

## Special Theme Women in eHealth



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Journal of the International Society for Telemedicine and eHealth

## Special Theme: Women in eHealth

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A new section provides Interviews of women influencers in eHealth published at the WeObservatory Blog

<https://weobservatory.com/interviews/>

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## EDITORIAL

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### LEAVE NO ONE BEHIND AND WE MEAN WOMEN TOO

In 2011, the International telecommunication Union (ITU) envisioned an initiative to encourage women and girls to consider a career in the field of information and communication technologies (ICT). Reflecting the fast-growing industry, and certain that there are job opportunities in the sector, this appeal for digital inclusion of women and girls was a recognition that ICT needs new talents and that the number of women in the sector is disproportionately low.

To strengthen this initiative, it created an **International Girls in ICT Day** to be celebrated on the 4<sup>th</sup> Thursday of every April, to remind us all, of this global opportunity for countries to promote events and raise awareness of the importance of ICT and digital inclusion for women and girls. So far, almost 70,000 girls and women from 138 countries have taken part in its celebrations, and in 2017, the **International Girls in ICT Day** will be celebrated on 27<sup>th</sup> April.

Now, the excitement is for the UN 2030 Agenda for Sustainable Development. Endorsed by all Member States in September 2015, the agenda comprises 17 goals, 169 targets and 230 indicators. It is bolder, more ambitious, and more inclusive than the previous 8 Millennium Development Goals (MDGs), and the Agenda 2030 advocates to end poverty and hunger, advance access to clean water and sanitation, improve health and education, honour human rights, gender equality, empowerment of women, protection of the environment and all in between; framed in economic growth, social inclusion, and environmental sustainability pillars.

The universal call for the Sustainable Development Goals (SDGs) urges countries to be creative, and develop a new mind set to confront the challenges ahead. The 17 goals are interconnected and dependant on the success of one another, and it will be impossible to reduce poverty, decrease hunger, increase education, and improve health if there are no opportunities for innovation, more jobs and access to technology and most importantly, the inclusion of women in the process.

Furthermore, during that same UN General Assembly in September 2015, leaders of the world endorsed a connectivity declaration demanding Internet access for all, and agreed that connecting the world should be a priority and a pre-requisite for achieving the Global Goals pledging to work for universal Internet access to be a reality by 2020.

#### *So how do we do that?*

Currently there are more than 3.4 billion Internet users, 46% of the world population and according to the Internet Live Stats; by 2017, there will be more Internet traffic than all previous years combined, besides, WIFI and mobile devices will be responsible for almost 70% of all Internet traffic. Internet has already surpassed television and radio as a means of entertainment, getting the news, making appointments, connecting to friends. Also, the exponential use of Social Media all over the world is rapidly changing the way people talk to each other, and 65% of adults use social media networks to get or give information for issues related to their personal or work life. Women already represents about half of social media users and constitute roughly three fifths of the bloggers; making it possible to network, to share experiences, disseminate knowledge, build solidarity systems, and strengthen their voices.

Therefore, digital inclusion and digital literacy is a big part of the SDGs and means empowerment. If one can connect from rural or indigenous areas, if people with disability, women and girls, youth or adult can benefit from the use of ICT and the increasing volume of information made available daily, their lives will greatly improve. There are already several examples of the transformative power of digital inclusion coming from all parts of the world, even developing countries. Governments, NGOs, International AID Agencies and different stakeholders should do all they can to support digital literacy programmes for boys and girls, and encourage it to be part of the school syllabus and we, as civil society should push for it.

Of course, we can always say that if half of the world is connected, the other half is not, especially women and

girls. Nevertheless, if we continue to assist women to be empowered and concentrate on gender equality and encourage girls' education and participation in the labour market, we will contribute to give them a better future and there will be real prospects for advancement.

Pushing for girls' and women's education is an important driving force against poverty and key to human development. The Beijing + 20 declaration highlights that when women and girls have equal access to education, they make more informed decisions within their home and their communities, make healthier choices for themselves and their families and have increased opportunities of employment.

In 2013, the ISfTeH has created a working group on Women (WoW) aiming to discuss gender inclusion in Telemedicine and eHealth. The group has grown into one of the most active working groups encouraging women's empowerment and development to face the global challenges of today. It has been working closely with NGOs and International Organizations such as Millenia2015 (<http://www.millennia2015.org>) and UNESCO (<http://en.unesco.org>) believing that cooperative work can be a strong foundation for peace and development.

Now, with the eyes and minds of the world focusing on the 2030 Agenda for Sustainable Development, WoW's commitment to promote gender equality will be renewed into the "future we want" for every men, women, boys and girls of the world.

So, let's be part of it!

**Regina Ungerer**  
**Fundação Oswaldo Cruz**  
**Brazil**

## FROM VIH-TAVIE™ TO TAVIE-WOMAN™: DEVELOPMENT OF A WEB-BASED VIRTUAL NURSING INTERVENTION TO MEET THE SPECIFIC NEEDS OF WOMEN LIVING WITH HIV

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### Abstract

The web-based virtual nursing intervention VIH-TAVIE™ was designed to help people living with HIV (PLWH) adhere to their antiretroviral treatment (ART). The content of the intervention is generic and gender neutral. However, it is recognised that women living with HIV (WLWH) experience their condition in a unique way and face gender-specific challenges regarding ART intake. Consequently, it seemed appropriate to adapt VIH-TAVIE™ specifically for women. The purpose of this paper is to present the qualitative results of an evaluative study of VIH-TAVIE™ that describe the experience of six WLWH who received the web-based computer-delivered intervention and to present the content and specificities of an offshoot intervention under development, TAVIE-Woman™. The following themes emerged from the content analysis of interviews with the WLWH about : 1) presence of actual nurse on site to facilitate transition to virtual mode; 2) virtual nurse humanises experience of computer-delivered intervention; 3) learners' appreciation of medium and content; and 4) perceived benefits following participation in the intervention. To adapt VIH-TAVIE™ for women, discussions were also held with a healthcare team in a mother-child university hospital centre. The gender-specific content added to TAVIE-Woman™ included digital storytelling of HIV-positive women, various topics about changing ARV medication during pregnancy, neonatal ART prophylaxis, disclosure to children, adapting to life

with HIV, selecting a birth-control method, and social support. Ultimately, the purpose of TAVIE-Woman™ is to support WLWH by offering them 24/7 access to tailored education and reliable quality information.

**Keywords:** HIV; women; medication adherence; web-based intervention; nursing

### Introduction

The growing tide of people living with one or more chronic diseases and the challenges inherent in preventing and managing these health conditions bear witness to an urgent need for innovation to broaden the supply of care and services. In this age of giant advances in the field of information and communication technologies in health (i.e., eHealth), researchers in Montreal developed a concept of virtual nursing interventions and a computer platform called TAVIE™ (for Traitement, Assistance Virtuelle Infirmière et Enseignement - literally treatment, virtual nursing assistance and teaching). TAVIE interventions consist of online interactive sessions facilitated by a virtual nurse that engages the user in a process of self-management skill building. TAVIE™ has spawned a host of web-based interventions aimed at meeting the needs of client groups living with a health problem that is very often chronic (e.g., HIV, kidney failure, coronary heart disease, cancer, epilepsy, Parkinson's disease) and requires continuous personalised monitoring.

The first such intervention, VIH-TAVIE™, was designed to help people living with HIV (PLWH) adhere to their antiretroviral treatment (ART).<sup>1-5</sup> VIH-TAVIE™ consisted of four online sessions facilitated by a virtual nurse offering educational support. The virtual nurse is not an avatar but an actual nurse who interacts asynchronously with users via short pre-recorded video clips. The clips are triggered by complex algorithms based on user profile and input. The intended effect is for users to have the impression of interacting with a nurse in real time. Different camera angles and shots are used to enliven and humanise these asynchronous interactions.

The content of VIH-TAVIE™ is suited to both men and women living with HIV, that is, it is generic and gender neutral. However, it is recognised that women living with HIV (WLWH) face gender-specific challenges, most notably when it comes to planning and monitoring pregnancy in order to reduce the risk of HIV transmission from mother to child. Consequently, it seemed appropriate to adapt VIH-TAVIE™ specifically for women.

WLWH experience their chronic condition in a unique way. In a literature review, Carter et al.<sup>6</sup> found that the challenges faced by PLWH differed by gender, including with regard to treatment access and maintenance. More specifically, research has shown that women were more likely than men to be less adherent to their ARV regimen, to interrupt treatment, and to experience more adverse effects.<sup>7,8</sup> During pregnancy, adherence to ART is critical to prevent perinatal transmission of HIV. WLWH face many healthcare barriers that are heavily influenced by gender, including stigma and discrimination, violence, psychological distress, mental health and addiction issues, and lack of financial resources and social support. Female gender, the ability to bear children, and the possibility of perinatal transmission all contribute to the unique experience of women living with a stigmatising disease such as HIV infection.<sup>9</sup> Many WLWH experience significant levels of stigma that can have a negative impact on their psychological well-being, their social networks, and their healthcare service utilisation.<sup>10</sup> Several factors other than gender have also been found to be associated with suboptimal service utilisation, including low education level, insurance status, mistrust of the healthcare system, and weak trust in healthcare providers.<sup>11</sup>

Supported by the Millennia2025 "Women and Innovation Foundation"<sup>12</sup> to demonstrate digital

solidarity among women in the field of eHealth, we undertook to develop TAVIE-Woman™, a virtual nursing intervention adapted to the unique reality of WLWH. The aim was to address the specific needs of WLWH regarding ART adherence and thus better promote their health and well-being.

The purpose of this paper is twofold: to present the qualitative results of an evaluative study of VIH-TAVIE™ that describe the experience of six WLWH who received the VIH-TAVIE™ intervention and to describe the content and specificities of TAVIE-Woman™.

### Methods

The VIH-TAVIE's study was approved by the Institutional Review Board (IRB) of the Centre Hospitalier de l'Université de Montréal (#08-106). The exploratory qualitative evaluation of VIH-TAVIE™<sup>4</sup> was part of a wider quantitative quasi-experimental study aimed at comparing the effectiveness of two types of follow-up, traditional and virtual (i.e., VIH-TAVIE™), in promoting ART adherence among 179 HIV patients.<sup>5</sup> Traditional follow-up consisted of meetings with health care professionals over a period of 3 to 4 months. Personalised health advice was given on these occasions and covered medication, side effects, and other problems encountered. In virtual follow-up, four VIH-TAVIE sessions, each 20-30 minutes duration, were offered over an eight week period. The qualitative study was performed to understand how 26 PLWH who completed all four online VIH-TAVIE™ sessions<sup>4</sup> experienced the experimental intervention.

In this study, individual semi-structured interviews were conducted with participants to invite them to share their thoughts and feelings regarding VIH-TAVIE™. Each interview was recorded with consent and transcribed verbatim. First, a manual content analysis of the transcripts was performed regarding the experience of these 26 participants. Each interview was coded by a principal coder. Codes were then validated by another person well acquainted with the project. Differences and disagreements between the two were settled by consensus. Next, a secondary content data analysis was undertaken as part of the VIH-TAVIE™ primary qualitative research stream with a more narrow focus on the experience of the six women (out of the 26 participants) who took part in VIH-TAVIE™. An interview guide was used to ensure all topics of interest were covered, including use/appropriation of

technology, relevance of intervention (e.g., drug intake support), possible improvements to the intervention, and interaction with the virtual nurse.

Because VIH-TAVIE™ is intended to help build self-management skills useful to all PLWH, both men and women, we transferred a large part of its content to TAVIE-Woman™. To create gender-specific content (such as case stories), discussions were held in a mother-child university hospital centre with the team of a multidisciplinary clinic (i.e. obstetrician-gynaecologists, paediatricians, nurses, a social worker and pharmacists) dedicated to the care of WLWH and their children. WLWH were followed by obstetrician-gynaecologists in the context of either their obstetric or gynaecological care, while the children were followed for their HIV care by a paediatrician specialised in infectious diseases.

Various questions guided the discussions, including: “In your practice, what are the challenges facing women who are on ART or who plan to start ART (for example, with respect to pregnancy planning, during pregnancy and after delivery)?” Different techniques and methods were then used to tailor the TAVIE-Woman™ intervention, such as digital storytelling (verbal accounts or testimonies) of three WLWH who shared their experience of ART, case stories (illustrated narratives) and fact sheets. The filming of three videos (i.e. digital storytelling) of these WLWH was done as part of the TAVIE-Woman™ development. These WLWH were videotaped sharing their experience of being a WLWH who takes ART, facing challenging, overcoming difficulties and envisioning what access to the TAVIE-Woman™ intervention might mean for them. We expected that the use of these videos could be a means to create positive connections with other WLWH who would participate in the TAVIE-Woman™ intervention.

## Results

The results are presented in two sections. First, the experiences of six women who took part in VIH-TAVIE™. Second, gender-specific content of the TAVIE-Woman™ intervention. The accounts of three WLWH who participated in the development of TAVIE-Woman™ (i.e. digital storytelling) are summarised.

The sample consisted of six women who completed all four VIH-TAVIE™ sessions. Their median age was

50 years (range of 33–66) and five of the six (83%) had completed high school. Half reported annual income below CAD\$15,000. The median number of years since HIV diagnosis was 10 and the median number of years on ART was 7. (Table 1)

**Table 1.** Demographics of the six study participants (median and range are given for age, years of HIV infection and years on ART).

Age, in years	50 (33-66)
Native country	
Canada	4
Other	2
Marital status	
Single	2
Divorced/Widowed	4
Sexual orientation	
Heterosexual	3
Homosexual	1
Bisexual	1
Transsexual	1
With children -	
Yes	3
Number of children (min-max)	1-3
Highest educational level	
High school	5
College	1
Annual income, in CAD	
<\$15,000	3
\$15,000–\$24,999	2
\$25,000–\$34,999	1
Employment status	
Employed	2
Retired/Volunteer	1
Unemployment insurance	3
Living arrangements	
Alone	3
With partner, family, friend	2
Other (housing)	1
Years of HIV infection	10.2 (5.6–25.8)
Years on ART	7.2 (3.8–21.8)

Content analysis yielded four major themes that described the experience of a virtual nursing intervention in support of ART adherence. These themes and their corresponding subthemes are presented below.

### **Presence of actual nurse on site to facilitate transition to virtual mode**

Having an actual nurse on site during the sessions was reassuring as women could turn to that person when in doubt:

*“If I didn’t understand something, there was always someone next to me to answer my questions, no matter how trivial. And she always answered my questions, uh... with a nice smile on her face and, well... that reassured me. I felt reassured. As if I’d known the person for a long time.”* (Woman #2)

### **Virtual nurse humanises experience of computer-delivered intervention**

For women, computers can be an impersonal tool. However, in the case of VIH-TAVIE, the participants highlighted the human dimension of the intervention:

*“You don’t feel labelled as much, like, you feel more... respected in the sense that... a computer, well, it’s just so impersonal.”* (Woman #1)

*“Uh, a computer is alright, I mean, a computer is not a human being, but, uh, I still had the impression of having a human being in front of me.”* (Woman #3)

### **Learners’ appreciation of medium and content**

The women appreciated the quality of the teaching delivered by the virtual nurse. They also pointed out the usefulness of fact sheets they could print out to be used as reference material during and after the intervention. The sheets reassured the participants and were useful in managing side effects, among other things.

*“I don’t know what I’d do without them [fact sheets]. I’d probably be over at my doctor’s all the time asking: “What do I do about feeling tired all the time? What do I do about my lack of appetite?” Instead, with all the fact sheets, I can get by on my own [...] I took all of the sheets so I can help myself. And, uh, these tools have been a great help. I mean, I was very happy to have them because, see, I’m still using them today.”* (Woman #4)

One woman expressed her appreciation of the novelty of dealing with medication through a computer-delivered intervention accessible from home. Another woman stated that she appreciated the fact she was free to navigate the sessions on her own.

### **Perceived benefits following participation in the virtual nursing intervention**

Women identified many benefits following their participation in the intervention. The WLWH reported using strategies proposed by the virtual nurse to manage side effects and to adopt a positive attitude toward medication:

*“It’s like I’m taking vitamins now. In my mind, uh, they’re no longer drugs. In my mind, they’re drugs, you know, there are ways, you know, that’s the positive*

*thing it brought me, it’s having a different perception of taking medication and integrating it, uh... it doesn’t have to be a big deal. There are possibilities, it opened up, uh... opportunities in my line of thought to see things differently.”* (Woman #1)

They learned to integrate medication intake in their routine and gained awareness of the importance of respecting certain conditions to ensure regular medication intake by (e.g., taking medication with food). One woman stated that, before VIH-TAVIE™, she drank 2-3 beers a day and failed to take her medication methodically. After her participation in VIH-TAVIE™, something changed: She reduced her alcohol consumption and began taking her medication regularly.

Completing the virtual nursing intervention gave the women confidence, reassured them, and encouraged them to continue with their ART. Acceptance of the disease and not feeling alone were other emotional benefits reported. The women used various terms and expressions to qualify their experience: “reassuring”, “seeing the light”, “heartening”, “felt welcomed”, and “trust”. They were moved to see that researchers took an interest in their situation by setting up projects such as VIH-TAVIE™:

*Uh, confidence, having strong confidence. Knowing you’re not alone. Knowing there are a lot of people helping you anonymously (...). It’s like, sometimes, you think that because you’re HIV positive, you’re alone. No. Not true. You’re never... Anyway, as far as I’m concerned, I’m, I’m very grateful towards (name of hospital).* (Woman #2)

### **From VIH-TAVIE™ to TAVIE-Woman™: content adapted specifically for women**

The VIH-TAVIE™ intervention consists of four sessions and contains short video clips (n=120), narratives (n=16) and consolidation tools (e.g., logbook of adverse effects, 60 PDF files). This content is generic and gender neutral. The TAVIE-Woman™ intervention is based on the whole of this content plus more clinical content, accessible in print (fact sheets) and audio-visual mode, specific to women.

The women who will participate in TAVIE-Woman™ will first be asked to create an account in order to connect to the intervention. They will then be able to view three digital stories told by WLWH describing their experience with ART medication and expressing their thoughts regarding the possibility of accessing the TAVIE-Woman™ intervention. These

videotaped digital stories were incorporated to help create a bond between the women sharing their life experience and the women who will participate in the intervention. Here is an excerpt from the digital stories told by the three women that shared their views on the prospect of the TAVIE-Woman™ project:

“TAVIE-Woman™ would be a very interesting project not only because it could help manage medication intake and side effects but also because in the world of HIV there isn't much targeted directly at women. Me, I didn't always see myself reflected in the literature because many of the things that interested me were directed at men who have sex with other men, so I was always having to adapt a little. Having a programme specifically for women, I think it's important because we're part of the population at risk, like anybody else [...] so it's great to have something that speaks to us directly.” (Woman #1)

“The online version of the TAVIE-Woman™ project is very interesting for us, for all women living with HIV. It would help us a lot, especially at the start of a treatment. You tend to shop around left and right on the Internet. Or when you have to change treatment... It's important to get help immediately, it pushes you to take care of yourself. At the same time, it helps you see that you're not alone, someone's there to support you to get on with your life and to get through the process.” (Woman #2)

“I think that a project such as TAVIE-Woman™ could be interesting. If I could ask a virtual nurse questions, that would be interesting, it would be great! I see my doctor once a month or every three months. Often, I have questions to ask. If I want her to answer them, I have to prepare a list. Because I'm like “timed.” I have 15 minutes with her and I have to make it fast. It would be interesting to have exchanges with someone online. It would not have to be complicated, though, because I'm not very good with computers. I'm pretty basic. It would have to be fast and easy.” (Woman #3)

Users will then view a video clip of the virtual nurse, where she provides an overview of the objectives of TAVIE-Woman™ and of the content of its sessions. Moreover, eight case stories of HIV-positive women are accessible in the form of illustrated narratives (i.e., voiceover to images) dealing with various themes such as: beginning ART and changing medication during pregnancy, neonatal antiretroviral prophylaxis, disclosure to children, adapting to life with HIV,

selecting a birth-control method, and social support. These case stories are based on real-life examples. The women who shared their stories serve as role models to influence and encourage the users of the TAVIE-Woman™ intervention to adhere to their medication regimen. These case stories are also available in a summarised version on printable fact sheets (PDF files). Two other animated clips concern how community groups can support WLWH and the role of obstetrician-gynaecologists in monitoring their health. Finally, five fact sheets taken with permission from the CATIE website,<sup>13</sup> Canada's source for HIV and hepatitis C information, cover the following: HIV diagnosis during pregnancy; HIV, women and pregnancy; pregnancy planning; and tools for HIV-positive women and their babies. These sheets are available as PDF files that can be downloaded and printed out.

### Conclusions

The next phase of the project will consist of implementing the TAVIE-Woman™ intervention in two care settings in the Montreal area with the aim of promoting its adoption and encouraging WLWH and health professionals (physicians, pharmacists, nurses) to use the TAVIE-Woman™ in clinical HIV care. These two target groups will be invited to consult the four TAVIE-Woman™ sessions. The acceptability of the intervention will then be documented through discussion groups. Moreover, conditions that might facilitate or hinder the implementation process will be identified. Based on the Greenhalgh model of the determinants of the diffusion, dissemination and implementation of innovations (in our case, the TAVIE-Woman™ intervention), we will collect data on the following: characteristics of the TAVIE-Woman™ intervention (e.g., perceived benefits, accessibility, compatibility), user profile (e.g., needs, motivational level, skills), and receptiveness and disposition of settings towards TAVIE-Woman™ and other interventions.<sup>14,15</sup> Consequently, it seems imperative that we examine the viewpoints of both WLWH and of professionals to ensure the TAVIE-Woman™ intervention meets the needs of women and fits in with and complements professional practices. Investigating the organisational perspective would be valuable to facilitate implementation efforts on multiple levels.

Too often, information on HIV and its treatment is poorly understood by patients, thus undermining their management of the condition. Furthermore, access to

information would also allow family and friends to gain a better understanding of the vagaries of the disease, allay some of the fears surrounding it, and demystify its risks and consequences. The TAVIE-Woman™ intervention was developed to support WLWH by offering them 24/7 access to tailored education and reliable quality information.

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**Conflicts of interest.** 360 Medlink holds a licensing option on the VIH-TAVIE™ and TAVIE-Woman™ interventions. 360Medlink is associated with José Côté (for VIH-TAVIE™ and TAVIE-Woman™) and with Geneviève Rouleau and Isabelle Boucoiran (for TAVIE-Woman™).

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## A HEALTH SECTOR ONLINE TOOLKIT FOR IMPLEMENTING LEARNING INTO PRACTICE FROM VIOLENCE AGAINST WOMEN TRAININGS (TILPVAWT)

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### Abstract

**Violence against women (VAW) is a major public health and human rights concern. Intimate partner violence and sexual violence are among the most pervasive forms of violence against women. Training health professionals in VAW is essential to raise awareness and improve the care for victims with a comprehensive approach. One of the objectives of this project was the development of a set of 28 tools to facilitate VAW training of health professionals, using certain common content, and the transfer of this knowledge into their clinical practice. This toolkit has been presented on the website <http://www.toolner.com/en/>. This website has been designed in an easy to use and friendly way, and is oriented to trainers, organisations and individuals interested in improving their teaching skills in VAW, but with the potential to be adapted and used independently by different organisations. The toolkit is divided into five phases of training: preparation, development, implementation, post-training, and assessment; each containing different tools and examples. Training in VAW is the first step to change attitudes but it is necessary to motivate professionals, adapt content, methodology and assess the impact of the training. This website is a tool by which to achieve this.**

**Keywords:** violence against women; medical education; training; eLearning; transference to practice; technology enabled learning

### Introduction

The United Nations defines violence against women as "any act of gender-based violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life".<sup>1</sup> In contrast the broader term Gender Based Violence (GBV) refers to violence that targets individuals or groups on the basis of their gender, and thus not all victims of gender-based violence are female. A sub-category is Intimate Partner Violence (IPV), which is GBV perpetrated by a current or former intimate partner. The specific focus of this paper is Violence Against Women (VAW), or more correctly Gender-Based Violence Against Women, and is a form of gender-based violence committed against women because they are women. The Istanbul Convention has defined VAW as "all acts of gender-based violence that result in, or are likely to result in, physical, sexual, psychological or economic harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life".<sup>2</sup>

VAW is a major public health and human rights concern, and a serious risk to women's health, that has been recognised by the UN for decades, and subsequently WHO.<sup>3</sup> The impact is not only on women's physical and mental health but also on that of their children, as well as on decisions and actions



related to their health and on their health opportunities.<sup>4,5</sup> It has also a high social and health impact: years of life lost, high mortality in young women, high morbidity, and a very high cost to society (increased use of health and social services, disabilities secondary to abuse, work absenteeism, plus judicial, criminal, and other intangible costs related to loss of quality of life, school failure of their children, stigma, suffering, and pain).<sup>6,7</sup>

Despite its frequency and consequences for women and their children, IPV is the less recognised and visible. One cause is prior – even current - tolerance to this form of GBV, legitimised or endorsed by the cultures and religions of some modern societies.

Women experiencing IPV report health problems more frequently, seek medical help and require medical or surgical treatment more often, compared to women unaffected by IPV. But many of these women do not seek support from the police or other organisations, and healthcare professionals are often the first point of contact for survivors, treating their injuries, addressing their health consequences, and promoting health strategies. Several studies confirm that healthcare services are best placed to assist women who experience violence and ask for help, as victims may be reluctant or unable to seek alternative sources of assistance.<sup>3,6,8,9</sup>

The confidential nature of healthcare makes healthcare providers, particularly Primary Care Providers with their proximity to women and families, the most trusted professionals identified by survivors.<sup>10</sup> This enhances the need to raise awareness, sensitivity, and ability to respond appropriately to survivors and their children. The WHO recommends the systematic inclusion of IPV and GBV in the primary training and continuing medical education of healthcare professionals.<sup>3</sup> Despite progress, health professionals require ongoing awareness building, training, and education to detect and adequately address the needs of survivors of VAW. Training in VAW must become a mandatory part of the curriculum of health professionals, something that lags in most of the world's medical and nursing schools and universities. Furthermore, competency in responding to VAW must be raised.

Many of the trainers in VAW are professionals who are not exclusively dedicated to training. They are often healthcare professionals who have acquired advanced training in VAW and are experienced in their

management. The fact that they are professionals who do clinical practice is appreciated by participants, since they consider that they are able to understand better the difficulties of approaching this problem and putting themselves in its place.<sup>10</sup> However, they have little time to prepare materials, and to carry out the planning and methodological design of the process of a VAW training program. A support tool like this toolkit would facilitate and standardise this work for trainers.

The ongoing concern and need described above drove a team of professionals from the four organisations that took part in the European project: "A health sector toolkit for implementing learning from violence against women trainings". The main objectives of the study were to improve the training of healthcare professionals in VAW, and facilitate the transfer of what has been learned into their clinical practice. The participating organisations were S.I.G.N.A.L (Intervention in der Gesundheitsversorgung bei häuslicher und sexualisierter Gewalt. Berlin, Germany), Innsbruck University (Austria), SACYL (SAIud Castilla Y Leon, Spain), HAVEN'S (The Haven's at Imperial College Healthcare NHS are London's Sexual Assault Referral Centres UK).

Based on experience in this field, the following issues related to VAW training were addressed:

- To what extent can health professionals apply their knowledge in daily practice after attending a training activity?
- How can participants of training activities be motivated?
- How can participants be given the opportunity to practice their new skills?
- What forms and methods can best be used to transfer learning into practice?
- What emotional support is needed for participants?
- How can organisations support interventions in a better way?
- Are there available internal guidelines for this work and would they help participants to apply their new knowledge / skills?
- What is the role of trainers in addressing the issues above?

Further specific and operational objectives were to:

- understand from course evaluations and participant's feedback if the training of participants during the project resulted in changes in clinical practice

- understand post-training needs of health professionals in this particular field (support needed, current gaps, what works well)
- identify support methods and medium and long-term follow-up methods for participants
- develop a set of training tools for trainers, organisations, and professionals (based on the above)

## Methods

The development of the toolkit was based on the experience of the members of the project as trainers in VAW and on review of the literature and went through five phases.

**Planning.** Understanding and sharing the background experiences of the four organisations. Although each organisation worked in VAW and in training, each did it in different ways. Each organisation's approach was examined through comparing documentary information of the experiences of the four countries, meetings with presentations of the most relevant aspects of each organisation, debate in groups and reaching conclusions.

**Preparation.** A study of current practice and needs of training in VAW was performed. The content, methods, perceived usefulness for practice, and identification of obstacles and facilitating elements were assessed for each of the four participating countries. Participants were asked to make proposals or suggestions for improvement. A questionnaire was developed and administered to a sample of health professionals in the four countries.

**Development.** A tool was designed based upon findings of phases one and two. Findings of the four participating groups, surveys, and contributions of the participants were analysed, debated, and prioritised based on agreed criteria to form a reasonable consensus-based set. The content that each tool should include was defined, such as target group, timing of application, objectives, time needed, description, and examples. The quality criteria of training in gender violence approved by the Ministry of Health of the Spanish NHS was considered,<sup>11,12</sup> as well as experiences of other participants, both in content and methodology.

**Evaluation.** Tools were distributed among the four groups to pilot and evaluate. After the evaluation and analysis of the experiences, the final format of the tools

was decided. Examples were provided of content, bibliography, materials, Power Point presentations, models of evaluation questionnaires, etc. to be used, following adaptation for local context.

**Transference to practice.** The document was written in English and Spanish and disseminated. A website was designed to facilitate access to, and use of, the toolkit.<sup>13</sup>

## Results

This project developed a toolkit that provides a range of 28 different tools, grouped into the five phases of the training process (planning, preparation, development, evaluation and transference to practice). (Table 1) The validity of this group of tools has been tested by the participating groups through several pilot activities within the framework of the project. Implementation in practice shows that transfer from learning can be achieved even in a complicated field such as gender violence. The expected impact on students will be assessed in the short and medium term.

### How to use the toolkit

The online toolkit offers a set of 28 tools divided into five phases, for improving the transfer into practice of learnings from training in VAW - interventions and support. There is no need to use all of the tools, and it is possible to combine some of them. It should be adapted to the different needs of trainers, participants and organisations, depending on their roles and the tasks that they perform:

- the type of targeted participants (undergraduate students, staff, professionals)
- the kind of training that will be taught (basic, advanced)
- the speciality of the professionals (family physician, emergency clinician, nurse, midwife, therapist, others).

## Discussion

The online toolkit is a dynamic resource of use to trainers in VAW and professionals and organisations for implementing training in the health sector for VAW. It is an open instrument, adaptable to different contexts and organisations with possibilities to be expanded and enriched with new examples and materials and open to suggestions for improvement.

Any tool that helps to sensitise and train health professionals and therefore contributes to improving the

Table 1. Summary of the formative processes that are proposed in the toolkit.

PHASE	TOOLS	Purpose of Tool and Examples
<b>PREPARATORY (PRE-TRAINING) PHASE OF THE TRAINING</b>	1. Organisational review of training agenda	The preparatory steps necessary for any training activity. An example of a Training Request Form is provided.
	2. Training budget allocation	
	3. External training request form	
	4. Motivation to attend training (extrinsic)	Tool to motivate professionals to attend the proposed activity. Good dissemination by appropriate means can help to achieve this (Internet, intranet, attractive brochures or posters, accredited activity, clinical sessions that arouse interest, etc). Example of an abstract for a clinical session.
	5. e-Mail to trainer	To know the expectations and needs of the participants. An e-mail to the trainer from each participant can be valuable insight to shape the training session.
<b>...PLANNING AND DEVELOPMENT OF THE TRAINING</b>	6. Basic content of a training programme in VAW	Description of the content of the activity; topics, distribution of the time, schedule, etc... An example of the development of the activity that will be included in the programme for its dissemination is provided.
	7. Motivation to action (extrinsic)	Raising awareness of professionals to assume their role in addressing VAW. Knowing the attitude and motivation of participants before starting the training activity is emphasised, and a questionnaire to be sent to participants is provided. Suggestions and methods are also provided to motivate and undo prejudices and myths that facilitate the change of attitude. Examples: 1. Initial questionnaire 2. Break down prejudices and myths 3. Film/video clips
	8. Mnemonic planning aid	An aid to recall what to ask.
	9. Training in knowledge of VAW Relevant bibliography provided	Recommended basic content, relevant bibliographic material, and some guides. PowerPoint presentation of the most important content for use by trainers is also provided.
	10. Training methods	Explanation of different methods to use to achieve programme objectives. - Presentation of cases and analysis of them - Role Play - Films - Audio recordings, or video recordings - Group work to discuss clinical cases or experiences - Interview with experienced professionals - Testimonies from victims An example role playing is presented to analyse the approach for a case, a 'detection' interview, valuation, the process of decision making, etc. Provides trainers with guidance on how to handle disclosure situations
<b>11. and 12. Managing disclosures (11. When there is access to a psychologist, and 12. When there is no psychologist available</b>		
	13. Ethical and legal aspects	Objectives to be achieved, and suggested methods to address ethical and legal aspects.

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<b>IMPLEMENTATION PHASE:</b> Transfer of the knowledge into practice	14. Information on vicarious trauma and self-care	Repercussions of treating victims of GBV is analysed, and suggestions are made through a presentation on Vicarious Trauma.
	15. Letter to self	Four elements are presented to help acquire the commitment to change and to prepare for the implementation of actions in practice. Some examples are given.
	16. "I will implement"	This tool analyses how to apply new skills and knowledge, and decide on the necessary changes or adaptations to be made for application.
	17. Provide materials	
<b>POST-TRAINING AND FOLLOW UP</b>	18. Letter to employer	
	19. Policy / adaptation of skills to the workplace setting	
	20. Observation / shadowing with experts	Helps participants increase their confidence, and improve their skills and knowledge for an intervention.
	21. Champion for the issue in each team / organisation	Provides insight regarding how to provide leadership and positively influence organisations to commit to addressing the VAW problem.
<b>EVALUATION. ASSESSMENT TOOLS.</b>	22. Supervision	These tools facilitate and consolidate the implementation and ensure: support and follow-up to the professionals through supervision measures, and reminders; quick access to consultations and help; share positive experiences between peers; reflective practice meetings to share and analyse a case that has caused great emotional impact or difficulty.
	23. Keeping the issue on the agenda	
	24. Sharing positive stories	
	25. Reflective practice meetings	
<b>EVALUATION. ASSESSMENT TOOLS.</b>	26. Offer ongoing support	
	27. Form of evaluation of the process and the satisfaction with the formation	These tools evaluate the results of the training in both knowledge and attitudes, as well as fulfilment of objectives and expectations and satisfaction with the activity. Number 28 is applied in a deferred way to evaluate the transfer into practice (6 months after the end of the training activity). Evaluation questionnaires are provided for: 1. Exploration of the course and care for the adult victim of sexual assault (English) 2. Initial evaluation questionnaire (pre) (Spanish) 3. Satisfaction assessment 4. Final assessment of the basic training (post) (Spanish) 5. Deferred evaluation questionnaire (1 month) (English) 6. Sample assessment questionnaire of transfer to practice (6 months) (Spanish)
	28. Training review form	

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approach to VAW in health services is worth knowing and disseminating, since the detection of VAW and care for victims is a competence and responsibility of the healthcare professionals because VAW is a problem that seriously affects the health of the people who suffer it. Clear support has been shown through the WHO's endorsement of the 'Global Plan of Action to strengthen the role of the health system within a multi-sectoral national response to address interpersonal violence, in particular against women and girls and against children'.<sup>14</sup>

In Spain in the last decade a high number of professionals have been trained, a service for detection and attention to the victims of gender violence has been launched, and a common protocol for healthcare against the mistreatment of women by their partner has been elaborated and implemented, which serves as an aid to professionals. A resource guide and an inter-institutional co-ordination protocol have been developed, and various intervention programmes have been carried out in several of the institutions involved. This is an attempt to provide a comprehensive and co-ordinated response to the needs of victims of violence, to help them to recover their health, to minimise the consequences of abuse, and to regain confidence in themselves and in people. It is believed this will enable victims to take back the reins of their lives and re-integrate themselves into society in a new context of security, justice and respect for their rights.

## Conclusion

We believe that a tool of this nature can help trainers and professionals in training in the detection and management of this serious health problem, clearly underreported, where the lack of training is widely documented. The on-line and open format increases accessibility, in fact, from October 2015 when it was created to December 2016, we have received 36,130 visits, an average of 78 visit per day, despite a more specific evaluation of its effectiveness requires the development, monitoring and evaluation of certain activities that have been addressed, the preliminary results are promising.

We are currently working on expanding the content, with new material, selected and classified documentation, videos, clinical cases, which may also be offered free of charge, but under registration, to better understand the use and applicability of the website, encouraging the feedback of the users.

To eradicate violence against women and all types of social violence, political, social and personal commitment is needed, where men and women from the various fields of action must strive to address the causes of violence if we want to bequeath to future generations a society where gender violence has no place. Society must also convey to the women who are experiencing situations of violence that healthcare professionals can provide them with help, listening, support and guidance, along the path to recuperation.

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## TELEMEDICINE PROJECT IN REMOTE AND RURAL COMMUNITIES – EGYPT

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### Abstract

While many forward strides had been made over recent years in the Egyptian health ecosystem, in terms of overall mortality rates, vaccination and immunisation efforts, and expansion and improvement of medical infrastructure, some challenges remained unresolved. One major challenge is the centralisation of specialised medical services in the country’s major cities, leaving more isolated and rural communities with less than adequate medical services. The Egypt ICT Trust Fund felt that offering remote telemedicine diagnostic services would be a major asset to such communities. A telemedicine project, using open source, cloud technologies to connect small clinics with major hospitals in the country was initiated. Future plans include expansion to multiple nodes covering many more governorates in the country, with connection to multiple hospitals covering all medical specialisations. While the project aimed at improving medical services to rural population in general, field assessment studies have shown that women benefitted from the project due to the fact that women in these areas usually face cultural and traditional barriers preventing them from travelling freely if unaccompanied by a male guardian, rendering it very difficult for them to receive medical services from distant cities. This paper describes the process of successful implementation of each telemedicine session, and highlights the possible policy implications for future expansion of a workable model.

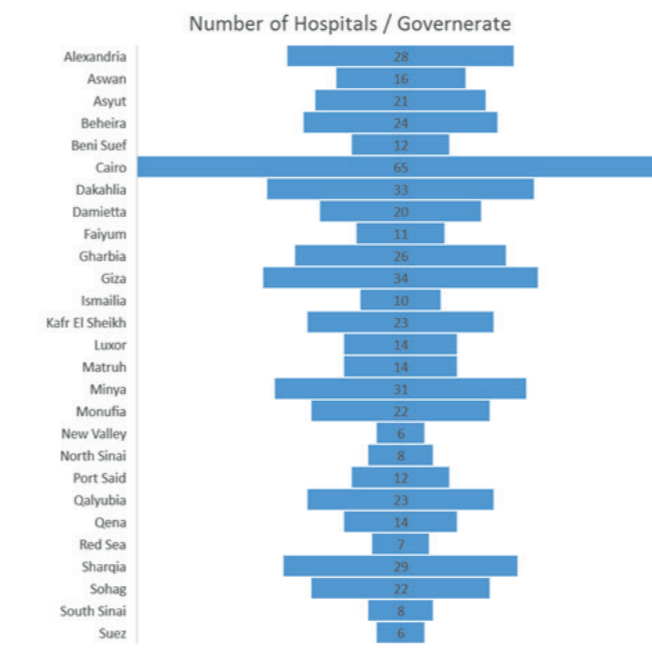
**Keywords:** ICT for development; eHealth services; telemedicine project; remote and rural community development

### Introduction

While there have been many advances in the Egyptian health ecosystem over the past three decades, many challenges remain unresolved. Child mortality and maternal mortality rates have dropped significantly, and average life expectancy reached 71 years in 2014.<sup>1</sup> Several noteworthy initiatives by the government have successfully tackled some of the major health concerns in the country, such as mandatory immunization which has eradicated Poliomyelitis in Egypt, the establishment of an Egyptian national programme to combat tuberculosis, and the near eradication of Bilharziasis.<sup>2</sup>

There is a high degree of diversity in the types of hospitals and clinics available in Egypt. Government and private sector hospitals are the two main groups of healthcare providers. They are further divided into 14 Faculties of Medicine affiliated with the major universities and 36 university hospitals, as well as hospitals affiliated with specific governmental ministries such as the Ministry of Interior, Ministry of Religious Affairs; Ministry of Defence etc.. Private sector healthcare services are also quite varied, ranging from traditional healers and midwives, private pharmacies, private doctors, to private hospitals of all sizes. A large number of NGOs provide healthcare services, including religiously affiliated clinics. The breakdown of the 539 public sector hospitals across the country, by governorate is shown in figure 1.<sup>3</sup> There are also 937 private sector hospitals across Egypt.<sup>4</sup>

Despite these achievements, the sector suffers from some challenges that are felt more strongly in remote and marginalised areas of the country. Official statistics show that there are 1.7 beds and 2.8 physicians for every 1,000 population in 2010, and in 2014, per capita health expenditure was US\$177.80.<sup>1</sup> these figures reflect the modest expenditure and infrastructure available in the country. One of the main developmental challenges faced by Egypt is the unequal distribution of resources between cities and rural governorates. The further one goes from the capital city, fewer services are found. Not only that, but field assessments by the ICT Trust Fund



**Figure 1.** Number of public hospitals by governorate in Egypt.

(ICT TF) conducted in the Siwa region revealed that even when medical facilities exist, not all medical specialisations are available. Siwa Oasis is located in the Matruh governorate and is one of Egypt’s most isolated settlements located in the heart of the western desert of Egypt. Siwa citizens still follow traditional customs especially those related to gender inequity. To receive medical services a patient usually has to travel to either the capital of the governorate he/she is in, or travel to the capital city of the country, incurring high costs of transportation, and rendering it quite a difficult journey for severely ill patients. Women are more severely affected than men because traditional customs prevent them from travelling unaccompanied.

The ICT Trust Fund was established in 2002 as a partnership agreement between the Ministry of Communications and Information Technology and the UN Development Program (UNDP). Most of its finance comes from the Ministry, external donors and grants, with a small portion from the UNDP. The ICT TF is considered a mechanism by which ICT tools can be used to improve citizens’ living standards, achieve sustainable social and economic goals. The Fund uses partnerships between the private and the governmental sectors to support local communities in gaining the needed skills for maximising the benefits of using various ICT tools. The Trust conducted a thorough field

investigation, and identified the need to improve medical services offered to remote and marginalised areas of the country.

As such, the ICT TF felt that the best solution was to use telemedicine technologies in these remote regions. The term “telemedicine” was coined in the 1970’s to signify the use of ICT infrastructure and resources in providing remote diagnostic services. The World Health Organization defined it as, “The delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of healthcare providers, all in the interests of advancing the health of individuals and their communities.” Rapid advances in ICT over the past decades have sparked a global interest in telemedicine. The commercialisation and widespread use of Internet services, and the creation of specialised software packages on top of the existing systems, has facilitated the adoption of telemedicine solutions in developing countries.

The project’s vision stemmed from the Millennium Development Goals (MDG’s) and Sustainable Development Goals (SDG’s), as well as from Egypt’s Sustainable Development Strategy 2030. The project was initially conceived to tackle goals 4 and 5 of the MDG’s which aimed to reduce child mortality and improve maternal health, and as such the first phase of the project (which is considered a pilot phase) specifically targeted these two goals. With the introduction of the SDGs, as well as the expansion of the project into two new geographical regions in the country, the focus shifted towards providing access to health services for all segments of rural society, while retaining a special focus on facilitating women’s access to clinics. This is in line with the SDGs third goal, the promotion of good health and well-being. The project also addresses SDG goal 10 in contributing towards the reduction of inequality within and among countries through promoting the social, inclusion of traditionally marginalised societies. As such future expansion models of the Telemedicine Project envision the creation of more nodes serving remote and marginalised communities in the country.

Egypt’s Sustainable Development Strategy – 2030, made the improvement of healthcare a national priority, with a vision where “all Egyptians enjoy a healthy, safe, and secure life through an integrated, accessible,

high quality, and universal healthcare system capable of improving health conditions through early intervention, and preventive coverage. Ensuring protection for the vulnerable, and achieving satisfaction of citizens and health sector employees.” Eight major work areas were identified as strategic pillars to be addressed in the coming years, three of which align with the establishment of a Telecentre Project, namely, improving the quality of healthcare services, decentralisation of healthcare provision, and the development of ICT infrastructure to support healthcare provision.

The Telemedicine project offered an ideal solution that bypassed the need for expensive infrastructure, which would require months to establish. Moreover, the technology, through offering on-the-job training for physicians in the area, enables a valuable opportunity for capacity building which would be difficult to achieve otherwise. The Telemedicine Project was launched as part of the Integrated Development for Remote and Rural Regions Initiative, alongside three other intervention areas in education, women’s empowerment, and entrepreneurship. Siwa was chosen as pilot location of implementation, after which two more project nodes were established in Nubia and El Kharga regions. Nubia, in the Aswan governorate, is considered one the remotest regions in the southern part of the country and therefore has some developmental challenges that are unique to its location. The Kharga Oasis is part of El Wadi El Gadid Governorate and is the southernmost of Egypt’s five western oases. It is located in the Western Desert, about 200 km to the west of the Nile valley.

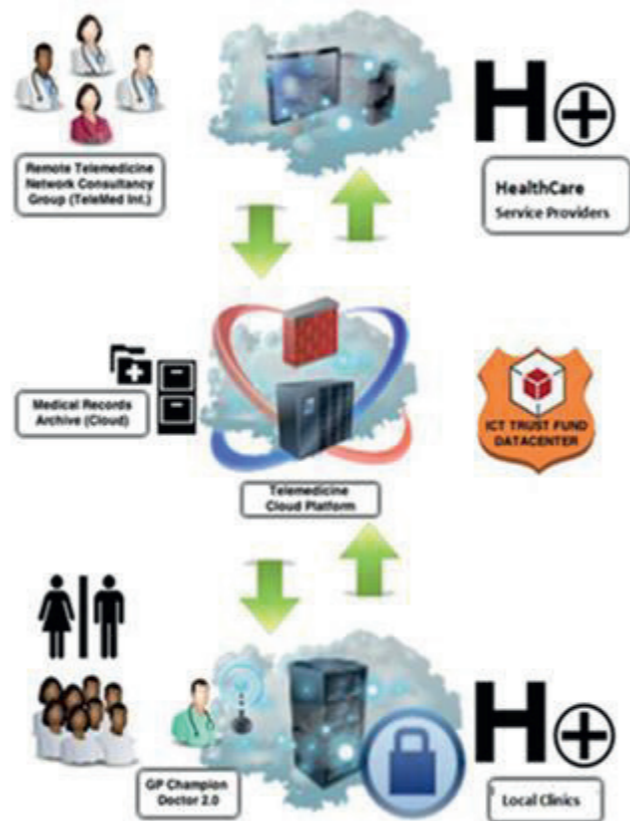
A nation-wide dissemination of the project is planned through several phases of expansion. The aim of this paper is to describe the evolution of the Egypt – Telemedicine Project.

**Method**

The ICT TF, was successfully able to use open source, cloud technologies in providing remote diagnostic tools to remote regions in the country. The system relies on synchronous, or real time, data transmission which translates into conducting live consultation sessions with physicians located in major cities across the country. Hospitals and clinics are equipped with videoconference solutions in the form of a Telemedicine kit that includes a webcam, a scanner, a

TV monitor connected to the Internet by ADSL cables and 3G. The system also allows for the creation and maintenance of patient medical records.

On the job training for medical staff in the remote region is provided by practitioners in the city, as well as the provision of up to date specialised content that helps in teaching good health practices. Moreover, the Telemedicine Project is unique in offering free hosting services for patient records as well as having fixed scheduled medical sessions, instead of relying on volunteer effort by physicians. Figure two shows the workflow adopted by the ICT Trust Fund in its project.



**Figure 2.** Telemedicine project workflow. (Source ICT Trust Fund).

The project serves non-governmental, non-profit seeking medical institutions, and co-operates with educational medical institutions. This helps in using ICT tools to serve sustainable development goals, specifically in rural and remote regions of the country. A pilot phase was implemented in 2009 in Siwa Oasis, in co-operation with the Vodafone Foundation – Egypt, Siwa General Hospital, and El Shatby Hospital in Alexandria. The project received international recognition, winning the AGFUND Award.

The second phase was initiated in 2013 in the Nubia Region in the Aswan Governorate, in co-operation with El Gasem Medical Centre in Nubia and the Magdy Yacoub Foundation – Aswan Heart Centre. In 2016 the model was expanded into El Kharga Oasis in the New Valley governorate, and a co-operation protocol was signed with Cairo Medical School - El Kasr El Ainy Hospital to include medical sessions in both the Nubia and El Kharga regions.

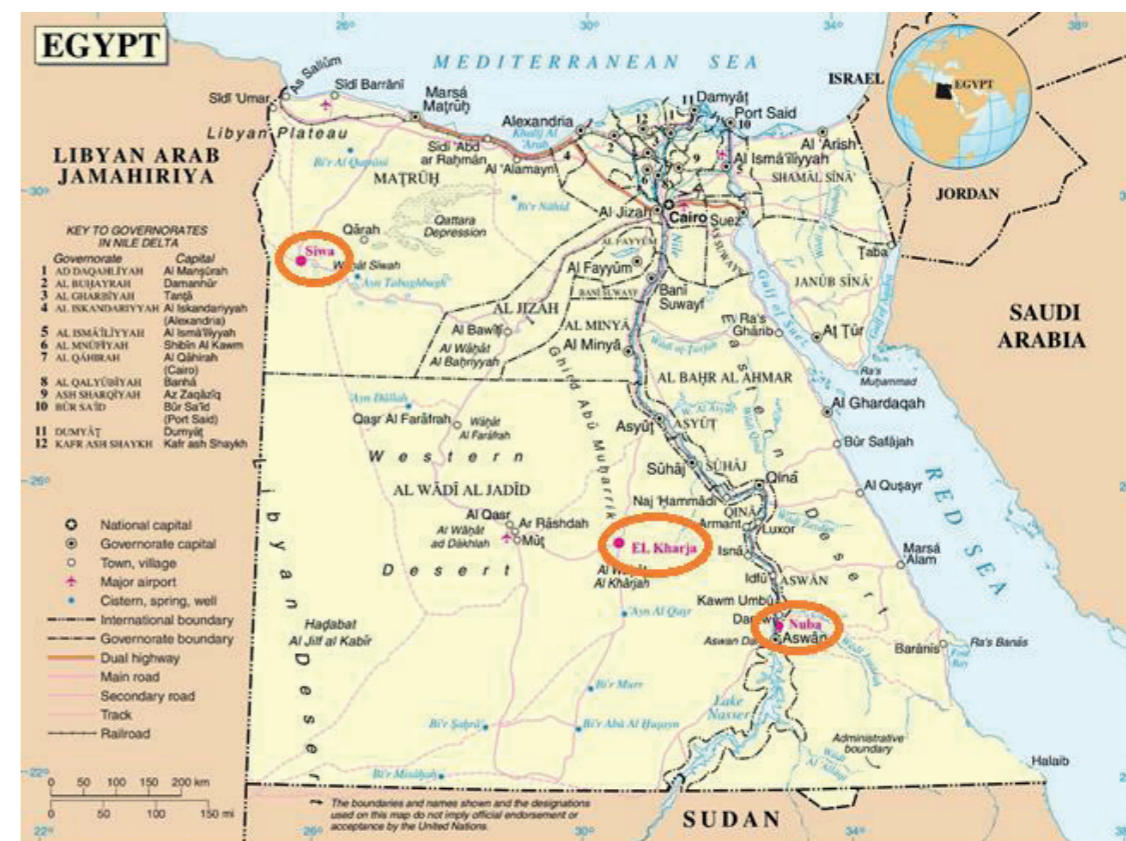
The geographical regions selected for implementation of the project shared several characteristics, demonstrating a strong need for the implementation of this initiative. First, they are considered the most remote and cut-off regions in the nations, which make it very difficult for the people living in those areas to travel long distances to get specialised medical consultation services. Second, the existence of poorly staffed medical facilities makes it imperative for the population to either seek consultation with physicians in their governorate’s capital or in Cairo. Third, willingness, and a strong need by medical staff to improve their capacities through on the job training services. The three locations in which the tele-

medicine project is currently taking place, namely Siwa, Nubia and El Kharga are shown in Figure 3.

Several data gathering methods and sources were used throughout the project. Outside consultants and ICT TF personnel were responsible for gathering data in the needs assessment and monitoring and evaluation phases, using face to face interviews with the project’s beneficiaries. Patients’ written consent is obtained prior to consultation sessions by the doctors.

**Results**

At the Siwa node, a pilot model of the Telemedicine Project, “Tele-Consultation on Child Health”, was implemented in the region in 2009 - 2012. This was established to assist in the reduction of child morbidity and mortality in the district. Through a public private partnership, the Siwa main hospital was connected to the Paediatric Department of El Shatby Hospital in Alexandria. The programme has shown that the teleconsultation approach can effectively improve the performance of healthcare providers in Siwa. Regular communication conferences were held, where physi-



**Figure 3.** The sites of the three telemedicine services.

cians in Siwa prepared cases for which they require consultation from the paediatric department specialists and professors of El Shatby Hospital. Moreover, teaching staff might decide to hold a distance-learning videoconference with their counterparts in Siwa during the regular teleconsultation. Healthcare personnel from Siwa Hospital also participated by videoconference on a biweekly basis in the scientific meetings held in the paediatric department in Alexandria

An interactive mechanism is set for the teaching process between doctors in Siwa and their counterparts from the Faculty of Medicine of Alexandria University. Two teaching labs were set up in Alexandria and Siwa, including videoconference technology and Internet landlines.

The ICT TF has successfully developed and handed over four IT solutions and teleconsultation tools to the Siwa Central Hospital and Al Shatby Hospital, consisting of two telemedicine kits in each governorate, and two conference centres in each hospital. A Centre of Excellence for Remote Consultation at Al-Shatby Hospital in Alexandria governorates was constructed consisting of Internet infrastructure and videoconference facilities. This has enabled the live broadcast of regular lectures taking place in Alexandria to their Siwan counterparts. The ICT TF provides sponsorship with an Internet Service Provider (ISP) to sustain the workable model of medical development in Siwa Oasis. More than 50 children have benefited from the teleconsultation services, while seven doctors from Siwa Central hospital were trained on the Remote-Diagnosis-procedures, in addition to medical eLearning, and using the software for diagnosis, while three medical staff were trained on how to operate the teleconsultation system.

The Siwa phase spanned over the course of three years, from 2009- 2012. The 2009 – 2010 period was an inception phase for the project where needs assessment was carried out, as well as establishing partnerships with project beneficiaries. In 2011 the Egyptian revolution occurred, which marked the start of a political and economic turmoil period in the country. As such the project effectively started its operations in 2012.

The modest numbers achieved in terms of patients were due to several reasons. Siwa, due to its remoteness, as well as the Bedouin nature of society suffers from lack of availability of local doctors. Available physicians are usually placed there as part of an internship required by their medical programme. As

such there is a very high rate of physician turnover, whereby a doctor could leave within two months. This posed a challenge to the ICT TF team, since they had to re-teach the physicians how to operate the technology, thus wasting time that could be used for medical consultations. Moreover, the lack of financial compensation for the Siwan based physicians proved to be a hindrance to their willingness to continue in the telemedicine programme. These two issues were taken into consideration in the following phase of the project, which was to be implemented in Nubia.

After the completion of the pilot phase in Siwa, and in accordance with Egypt's national strategy of providing decentralised medical services to all regions in the country, the Nubia Node was designated, in 2013, to receive the Telemedicine Kit. The region is remote and it is relatively difficult to access medical facilities. A local NGO hosted the Nubia Node - Al Gasem Medical Centre (GMC) –was willing to invest financially in the set-up cost of the technology, thus ensuring ongoing sustainability of the model. The project's work mechanism relied on the ICT TF providing the ICT infrastructure needed for the creation and hosting of highly-secured patients' records, ensuring complete privacy of the patient's records. Training was provided to GMC staff members by the ICT TF on operation and maintenance of the provided medical kit, as well as on uploading patient medical files on the software. Beside the NGO partner, the private sector represented by TeleMed Int., provided the project with the needed software, and co-operation was established with healthcare institutions such as Cairo University – Kasr Al Ainy- and the Magdy Yacob Foundation.

The track has become increasingly responsive to local needs as evidenced through visits. Project staff considered the concept of peer education (from reference doctor to GP) as an innovative educational approach. Discussions and interviews with participants indicated that beneficiaries were satisfied that their opinions were sought and incorporated in the track design. Patients reported to the final assessment consultant in written interviews that they saved around 1,000 Egyptian pounds (EGP = USD \$64) in travelling expenses per patient. Moreover, EGP 60 (USD \$3.80) was gained in income for the physicians and the NGO for each session.

The track used a software level tele-medicine framework instead of depending on hardware connectivity to save cost on multiple levels by using

open source certified codes and thus making it more flexible and easy to include extra nodes without the need to reinvest in new hardware or get more licenses. The needed hardware was limited to include an HD display screen, HD audio system, a laptop, and a cart to put all things together for better mobility.

The track developed a training manual for the IT specialist and the General Practitioner (GP) and deployed this training successfully. To extend the services to include more specialisation, the track contacted leading healthcare providers such as: Magdy Yacoub – Aswan Heart Centre, and Cairo University – EL Kasr EL Ainy Hospital. The success of the project in Nuba has led to the expansion of the project in 2016 into a third node in El Kharga Region, in the New Valley governorate.

Traditional gender roles in rural areas proved to be a hindrance for women in accessing the Telemedicine project due to the traditional prohibitions of communication and movement on women. To resolve this issue, a volunteer female physician was recruited to specifically cater for women attending the clinic in Nubia. As such, more women sought medical assistance from the Telemedicine clinics. (Figure 4) Dermatology is a new specialty that was added in October 2016.

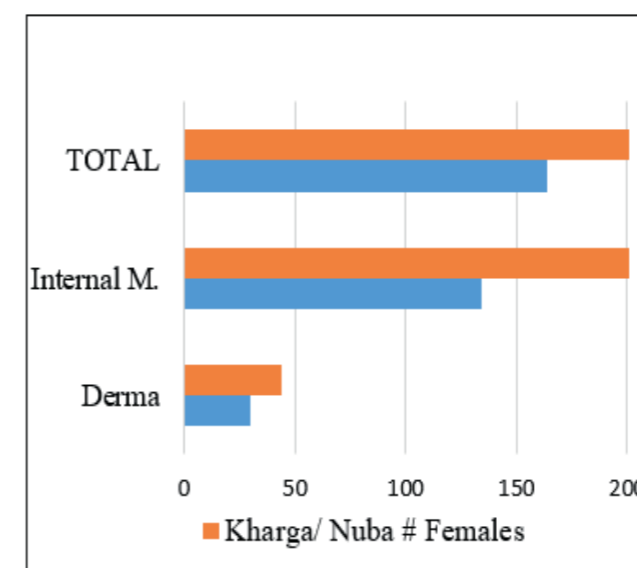


Figure 4. Total patients by specialty and gender.

The latest achievement in the project was the signing of an MOU with Cairo University Kasr El Ainy Hospital, to replace the previous voluntary based model of physician participation into one with fixed scheduling. As such, currently there are two specialties available for Telemedicine Consultation, Dermatology

and Internal Medicine. Two doctors, one from each specialty, give four to five consultative sessions per month, and as such there have been 16 sessions conducted in the region. The total sessions conducted in Nubia and El – Karga, divided by Internal Medicine and Dermatology are shown in Figure 5.

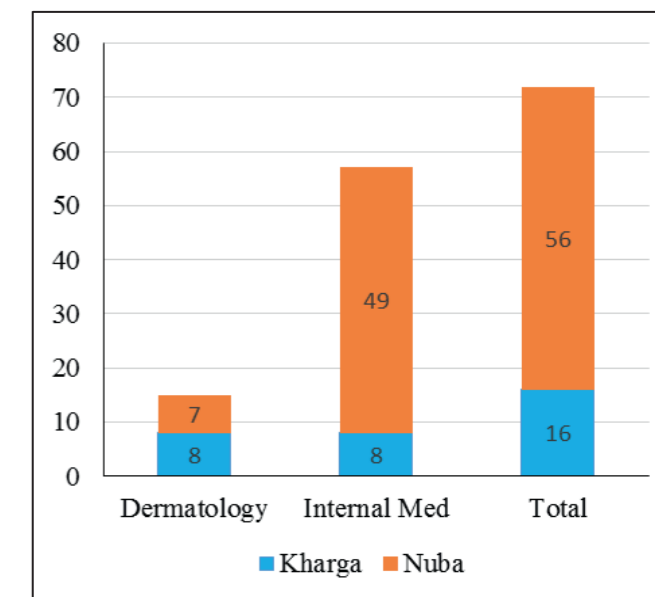


Figure 5. Total number of session by type and geographic region. Discussion

Building on the experience of the project in its three nodes, it was noted that the model's functionality is highly dependent on choosing the proper environment to host the model. Several criteria were put in place to maximise the benefits received from the project, namely the need for a more open environment in terms of gender roles, developing strong partnerships with civil society, and public/private sector hospitals, and the development of a sustainable model using out of pocket fees (paid by the beneficiaries directly) and avoidance of the free of charge model.

Moreover, several criteria were placed for the selection of the clinic to receive the Telemedicine Kit, namely the availability of Internet infrastructure, high incidence of patients at the registered clinic, availability of basic medical infrastructure equipment (x-ray, sonar, ..), availability of key human resources, belief in the tele-medicine initiative and aim to improve the level of service offered to the local community, and the willingness to share the initial establishment costs and future investments along with holding awareness sessions to promote the track.

## Conclusion

Out of a firm belief in the necessity of providing affordable and high-quality health services for all Egyptians, the future vision of the project includes an ambitious plan to expand the model into all of Egypt's governorates, through the creation of strategic partnerships with major health consultation institutions. Moreover, the project's expansion model envisions the inclusion of all medical specialisations, on a 24/7-hour basis, to ensure equitable access to health services across the country. As such the project's future- map includes expanding co-operation with corporate social responsibilities (CSR) units in major private sector entities in the country, and an agreement protocol has been already signed with Orange Foundation - Egypt to expand the number of telemedicine kits available in remote and marginalised regions of the country.

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# INTERVIEWS OF WOMEN INFLUENCERS IN EHEALTH

By Doyna Zharavina,  
blogger at the WeObservatory Blog

<https://weobservatory.com/interviews/>



MEDETEL INTERVIEWS

DR. PIRKKO KOURI,  
ISFTEH VICE-PRESIDENT



Next interview conducted at Medetel that we'd like to share with our readers is that of Dr. Pirkko Kouri, now **vice-president** of the International Society for Telemedicine and eHealth (**ISFTEH**) and an active member of its **Working Group on Women**. More biographical details to be found in the interview itself:

"I represent the Finnish society of Telemedicine and eHealth. My background is from nursing, I have done my PhD related to mother-child healthcare and use of ICTs. I'm working as a principal lecturer at the **Savonia University of Applied Sciences, Finland**. We educate nurses, midwives and other healthcare professionals as well. I'm mostly doing research and development work connected with the master level education, planning the generic models, etc. This year I was elected **vice-president of ISFTEH** and i'm very happy to be the **first woman** to occupy this position.

**DZ:** For you, what is the role of telemedicine?

**PK:** **Telemedicine is a tool**, a tool to combine different elements for people to be connected and exchange **experiences** around the world. Sharing information, getting information, be **connected with patients** and learn from each other.

**DZ:** In your teaching curriculum, do you include materials on telemedicine?

**PK:** Yes, for example I'm responsible for the **Digital working environment**, a **web-base course**.

We have a team of three teachers : one from healthcare, one from engineering and one is from design and we plan the content together. Next year I'll be the teacher in charge for the class **Healthcare technology** and it will be in English.

**DZ:** How important do you think it is for healthcare professionals, nurses especially, to keep up with all the options the Digital offers in terms of healthcare?

**PK:** In Finland we have the Digital boom and digitalized healthcare, meaning that we have a **nation-wide system** and patients can join the system with their bank cards or any other identification and, of course, our nurses must know the **benefits** and what support we can offer. Face-to-face **support** and counseling, but also **virtual**, as it offers so many ways to share information and be in contact. Of course, it is a challenge to education as well: there's a **digital divide**. Some people don't have enough knowledge about ICTs and they need to have supplementary education or training at work, but it will gradually come.

The doctors are more specialized and deal with complex issues. So the **guidance, mentoring and tutoring issues are more left to nurses**. That is our challenge. Actually in Finland, we are tackling that: I was vice-chair of the group nominated by the **Finnish Nurse Association** and we launched in January the very first **eHealth strategy for nurses** and there are 6 different elements of this strategy that would be valid up until 2020. I think all the countries need to implement strategies

that will allow **eHealth to support the nursing practice**; that nurses bring their expertise in the multidisciplinary development process and in collaboration with patients. Because patients themselves know quite a lot on how to use ICTs, especially young people.

The only thing to always keep in mind though is the **ethical and privacy issues**. Remember that Facebook is not the same as the Health Electronic Record. That is also a matter of education. Also, every time you send some kind of message in your own name there's a kind of watch over you and you must remember all of the data collection and the traces you leave behind.

**DZ:** You are also part of the Working group on Women a the ISFteH. Which direction of work do you see this group take?

**PK:** Most importantly we should keep the **neutrality** in our work when addressing the gender issue.

We should bring in **facts** and rely on facts and underline the positive elements of our work. We must be intelligent about which the direction we take.

**Healthcare and eHealth** is definitely an area that we should proceed in. Women are very present, I'm thinking mostly of nurses now, and most of them are women if we consider the global situation.

**Digitalization** is a new thing to consider and many things are to be learned, but many nurses, especially the older ones are **hesitant** in accepting changes brought by digitalization and it is something we need to work on.

Overall, speaking of the **Working group on Women**, we should push the opportunities for equality but in a politically neutral way."

<https://weobservatory.com/2016/06/30/medetel-interviews-dr-pirkko-kouri-isfteh-vice-president/>



## INTERVIEW WITH NURSE CLAUDIA C. BARTZ



To continue the tradition of **Medetel interviews**, here's a most interesting discussion that we had with the very experienced nurse Claudia C. Bartz:

"I'm Claudia Bartz, I live in Wisconsin, US. My lifetime as a nurse includes a career in the US Army, I retired in 1999 and then I spent about 5 years at the University of Wisconsin at the College of Nursing, teaching a few semesters and I was project director on 4 grants. Then I met the person at the University who was working for the International Council of Nurses and we decided, back in 2005, that I would work with her and since I spent 10 years with ICN. It is a really fantastic opportunity to see the international side of nursing ! Then in 2009 I started managing the new **ICN Telenursing network**.

About the same time the ISFteH invited the ICN CEO to give a plenary speech here at Medetel and David was unable to come and I ended up doing it instead of him. So that was my first introduction to Medetel and it was really great and from the start I found it was an **organization open to nursing**, partially because Frank Lievens is soliciting nurses and other professionals in addition to physicians and I've been coming every year ever since and presenting at least one paper.

Several years ago we started organizing **virtual nursing sessions** too and also during the year we had several educational sessions using the animated platform from the ISFteH. So, it's been really great, I really find it a very welcoming organization, I like the smallness of it and multidisciplinary nature.

My primary wish would be that more nurses could attend, unfortunately they don't have the money for registration and traveling.

Then I retired from ICN and University in 2015 and now I'm self-directed. I'll plan to stay as the chair of the Telenursing working group, make a contribution as much as I can.

**DZ:** Why an interest in Telenursing ?

**CB:** A long time ago, when I was working as a clinical nurse I worked in **critical care**. So you are exposed to more machinery there than in any other kind of care delivery and I was never frightened, I guess, by new technology. And with the army I lived in Belgium and Germany, Ethiopia ... around the world pretty much and I've seen a lot. And as distance education became more popular I could see that there was an **application already in existence for healthcare** and so many opportunities, I just joined the stream. It just makes so much sense to me. Now especially I live in a rural area and so much education needs to be done and so many opportunities exist for distance education.

**DZ:** Please explain what is Telenursing in practice.

**CB:** It's like asking what's nursing, depends on who you ask. **Telehealth nursing** is nursing practice that deals with people with healthcare needs or people with educational needs (such as nurses or families) **over distances** and barriers. In a city area a barrier might be not being able to get to a healthcare facility. Or another example: a nurse from Nigeria came to Medetel a few years ago and explained how she worked with the nursing minimum data set (you collect the minimum data on every client and you have an idea of the culture of the clients; he vital signs, their location, complaints). I was here at Medetel, she was presenting her work and I was just so excited to see that the idea of the minimum data made it all the way to Nigeria. It was so exciting how she was helping all these women **stay at home and not have to go the whole distance** to the care facility to get the treatment that she could deliver at their homes. To me that was really a neat example.

**DZ:** Please give a short resumé of your presentation about Telehealth Education for Nurses.

**CB:** What I'm trying to differentiate is normal education that we all need (all healthcare providers)

versus Telehealth education and it goes back to the definition. Some of my nurse colleagues say "every nurse uses at least a telephone, so every nurse is a Telenurse". But I don't really agree with that. I think the Telehealth nurse has a **greater commitment** to not only using the available technology but to **pushing further** so that more and new kinds of technology.

Telehealth education is of course more about the ICTs and the new ways they can be used to advance the healthcare but also the **issue of Data**. Because you are obviously generating even more data than before. You acquire it, you store it, you use it ... who's data is it? All the questions around the ethics of data are a big issue for automated systems.

I pointed out that Telehealth care providers need to be **motivated to learn** about new things and not think "this is what I trained with, this is where I'm staying". To my knowledge we don't really have any Telehealth for Nurses master's program, where as there are plenty of nursing informatics master's programs. But that's another specialty and Telehealth nursing gets buried under it".

<https://weobservatory.com/2016/08/12/interview-with-nurse-claudia-c-bartz/>





## ELINAZ MAHDAVY OF ORANGE HEALTHCARE



The last **Medetel** event – organized every year by the International Society for Telemedicine & eHealth (ISfTeH) – gave us an opportunity to chat with various professionals that work in Healthcare. This week we'll be publishing the most interesting parts and highlights of the interviews, starting today with Elinaz Mahdavy's (of **Orange Healthcare**) interview about eHealth strategies and our own WeObservatory projects.

"What I would like to see happening is that eHealth becomes a harmonized process, I mean in Europe, that all the countries have the same strategy on eHealth and mHealth. As you know Europe is very fragmented, so we still have a long way to go. But the EU policy makers are doing all they can for some years now and recently it is becoming more and more important to have a harmonized healthcare system in general and eHealth strategies in particular. That's where I would like to see Europe being unified go in terms of eHealth," says Elinaz Mahdavy.

When asked about the importance of community and gender targeted projects, like those that we support here at the WeObservatory, she added, "Project like these definitely have a place to be. As a woman I think we are important drivers. Moreover, a digital society can only be a benefit for many of those who – depending on the country they are in – are pregnant and/or are bringing up their kids on their own."

For more information about Orange Healthcare, **please visit their official website.**

<https://weobservatory.com/2016/06/21/medetel-interviewselinaz-mahdavy-of-orange-healthcare/>



## MIDWIFE FRANKA CADÉE ON HER PROJECT AND THE NEW APP



GLOBAL FORUM 2016, organized by ITEMS, an international firm in Information & Communication Technologies strategies, just took place this past September. The WeObservatory is traditionally moderating the Digital Communities Session and we have had the chance to sit down and talk to some of the session's speakers.

Here's the interview with midwife, researcher and

developer Franka Cadée on her project:

"My name is Franka Cadée, I am a Dutch midwife although not practicing any longer. I'm here at the Global Forum today to speak at the Digital Communities session about my twin2twin project. I have developed a method where midwives can work together across cultures which is different from development aid. It's a system whereby

you learn from each other. I think we've learned through the ages that there are certain sides to development aid that simply do not work because it's dominating from one culture to the other. So this is an answer to that.

What we are doing is working between midwives and at the beginning of the project try to see what the other culture has to offer: it's like a barter system. We discuss with one another what we want from each other and then start a partnership. And the partnership is based on reciprocity, which means that you give and you learn how to receive and you learn how to give back, it has to be an equal exchange. So it has lots of challenges, but through those challenges you find that midwives really get to know each other. I also believe that by giving you actually gain power, you don't gain power by only receiving – what I think is often wrong with development aid.

We do find that it is especially the "giving" aspect of the project that really makes the midwives feel strong; and strong midwives means that they work well and they take care of strong women that give birth.

We've developed a whole method that takes 4 years (although you can adapt it) with a series of workshops, people with similar interests are twinned with each other. We match people slightly on age, but mainly on interest so we have teacher midwives with teacher midwives, students with students, researchers with researchers. They work with each other and develop a small project together. What we've been fighting hard is the communication: language-wise it's hard, cross-cultures it's hard, but also Skype often doesn't work or phoning is expensive, we've been using WhatsApp a lot, but that is also hard sometimes. Getting the methodology across, how we work and when we meet has been hard to figure out. So having a Mobile App for this is really fantastic. It really helps the twins to understand what is the project, what is it about, what and when they can expect and we are hoping that they'll be able to communicate through the App at some point.

**DZ: For how long was the App idea around ?**

**FC:** It's been around for about a year and a half, before that we did a book – that is outdated by now since we re-developed the methods. And in the last few months with the help of the WeObservatory it's come to life. And it's really amazing to see and

I do believe that in certain countries midwives that don't have good Internet access all the time can download the App when they do have access and have it on their phone. Somehow it's really inspiring to see it this way, it's quite different having it for yourself than just only hearing about the methodology. Anyone who wants to do a twinning project can basically download the method.

**DZ: You mentioned you are doing a PhD. Can you please talk about the research you've been doing ?**

**FC:** I've been researching twinning in general (every single article on twinning is in the App). People have twinned for ages since the Second World War. But what you find in Healthcare is very unclear. People don't know what it is and what it stands for. I've done a concept analysis of the word twinning and it's about to be published in a Journal called Globalization and Health. Basically we've come up with a new definition of what twinning in Healthcare is and what are the basic ingredients of twinning in Healthcare. I'm also doing a study with all midwives who've done twinning, it's about 50 people. I'm asking them what are the critical success factors in twinning. And I'm doing some work on network analysis and results of their projects. I hope that in the future we'll be able to really compare the projects by their outcomes."

<https://weobservatory.com/2016/10/05/midwife-franka-cadee-on-her-project-and-new-app/>



## ON HEALTH AND INSURANCES TOMORROW WITH CÉCILE WENDLING



We are pleased to share with our readers yet another short but interesting interview conducted at the latest [Global Forum](#) with Dr. Cécile Wendling:

**DZ:** Please introduce yourself and tell us about your participation at Global Forum.

**CW:** I'm the head of foresight at AXA and I'm also a researcher, an associate researcher at the center of sociology of organizations in Paris (**Centre de sociologie des organisations** (CNRS-SCIENCES PO PARIS) in sociology of risks and catastrophes). Today we are at the Global Forum and I will speak at the Digital Communities Session about the future of health, I will explain what are **the new trends and I will talk about the health of tomorrow**. For AXA it is very important to consider the role of Digital Communities. We think that there are a lot of people that are not covered by insurance today: most of the time they are too "rich" to have a public coverage and too "poor" to have a private coverage. But we think that these people could access insurance with digital tools.

**DZ:** How do you see the Health Sector develop in the next decades ?

**CW:** The Health is going to be really revolutionized by **Big Data** first of all. There is a lot of Data Sets that we could not exploit before and that we will manage to use. This data is more and more "cross-sectorial", so you can cross data of mobility with data of health etc. Second, there will be **new actors** entering the game because there is a question of prevention and how well-being can enhance health. It is very important to know today which are the prevention tools that are working and those that are not working; one of the big issue is how do we measure the **impact of prevention**. Third, the new tools can **empower patients** so that they can have more information about their disease and be a more active actor in their treatment . This is of course going to change the relationship between the patient and all the people around him. Fourth, there will be a **new way for people** to share their problems and be insured globally.

We see more and more start-ups who bring together people who share a disease but also share coverage. This is an ecosystem that is moving quite fast.

**DZ:** Could you please repeat the example of women selling mangoes that you gave us during the conference preparation meeting ?

**CW:** Yes, it was about the fact that there are a lot of people that **are not covered by the insurance**. There is this example in Vietnam of women selling mangoes and water in front of bus stations and Bel – the group Bel – wanted them to sell their product La Vache qui rit® and the women refused at first. They were asked if there's anything that'll make them change their decision; the women **set obtaining a coverage for accidents as a condition**. Most of the time they arrive in the morning on a bicycle and if they have an accident it is the **entire family** who is at an income loss. Bel then promised to turn to an insurance company for a micro-insurance. The example is very interesting because there is no contact between the insurance company and the women but it's Bel who is embedding the insurance coverage into the program. This is also existing in Mexico with Oriflame. It is not only one story, there are many cases today. And we really think at AXA that this is the future of insurance, that **we can embed the insurance for those people who have difficulty to access it**. Another example that I can give is **parametric insurance in Africa** that we are working on. It is very difficult to cover farmers of agriculturists if there is a drought for example and nobody insures them. There's today satellite data that measures the level of humidity in the soil and as soon as the soil is under certain threshold of humidity an insurance system/ payment is triggered. Because of the satellite data and mobile payment we can reach people and afford to insure people we couldn't before. The future will certainly lie in the new tools for the better good of people.

<https://weobservatory.com/2016/11/01/on-health-and-insurances-tomorrow-with-cecile-wendling/>



## F. GAUDRY-PERKINS: MOBILE AND HEALTH, WHERE DO WE STAND ?



*"This brings us to the one of the biggest challenges in mobile Health : its ability to scale up. There is tremendous amounts of small projects and pilots that are showing great evidence, but everyone needs to move to the next stage"*

"Are we all connected ?" , a presentation made by Florence Gaudry-Perkins will give you a good idea on where we stand in terms of mobile connectivity in general and its role in advacing healthcare worldwide. A particular focus is made on Diabetes and mHealth as the presentation was made during the 2014 [Diabetes Education Study Group](#) Annual Symposium. And an important further reading suggestion is brought up: The Creative Destruction of Medicine: How the Digital Revolution Will Create Better Health Care by **Eric Topol**.

Florence Gaudry-Perkins is currently **International Director for Global Sector** at the headquarters of **Alcatel-Lucent**. Her current position entails relations with governments, multilateral and bilateral funds, as well as international organizations, an ideal platform to address the economic and social enabling effects of mobile technology and broadband in the developing world.

Her past work in higher education and familiarity with global health has influenced her in being a strong advocate of mHealth and mLearning for health in particular. She believes that global corporations now hold a responsibility in bringing their core technologies, products, services and competencies to form alliances with NGOs, Social Entrepreneurs, Foundations, Governments and international organizations to help develop sustainable business models which can then be easier to scale and replicate across regions and markets.

The video provided further down contains the entire presentation. However, here are some important citations :

*"Mobile -cellular penetration rates are 128% in the developed world and 89% in the developing countries. Its quite astounding, we've never in the history of mankind have had a communication technology as*

*pervasive and ubiquitous as this one. It opens up immense possibilities in terms of reaching out and it has great significance in the field of health and education.*

More and more people are connecting via mobile phones as opposed to computers. The idea of having an intelligent computer in your pocket is no longer a futuristic vision and we need to get ready for that. It is taking the health world longer to realize this is happening and I think we need to acceleratethe movement because this cannot happen without the health world coming on board and seeing the opportunities.

The following important aspects were brought up:

- Smartphones usage is growing worldwide, even in developing countries.
- mHealth projects are conducted worldwide. Some data from the 2013 survey done by GSMA, the association of mobile operators based in the UK : in Europe about 117 , in Africa 363 projects. We see tremendous innovation coming out of developing countries and it is something to keep in mind.
- The scene on mobile applications is different. As you can see : 3000 to 4000 applications coming of North America, in Europe a little bit less and in Africa only 21. **The question is , are they reaching people ? Only the top 5% of the Apps have reached more than 500 000 persons.** "

<https://weobservatory.com/2014/11/24/f-gaudry-perkins-mobile-and-health-where-do-we-stand/>

# NOTES

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