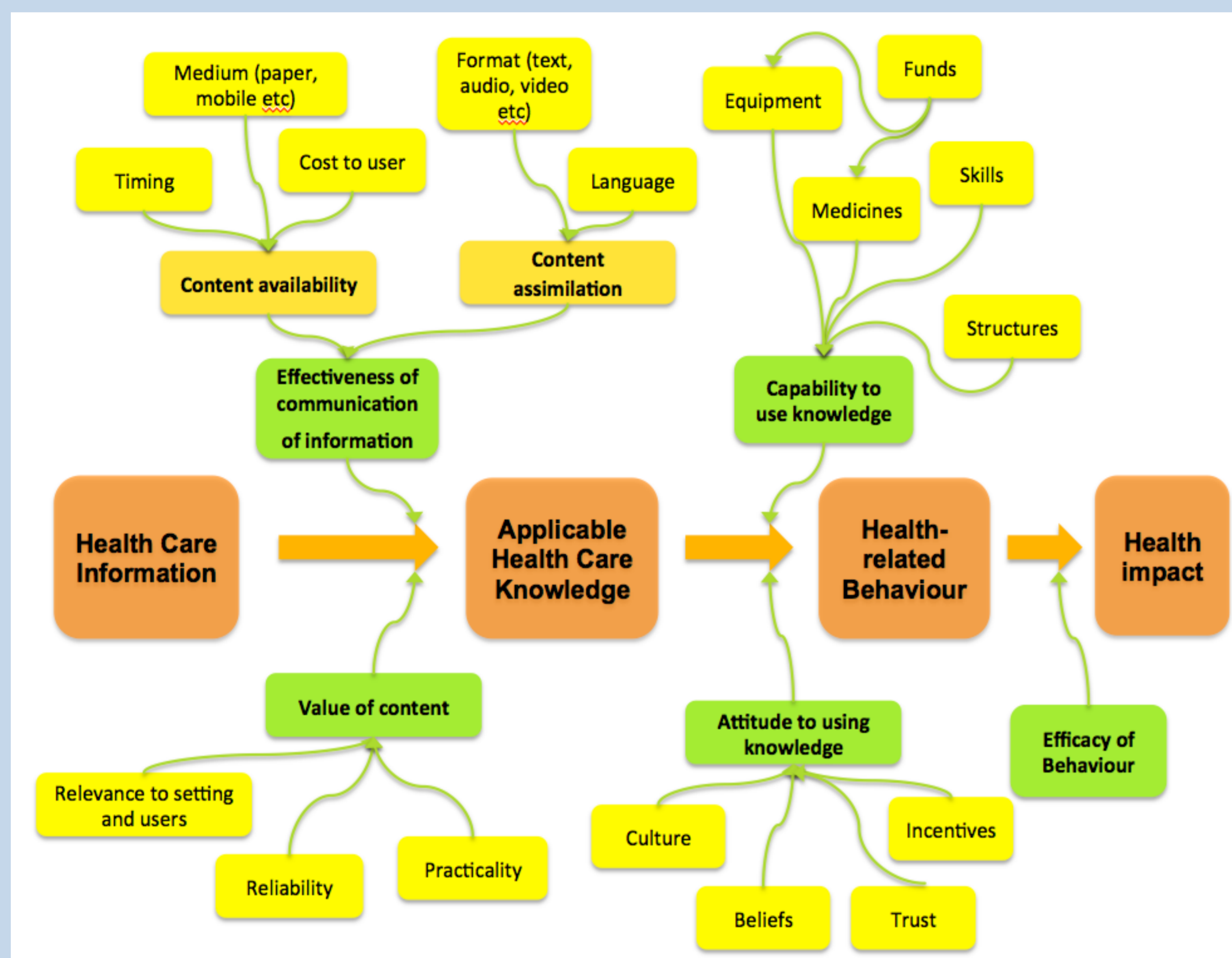
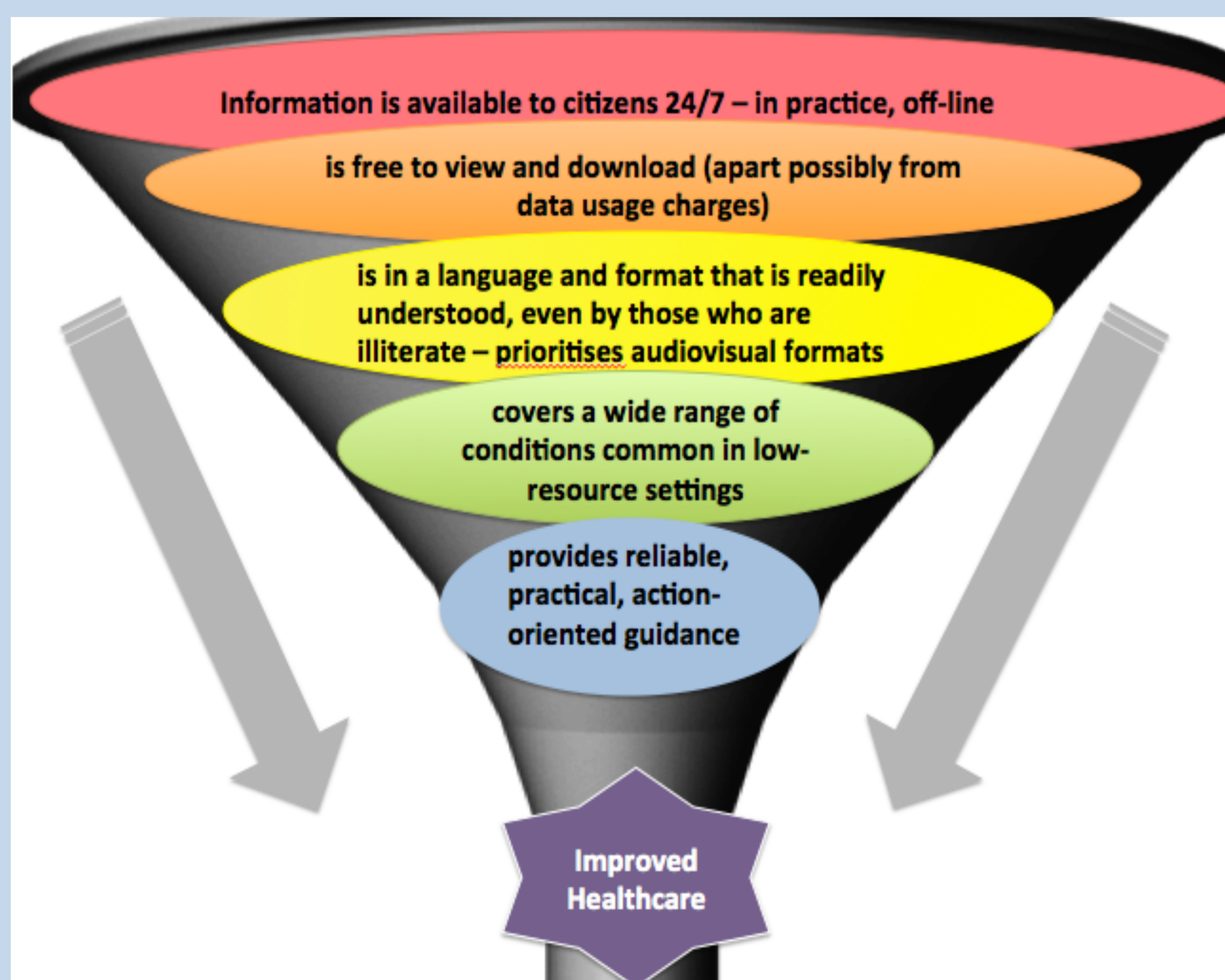




We can map a path from healthcare information to health impact



Leading to key criteria for mobile “apps” for empowering citizens in low-resource settings with essential healthcare information



ABSTRACT

Background

Mobile phones provide unprecedented opportunities to transform global health. One such opportunity is putting basic, life-saving, healthcare knowledge into the hands of citizens in low resource settings. However, little has been done to assess mHealth information applications from this perspective. This heightens the risk of developing and disseminating inappropriate or ineffective applications.

Objectives

To develop and apply criteria for assessing the potential of mobile applications to provide, to citizens in low and middle-income countries, accessible, reliable, action-oriented information on essential healthcare (such as for common childhood illnesses, complications of pregnancy and childbirth, first aid, and promotion of healthy behaviour and nutrition.)

Methods

Using a system model of access to and use of healthcare information; developing a set of assessment criteria and associated measures and indicators; designing and producing a simple visual template for rapid application of these criteria; and then using this tool to assess a selection of mobile “apps”.

Results

Assessed mobile applications varied considerably in how well they met the criteria, and often scored poorly. A few however rated quite well along key dimensions, and some others had weaknesses that should not be too difficult to remedy.

Conclusions

Valuable insights into the likely practical impact of mHealth information apps can be obtained, even without field-based evaluation, from a criterion-based assessment of their features. Developers and distributors need to pay more attention to the range of criteria that must be satisfied if the huge potential of mobile applications to provide essential healthcare information to citizens in low and middle income countries is to be realised.

REFERENCES

- Hagar C & Kartzinel H. Healthcare Information For All By 2015: Preliminary findings and future direction, *Information Development*, Sept 19, 2014
- Royston G, Hagar C, Long L-A, Dennis McMahon D, Pakenham-Walsh N, and Wadhvani N on behalf of the mHIFA Working Group, Mobile healthcare information for all: a global challenge, *The Lancet Global Health* 2015 Volume 3, No. 7, e356–e357, July 2015

These criteria underpinned a “traffic light” assessment template

CRITERION	COMPONENTS	ATTRIBUTES	mHIFA RATING GUIDE
SIGNIFICANCE OF THE HEALTH PROBLEM(S)	URGENCY	Chronic care Acute care Emergency care /first aid	
	SEVERITY	Minor health or healthcare problems Moderate health or healthcare problems Serious health or healthcare problems	
APPROPRIATENESS OF THE TARGETING	TARGET AUDIENCE	General Public Health workers and educators Carers (mothers, young people) & children	
	COUNTRY(IES) OF USE	High income Medium income Low income	
VALUE OF THE INFORMATION	RELIABILITY	Poor/Unknown Moderately accredited source Well accredited source	
	RELEVANCE TO USERS' NEEDS	Little relevance to users Moderate relevance to users Essential information for users	
EASE OF ASSIMILATION OF THE INFORMATION	EASE OF RELATING TO ACTION	Little clear linkage to action Moderate linkage to action Strong linkage to action	
	INFORMATION FORMAT	Text Audio Picture Video	
AVAILABILITY OF THE APPLICATION	LANGUAGE(S)	English National/Regional Multilingual/various local	
	GEOGRAPHICAL PROVISION	Local regions National Supranational	
TECHNOLOGICAL ACCESSIBILITY OF THE APPLICATION	COST TO USER	Full commercial Subsidised Free	
	USER INTERFACE	Basic website Website with navigation aids Tailored mobile app	
	COMMUNICATION REQUIREMENTS	2-way (to and from user) 1-way (to user) 1-way (from user) None (offline - pre-loaded or microSD)	
	MOBILE PLATFORM	Tablet or PDA Smartphone Feature phone Basic phone	
	OPERATING SYSTEM	iOS Windows Android Multiple	
	ADDITIONAL PHYSICAL MEDIA NEEDS	Special MicroSD card None (material downloadable) None (material preloaded)	

The template was then used to assess specific mHealth information apps against HIFA aims (illustrative examples shown)

CRITERION	COMPONENTS	OppiaMobile (Digital Campus)	Rating	First Aid (Red Cross)	Rating	SmartHealth (Mobilium)	Rating
SIGNIFICANCE OF THE HEALTH PROBLEM(S)	URGENCY	Covers many aspects of communicable and non-communicable diseases and care (including antenatal care) and environmental health		focused on emergency care/first aid		Mostly focused on acute; not much on emergency	
	SEVERITY	Broad and deep coverage of many health problems		A range of serious problems		Focus on just 3 main conditions (HIV, tuberculosis, malaria)	
APPROPRIATENESS OF THE TARGETING	TARGET AUDIENCE	Health workers - all material is in form of training courses		General public, and there is a companion app focused on babies and children		General Public? Nothing focused on mother and child	
	COUNTRY(IES) OF USE	Low and middle income		Versions available in over 70 countries including many LMICS		Information oriented to low and middle income countries	
VALUE OF THE INFORMATION	RELIABILITY	Sources appear well accredited		Well accredited source		Approved in some sense by Global Fund	
	RELEVANCE TO USERS' NEEDS	Essential information		Essential information		Information rather general; symptom checker ("isabe") only signposts to elsewhere	
EASE OF ASSIMILATION OF THE INFORMATION	EASE OF RELATING TO ACTION	Strong linkage to action		Strong linkage to action		Material very variable in pointing to action	
	INFORMATION FORMAT	Largely text, but with text to speech conversion facility. Some diagrams. Quizzes. A few videos.		Text, with extensive use of diagrams and videos, also quizzes and checklists		App is text-heavy; there are links to a few YouTube videos	
AVAILABILITY OF THE APPLICATION	LANGUAGE(S)	English only?		Available in over 30 languages		English, French, Portuguese, Swahili	
	GEOGRAPHICAL PROVISION	Generic, plus Ethiopia		National		Pan-African	
	COST TO USER	Free		Free (except possible data charge for initial download)		App is free (but will be data charges for online use?)	
	USER INTERFACE	Tailored mobile app, easy to navigate		Tailored mobile app, menu very easy to navigate		Mobile app, menu easy to navigate	
TECHNOLOGICAL ACCESSIBILITY OF THE APPLICATION	COMMUNICATION REQUIREMENTS	None(after download) except for progress feedback to trainers		None (after download)		Videos and symptom checker both require online access	
	MOBILE PLATFORM	Smartphone or tablet		Smartphone or tablet		Smartphone or tablet	
	OPERATING SYSTEM	Android only?		Android or iOS		Android only?	
	ADDITIONAL PHYSICAL MEDIA NEEDS	None (material downloadable)		None (material downloadable)		Preloaded on Samsung phones and tablets in Africa, downloadable elsewhere	

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FOR FURTHER DETAILS

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