



HIFA discussion on Combating digital health inequality in the time of coronavirus

Long Edit

Introduction: Coronavirus has highlighted as never before how being online is crucial to our lives. Those who most need support (including older and socially disadvantaged people) are least likely to be online. Community organisations, including libraries, have a crucial role in building digital inclusion and digital health literacy.

HIFA collaborated with the International Federation of Library Associations (the special interest group Evidence for Global and Disaster Health and the Health & Biosciences Libraries section) to support a webinar on Thursday 23 April, 15.00-16.00 British Summer Time (GMT+1): Combating digital health inequality in the time of coronavirus. The lead presenter was Bob Gann, an independent consultant, specialising in digital inclusion and combating digital health inequalities. He works as a Digital Inclusion Specialist for the National Health Service (NHS) with organisations including NHS Digital, Public Health England and Digital Communities Wales. He trained as a healthcare librarian and was Strategy Director for the NHS website. He is a member of the HIFA working group on Library and Information Services.

In the 2 weeks leading up to the webinar, HIFA hosted a thematic discussion on the theme of the webinar. The aims were to widen inputs and perspectives from those who might not be able to attend the webinar in person, to introduce the speaker to the HIFA community, and to build momentum and maximise attendance for the webinar. We addressed four questions:

- Q1. Who is excluded from online healthcare information?
- Q2. Why are people digitally excluded?
- Q3. What are their healthcare information needs at this time?
- Q4. Please give brief details if you have a practical example from your own service. We will include some examples in the webinar.

Read more about HIFA's work in Library and Information Services here. <http://www.hifa.org/projects/library-and-information-services>

Coronavirus: Combating digital health inequality in the time of coronavirus

(Long edit of HIFA Thematic discussion in April-May 2020)

This long edit provides verbatim extracts from a thematic discussion on the HIFA forum in April/May 2020, organised under subheadings. See below for profiles of contributors and citations/references.

What is digital health inequality?

[Neil Pakenham-Walsh, UK](#): '40% of the world's population is not online. Even in an affluent country like the UK 20% of the population are either not online or lack basic digital skills. Health information and services have increasingly been delivered digitally, and this has become even more crucial in the time of coronavirus. Without action, we risk leaving behind those who are not online (digitally excluded) during a public health emergency.'

Bob introduces the question of access to online healthcare information 'during a public health emergency'. This is relevant, for example, to the challenge of governments on how to communicate effectively in an emergency with a population that has diverse internet penetration.

Ayomide Owoyemi, Nigeria: In Nigeria and most of Africa, smartphone and internet penetration varies between 20-40% in different areas. Nigeria has less than 100 Million internet subscribers (not unique) due to this a large number of the populations is excluded from access to online healthcare information. There are also issues of literacy and digital skills.

Hassani Mohsen, Tunisia: 'I agree with you on what you distinguish that is there is unequal opportunity to access the information between the population in the world, but want to say that there are radio, posters and television that broadcasts continuous advertisements on the necessity of social distancing and the use of quarantine procedures.'

Basiru Taofeek Adekola, Nigeria: 'Dr Ayomide, no doubt you got it right I mean variation of Nigeria acceptability, accessibility and affordability of digital health inequality is the key that needed to be unlocked. But to me, Government of the day need a lot to work on for Nigeria Health workers to be able to pair up with their global counterparts.

Let me state it here as a reminder that Nigeria operates on three tiers of the health care system, Tertiary, secondary and primary health care which is the cradle and grassroots that represent the first contact of community healthcare, manned largely by middle-level health manpower with little or no potential of ICT. Health information is ranked beyond power it includes abilities to connect to facts in solving health challenges.

Peter Jones, NW England: 'Prompted by this thread I have written a blog post applying Hodges' model to map the concepts and issues across the model's four domains: the What, When, Where, Why of online healthcare information exclusion

<https://hodges-model.blogspot.com/2020/04/online-health-info-exclusion.html>

How do we define an 'active user' of the internet?

Neil Pakenham-Walsh, UK: 'Almost 4.54 billion people were 'active internet users' as of January 2020, encompassing 59 per cent of the global population. The definition of 'active internet user' is unclear

In terms of capacity to use the technology, Bob notes those who lack digital skills. This includes literacy in those languages that dominate the internet (in particular English, for which 90% of the world's population has poor if any comprehension). An even larger group is those with low health literacy. Depending on how we define this, we could say that the vast majority of the world's population has 'low health literacy'. The credulity of otherwise highly educated people about myths of coronavirus is proof of this. There is also, importantly, a large number of people who have reduced or no access as a result of the disability. There is also a gender dimension to exclusion, with some women having reduced access.

Neil Pakenham-Walsh, UK: 60% of the world's population are active internet users, and I asked how 'active internet users' are defined. In the UK, we were told, this implies someone with a broadband connection at home who can regularly use the internet for browsing, communications and video. Does anyone on HIFA know how this is defined in relation to the global population?

Webinar

Bob Gann, UK: It is clear that particularly for those of you in lower and middle-income countries connectivity is a major barrier (although even in the UK nearly 2 million homes are not connected). Health literacy and the fact that most online health information is in English are also major factors. In the webinar, I will particularly be focusing on the action in the UK but I hope that it will be of interest more widely. To date, we have 150 registered participants from several countries. Key themes will be:

- Tackling fake news and misinformation
- Mobilising creativity in communities
- Enabling safe remote care
- Supporting the most vulnerable

Emma Farrow, UK: Webinar: Combating digital health inequality in the time of coronavirus. Bob Gann described how community organisations, including libraries, have worked to support people who might otherwise be excluded. He gave examples of actions being taken now, during the global health crisis, to ensure those who most need information and support are not left behind in the digital age.

The recording is now available, along with Bob's slides and a list of featured resources.

<https://www.ifla.org/publications/node/93035?og=25692>

Who is excluded from online healthcare information?

Neil Pakenham-Walsh, UK: 'Digital health inequality is closely linked to other forms of social deprivation. But there are some more specific reasons including lack of skills and access to technology.'

'Includes all those are excluded because of technology, as well as all those excluded by lack of capacity to use the technology. The first group ranges from those who never have access to those who have intermittent access, and from those whose access has low bandwidth to those with moderate or high bandwidth. Billions of people do not have access to the internet or have minimal or intermittent access.'

I would like to recommend a paper on this subject by Bob Gann: 'Transforming lives: Combating digital health inequality, Bob Gann, NHS Digital, UK, International Federation of Library Associations and Institutions, 2019, Vol. 45(3) 187-

198 <https://www.ifla.org/files/assets/hq/publications/ifla-journal/ifla-jour...>

ABSTRACT: For those who are connected digitally, the digital health revolution is an enormous opportunity for patient empowerment. However, half the world's population are not online. Those who are least likely to be online are exactly those who experience the greatest burden of ill health. As information about health and illness is increasingly (and often exclusively) available in digital form, we face a new public health challenge – digital health inequality. Libraries are ideally placed to reach these population groups who may be the hardest to reach. The IFLA (2017) Statement on Digital Literacy recognises that with libraries' mission to help all their users access and apply the information they need for personal and community development, digital inclusion is an important part of the practice of librarianship. Successful interventions to improve digital inclusion involve targeting connecting, and transforming lives. This article focuses on initiatives to combat digital exclusion in England and Wales [also includes a section on health information in Kenya].'

Basiru Taofeek Adekola, Nigeria: Nigeria government must wake up to the responsibilities of including health informatics as a core competence in the training curriculum of Community Health Officers (CHO), Community Health Extension Workers (CHEW), Nurses, Medical Laboratory Technicians, and others paramedics.

Make a paradigm shift from manual reporting methods to digital reporting system of cases
Provision of data/information allowances, partnership with service provider on toll-free health information sharing from the public in notifying cases and user-friendly National health information database among others'

Joseph Ana, Nigeria: The pandemics crushing even strong health systems in HICs. Social and physical distancing during a mandatory lockdown of whole populations means that affected populations, whether they like it or not, whether they have the skills or not, as of necessity need to

resort to digital means to keep in touch, access health care providers, or do business, where such ICT tool is available, connected, and affordable. Perceptions may overstate availability and therefore countries risk plans that may fail if based on such rosy perceptions, which includes planning the current efforts to bridge digital inequality. A look at the African continent as a case study for LMICs shows that 'according to 2011 estimates, about 13.5% of the African population has Internet access', and 'while Africa accounts for 15.0% of the world's population, only 6.2% of the World's Internet subscribers are Africans'. In 2020, regular users day-by-day varies a lot from 7.5% in South Sudan (Pop. 11.2 million) to Rwanda 46.2% (Pop. 12.9 million), South Africa 59.4% (Pop. 59.4 million), Nigeria 61.2% (Pop. 206 million) to Seychelles 72.5% (pop. 98.4 million).

The conclusion is clear, the majority of Africans are left out of access to online health information in 2020. Therefore, when access is provided, the world needs to also look at making it usable by ensuring reliable connectivity which depends on some form of electricity (fuel, solar, etc) and affordable.

Neil Pakenham-Walsh, UK: A quick Google search surprisingly suggests a higher percentage of Kenyans as compared with Americans use the internet: '15% of American adults do not use the internet at all, and another 9% of adults use the internet but not at home.

- 34% of non-internet users think the internet is just not relevant to them, saying they are not interested, do not want to use it, or have no need for it.

- 32% of non-internet users cite reasons tied to their sense that the internet is not very easy to use. These non-users say it is difficult or frustrating to go online, they are physically unable, or they are worried about other issues such as spam, spyware, and hackers. This figure is considerably higher than in earlier surveys.

- 19% of non-internet users cite the expense of owning a computer or paying for an internet connection.

- 7% of non-users cited a physical lack of availability or access to the internet.'

The Kenya statistics suggest that 90% of the population use the internet, suggesting internet penetration is higher than the US. This is despite 43% of Kenya living below the poverty line and despite the relative lack of content in Kiswahili. One suspects the definition of 'use the internet' is different from the above, thereby making comparisons meaningless

Joseph Ana, Nigeria: I may add that comparisons are useful in keeping the world's eye on the ball so that we don't design 'one size fits all solutions'. There are so many differences between and within countries that disaggregating data/stats will remain vital going forward. Otherwise, we shall see 'internet user hotspots' like Kenya, Nigeria, Seychelles and South Africa as representative of a continent with 54 very different countries in many respects more so in their engagement with development including the use of the internet. Salute and welcome the 'hotspots' but develop solutions that carry the others along, 'Leaving no one behind'.

Neil Pakenham-Walsh, UK: According to this site: <https://www.internetworldstats.com/stats.htm> in 2019 59% of the world's population were internet users, and 40% of Africa's population (their definition of Africa includes North African countries). It's not clear what is meant by 'internet users'. There is a huge difference between (a) someone who has stable broadband access with more than 50 Mbps, both at home and work, and who enjoys continuous 4G or 5G connectivity through their smartphone while they are out and about, and (b) someone who has unstable, intermittent low-speed access, perhaps only at work (perhaps while competing for bandwidth with others). In previous years HIFA members (especially those in Africa) have lamented how slow their access is. Have things now greatly improved, or is there still a long way to go? What is the situation like now in rural areas?

Dr Tusharkanti Dey, India: We should also mention about India. India is a vast country, with large cities, medium to small towns, villages, forest tracks inhabited by local people called Adivasis, riverine areas, islands, hilly areas etc. There are few places as in cities, where power and broadband connectivity either through wired and wireless, mobile telephony may be available, but think of other

areas, where basic services like sanitation, water supply, power distribution, mobile telephony may be practically non-existent and or absent. Let us come to a consensus, how we can address digital inequality in the face widespread illiteracy including digital inaccessibility and non-existent ideas about how to use digital technology,

Are people who are connected better informed?

Neil Pakenham-Walsh, UK: There is commonly an assumption that people who are connected are better informed. I asked, "Is there any evidence that people who are active internet users are more informed than in terms of basic health knowledge as compared with others who are not connected, after correcting for confounding factors?" Bob noted that there is some evidence that digital skills training can be beneficial, but this is different and the question remains unanswered. Can anyone help answer it?

A question related to 2 is "Are people who are connected more vulnerable to be exposed to health misinformation, more likely to hold false beliefs, and more likely to be conspiracy theorists?" We agreed this was indeed more likely. For me, the drive to increase connectivity must be paralleled by vigorous efforts to facilitate the availability and use of reliable healthcare information and to protect people from misinformation. Without such efforts, the health benefits of connectivity will be severely limited and indeed can be dangerous. We only need to look at the recent proclamations of President Trump of the USA and President Rajoelina of Madagascar to recognise that digital health literacy is fundamental.'

Joseph Ana, Nigeria: I am glad you raised those questions because it is one thing to have broadband but it is another thing especially in Africa to have the other support items like regular power, maintenance as at when due, connectivity costs, etc. COVID-19 pandemic has elevated misinformation of health and science matters to another level and coming from Leaders of nations who are prepared to ignore the advice given by experts who are their employees or appointees. It is not just digital illiteracy it is more basic than that: analogue illiteracy on health and science, surprisingly even in high-income countries. I look forward to receiving the video of the meeting when it released.

To your questions, I say, yes, there is a rapid increase in internet connections creating the impression that the digital divide is bridging, however, digital inequality increases too: between people online and offline, between people with the skills and financial resources. A sizeable proportion of the connected population and households do not use the Internet optimally often because they lack the necessary devices to connect to the internet.

RIA's 2017 After Access Survey revealed that 'South Africa has the highest mobile phone (84%) and Internet penetration rates (53%) amongst the seven countries studied', and found also that 'digital exclusion reinforces and deepens existing social exclusion reflected in low income, unemployment, poor education and social isolation'. Also that 'despite the hype around smartphones connecting the poor, the digital divide between the poor and the rich is significant. The data shows that while the digital gap between men and women is diminishing it persists and is more pronounced due to income and educational inequalities. (Africa Digital Policy Project Home ICT Access and Use Surveys – After Access : The state of ICT in South Africa).

It is a complex problem requiring multi-level policy direction developed on global and continental forums.

Neil Pakenham-Walsh, UK: Bob Gann starts us off by saying, "In the time of coronavirus, patients, carers and the wider public have particular needs for healthcare information." This approach suggests a particular focus on everyone's information needs specifically for information on coronavirus.

I would like to encourage HIFA members to develop this further. What are the information needs of patients, carers and the wider public in relation to coronavirus? And to what extent are these needs met (or otherwise) by digital inclusion (or exclusion).

Below are some preliminary thoughts on these questions from me.

With regard to the first part of this question, which I think relates to all people in all countries (whether or not they have an internet connection), I see people as having actual needs and perceived needs. They have actual needs for reliable healthcare information that will protect them from the virus and guide them appropriately should they develop symptoms. And they also have perceived needs (desire for information/answers that may be, for them, just as urgent, but will not protect or guide them - for example, "Was coronavirus manufactured in a lab in Wuhan?"). To what extent are actual needs being met? The current 'infodemic', driven by social media, means that millions of pieces of information, some of which are reliable and some of which are not, are being circulated. Many if not most of the world's population has low health literacy. This, together with the vested interests of the media and some politicians in creating a false narrative, means that hundreds of millions of people are being misled. As Dr Tedros has said: "We're not just fighting an epidemic; we're fighting an infodemic. Fake news spreads faster and more easily than this virus, and is just as dangerous." If people are being misled, then by definition their information needs are not being met. Their information needs are being denied, despite the fact that many of them are extremely well connected digitally.

Coming back to Question 3, I think there can be no doubt that digital inclusion has a very, very important *negative* impact on the availability and use of reliable healthcare information. It allows the creation of a huge cloud of potentially harmful and even dangerous noise. Sadly, such noise propagates more easily than the pieces of reliable information (from WHO and others) that would actually protect lives. WHO's a current collaboration with big tech companies such as Facebook and Google is extremely important.

Furthermore, the increasing connectivity of the global population, and social media in particular, arguably have an even more pervasive and wide-ranging negative potential. Namely, there are signs that people are turning away from mainstream 'reliable' science and medical information from reputable sources. There is increasing mistrust in science and in authorities, stimulated in part by mavericks and conspiracy theorists. People often trust their friends more than reputable sources. I am reminded of an email I received from a relative a few weeks ago, who was passing on the 'fact' that if you can hold your breath without coughing for 10 seconds then you don't have coronavirus - and she believed it because it was 'forwarded from a friend, who heard it from another friend who is a university professor'.

My conclusion is that digital inclusion is of course extremely important, but it also has a downside. Far more attention needs to be given to helping people identify 'reliable' information while protecting them from misinformation.'

Why are people digitally excluded?

[Neil Pakenham-Walsh, UK](#): 'In the time of coronavirus, patients, carers and the wider public have particular needs for healthcare information.'

'An article published in Devex discusses the conflict and internet blackout mar COVID-19 response in Myanmar's Rakhine estate: Rights groups and aid workers are voicing concerns about Myanmar's capacity for dealing with the impending public health crisis of COVID-19, after the country's first death was reported last week, amid a mounting caseload. Among those most vulnerable are the estimated 350,000 displaced nationwide by conflict and violence, in Rakhine, Chin, Shan, Kachin, and Karen states. Mark Farmaner the director of Burma Campaign UK was quoted "The internet shutdown, designed to cover up human rights violations, will now mean more people die as they will not be able to access life-saving information."

[Ayomide Owoyemi, Nigeria](#): Digital skills, Literacy, Smartphone access, Language

Hassani Mohsen, Tunisia: I think that the problem in the poor world is the weak rate of schooling, the limited financial condition of citizens, their distance far from basic services, the poor budget of their countries, and the continued political and military turmoil, the weak framing of the health personnel, the lack of exercise in managing crises, and the lack of transparency of official agencies.

Neil Pakenham-Walsh, UK: 'Bob has started the conversation by saying: 'Digital health inequality is closely linked to other forms of social deprivation. But there are some more specific reasons including lack of skills and access to technology.'

Poverty and Social Exclusion (UK) note: 'A significant proportion of the population is digitally excluded because they lack internet access and/or have low levels of digital literacy. ... The depth of digital exclusion for people with disabilities is generally much greater than for the wider population.' When I search digital exclusion on Google I get dozens of 'hits' on digital exclusion in the UK. One site makes the important point that digital exclusion is especially difficult during this time of confinement (a word that I prefer to lockdown). None of the hits refers to the global digital exclusion or that relating to LMICs. This is perhaps because Google is designed to provide results that relate to one's geography. But I also wonder if the concept of 'digital exclusion' is less recognised in many parts of the world?'

Dr Tusharkanti Dey, India: 'I have got a suggestion to overcome the problem of internet inaccessibility in rural and difficult areas. Can we think of establishing Long Distance Wi-Fi and /or WiFi mesh in particularly in small areas? Though technology is available, I do not know the technology of it very clearly, and how much cost will be required. But, there are some philanthropic or international agencies, who can take recourse to these techniques at least in some areas as a pilot basis.'

Neil Pakenham-Walsh, UK: 'We have heard about several reasons why billions of people worldwide continue to be digitally excluded.

1. First, there is exclusion through lack of connectivity. This is closely associated with poverty (connectivity is unaffordable to many, and costs are relatively high in the very countries where poverty is greatest). It is also associated with geography: those in low-income countries have the least well-developed telecoms infrastructure, and those in rural areas may have little if any coverage. There are thousands of initiatives, not limited to the health sector, that seek to improve connectivity. Many of these are related to internet connectivity through smartphones, which I understand is the most important, and rapidly growing, area of internet connectivity in low- and middle-income countries. I would be interested to hear from colleagues about the relative roles of mobile versus laptop/desktop connectivity in their lives and their work. To what extent are you using these tools in your frontline health care duties, your research, your education?

What initiatives are you aware of that are improving connectivity in your country?

2. Second, there is exclusion through lack of linguistic understanding. The vast majority of the world's population does not speak English, and yet most health information, including most health research, is presented in English.

3. Third, there is exclusion through lack of health literacy. Depending on how one defines this, the vast majority of the world's population, including many of those who are otherwise highly educated, have low health literacy. In particular, many of us have real difficulty in distinguishing between 'reliable' information as compared with misinformation. This is the reason that misinformation on coronavirus, for example, is so rampant - even among heads of state.

4. Fourth, there is exclusion due to 'organisational health literacy', which can be defined as the ability of organisations to understand and meet their audiences' diverse information needs. This is not just about the technical level of content, but also about how the content should be presented in ways that make it understandable, useful and actionable.

5. Fifth, there is exclusion due to disability, whether visual, hearing or other physical or mental impairment.

I would like to invite HIFA members to develop further any of the above themes. What are some key issues from your perspective? Are there other aspects of exclusion that need to be identified in this discussion?

Kate: 'I know that in South Africa the major network suppliers are offering free data for access to health care information. Whether this is COVID focussed or includes the broader scope of such information one would need to check. I wonder whether Vodaphone and MNT and other local ICT providers might already be collaborating with the government in Uganda and other stakeholders? Have you thought of contacting the local Mobile Monday groups in Uganda?

In terms of the second problem around options for adapting existing materials and developing a virtual training space and /or communities of practice, it would be vital to understand the technological ecosystem of your target audiences. In this case, this would include the trainers and the larger communities in which you work. I wondered whether you might find the following questions useful: Which devices they use? Which networks do they use? How much if any data they have access to? What are the regulations around access to say internet cafes etc?

How much the trainers and/or community groups which existed are already doing? Which key messages/parts of the training would you want to focus on? Some quick solutions could include: Saving the videos as lower density versions which might take up less memory and putting them on USB/memory sticks. Collaborating with local bulk SMS suppliers to provide SMS based messages with/without attachments - using something like Moyo, Whatsapp, or a local version of the same to distribute basic meme-based messages which could be taken from stills from your existing training packs/slides/videos.

It should be possible to distribute lite (video free) recordings of songs via SMS/Whatsapp attachments and/ or check which platform the communities are using for circulating music /video's and see whether they are offering discounted or free access at this time.'

What are their healthcare information needs at this time?

Neil Pakenham-Walsh, UK: 'Libraries and other community organisations are taking practical steps to ensure that the people who most need health information and access to digital services are not disadvantaged.'

Ayomide Owoyemi, Nigeria: Relevant information on Covid19, hygiene and safe health practices

Hassani Mohsen, Tunisia: Besides, the WHO can help them by organizing local teams in every economically weak country and communicating with them via the Internet to organize awareness and health intervention and provide social and financial assistance to the population in coordination with health agencies in those countries.

Vanessa Lister, Australia: 'I was interested in your post as reaching our 'audience' is impossible right now. Wise Choices for Life equips underserved communities by empowering them with reproductive health and life skills training to assist with breaking the poverty cycle.

We work with men and women as both are needed to embrace and lead transformational change. We recognise the role of local men and women - especially health and faith leaders - in encouraging and modelling changes in thinking and behaviour.

Our highly successful training is contextualised to the Ugandan community so It is highly interactive and using a face-to-face delivery method. We use a song, dance, images on flip charts, storytelling and role-plays to engage participants.

You can see the dilemma immediately in our current COVID-19 situation.

An obvious strategy is to move the training platform online. Two things immediately beg attention: (1) funding needs to digitise the learning materials and to train the trainers (2) internet connectivity challenges.

What help, support and information could members offer to ensure our work can continue?
We have plans to take our training into other underserved countries communities too in the future.'

Please give brief details if you have a practical example from your service.

Ayomide Owoyemi, Nigeria: We built an online platform (www.wellvis.org) to give people access to health information and health services but our reach is limited by internet penetration and smartphone access. We added local languages besides English and French to help more people use it. Our Covid tool (Covid19.wellvis.org) has been used across Africa but it is our of reach of feature phone users. We plan to build SMS and USSD features to improve the reach.

Pratap Kumar, Kenya: I'd like to share the work we've been doing to improve the availability of health information by addressing some of the reasons for exclusion:

- a) user capacity and training
- b) rural connectivity
- c) infrastructure

Here's a short video that sums it up: <https://youtu.be/81RTITB-cyE>. Here's the link to a recent publication that shows what's possible: Rubber stamps for improving clinical outcomes. We'd be more than happy to share the tool for free to support Covid screening. Please get in touch.

Joseph Ana, Nigeria: We liked your summary in our centre, and for our environment would add: d) cost of device and connectivity - who pays (Health Worker or employer?) and e) Health worker interest/motivation (Age of HW, level/seniority).

Pratap Kumar, Kenya: These are important considerations for digital inclusion, and here are some quick thoughts on how we try to overcome them'

'd) cost of device and connectivity - who pays (Health Worker or employer?)

Our approach is to enable the use of personal devices. So the tech should work any device (currently any phone with browser and camera) and with minimal training (just taking a picture, which we think anyone with a mobile phone can do).

In Kenya, we have a "sponsored data" model with the telcos. Just like "free WhatsApp", the data charges for digitisation are billed to us, not to the user.

Once the financial burden is removed from users, the employer (health system/hospital) is happy to pay for the costs of the technology.

'and e) Health worker interest/motivation (Age of HW, level/seniority).'

This is related to the "digital workflow". It's very difficult to get everyone comfortable with complex, "direct digital data input" workflows (i.e. directly entering information into a device). But taking a picture is a leveller - anyone can do this irrespective of age.

Shabina Hussain, USA: 'This applies to health as well as education.

Due to social distancing, we have seen schools starting classes on zoom. Some kids living in remote/rural areas don't have access to the internet even in the United States. Schools in those districts have adopted an innovative approach of sending school buses equipped with mobile internet to rural districts so that kids living in those locations can access the internet and participate in their classes.

Same applies to the Telehealth. Increasingly community hospitals are offering patient's appointments through Telehealth. Some Patients living in rural/remote districts may need more assistance in getting connected to the internet to attend their appointments.'

HIFA Profiles

HIFA profile: Basiru Taofeek Adekola is a lecturer at Oyo state College of Health Science and Technology in Nigeria. Professional interests: Community Health, Public Health and Public Health in Complex Emergencies. Email address: mariamfeek@gmail.com

HIFA profile: Joseph Ana is the Lead Consultant and Trainer at the Africa Centre for Clinical Governance Research and Patient Safety in Calabar, Nigeria. In 2015 he won the NMA Award of Excellence for establishing 12-Pillar Clinical Governance, Quality and Safety initiative in Nigeria. He has been the pioneer Chairman of the Nigerian Medical Association (NMA) National Committee on Clinical Governance and Research since 2012. He is also Chairman of the Quality & Performance subcommittee of the Technical Working Group for the implementation of the Nigeria Health Act. He is a pioneer Trustee-Director of the NMF (Nigerian Medical Forum) which took the BMJ to West Africa in 1995. He is particularly interested in strengthening health systems for quality and safety in LMICs. He has written five books on the 12-Pillar Clinical Governance for LMICs, including TOOLS for Implementation. He established the Department of Clinical Governance, Servicom & e-health in the Cross River State Ministry of Health, Nigeria in 2007.

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HIFA profile: Bob Gann is an independent consultant, specialising in digital inclusion and combating digital health inequalities. He works as a Digital Inclusion Specialist for the National Health Service (NHS) with organisations including NHS Digital, Public Health England and Digital Communities Wales. He trained as a healthcare librarian and was Strategy Director for the NHS website. bob.gann@nhs.net

HIFA Profile: Mohsen Hassani is President of AHALINA Association, Tunisia. Professional interests: International and community development. Provision of socioeconomic information in rural areas. Giving a voice to citizens. Conduct research concerning the socio-economic situation in Skhira region (eastern south of Tunisia). Email: ahalina.kenitra@gmail.com

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HIFA profile: Peter Jones is a Community Mental Health Nurse with the NHS in NW England and a part-time tutor at Bolton University. Peter champions a conceptual framework - Hodges' model - that can be used to facilitate personal and group reflection and holistic/integrated care. A bibliography is provided at the blog 'Welcome to the QUAD' (<http://hodges-model.blogspot.com>). h2cmuk@yahoo.co.uk

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