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The efficiency of the EmERGE pathway to provide continuity of care for medically stable people living with HIV in Belgium

Eduard J. Beck, Sundhiya Mandalia, Platonas Yfantopoulos, Christopher I. Jones , Stephen Bremner, Jennifer Whetham, Marie Wittevrongel and Ludwig Apers

Institute of Tropical Medicine (ITM)

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The life-expectancy of people living with HIV (PLHIV) has increased due to the earlier and increased use of antiretroviral drugs (ARVs) [1]. The life-expectancy of PLHIV now approximates that of people not living with HIV [2]. Increased life-expectancy will increase the number of PLHIV including those aged 50 years or older [3]. Non-HIV cancers, cardiovascular disease, and other non-communicable diseases (NCDs) are the most common comorbidities in older PLHIV and the most common cause of death of PLHIV in high-income countries. These NCDs also are becoming more prevalent in low- and middle-income countries [4,5] and PLHIV will increasingly need to use HIV and non-HIV health and social services.

As part of their HIV-response, many countries are monitoring and evaluating the use, cost, outcome and impact of health services for PLHIV and tracking them across sites [6], which can assist in developing more integrated and cost-effective health services [7]. Mobile Health (mHealth), or the use of wireless technology to deliver health services and information using mobile communication devices, such as mobile phones or other devices [8,9], plays an important role in linking and integrating health services.

An increased use of mHealth has been seen in Belgium [10], the United States [11] and other countries as part of their respective responses to their 2020 COVID-19 epidemic. mHealth provides an increasingly important role to ensure continuity of medical and paramedical care in countries, including the management of acute and chronic diseases, such as cancer services [12]. The published studies on mHealth interventions, however, indicate the variable effectiveness of mHealth tools, for those that were HIV-specific [8,9,13] or mHealth tools for other chronic diseases [14,15]. Most of these studies were performed in high-income countries; however, mHealth is increasingly being used in low- and middle-income countries [16–21].

The Evaluating mHealth technology in HIV to improve Empowerment and healthcare utilisation: Research and innovation to Generate Evidence for personalised care (EmERGE) Project co-designed, developed and implemented a new digital mHealth Pathway, including a mobile health application (App) [22]. This allowed for the electronic transfer of personal health information to people living with medically stable HIV and communication with their caregivers [12].

A recent review identified nine functions that an mHealth App ought to fulfil [9]. These functions covered many of the communication aspects, but two important aspects were missing: firstly, that data collected, transmitted, and stored at either end are protected in terms of their confidentiality and security (Table 1); secondly such technology needs to be affordable and efficient [23].

Most studies to date have not included the cost for developing, implementing, and supporting these mHealth Apps, let alone assess their cost-effectiveness or potential cost-savings that mHealth potentially provides. The need for efficiency studies was recognized more than two decades ago [24,25], but few cost-effectiveness, cost-minimization or cost-benefit studies have been performed since [8,9,26]. Such information gaps necessitate the development and implementation of long-term national research agendas on mHealth [26].

This study assessed the cost-effectiveness of developing and implementing the EmERGE Pathway across five HIV clinics in five European countries: England, Croatia, Portugal, Spain and Belgium. This study investigated the cost-effectiveness of implementing EmERGE at the Prince Leopold Institute for Tropical Medicine (ITM), Antwerp, Belgium. The objectives of this study were as follows: 1) to calculate the annual mean use of services per patient-year (MPPY) one-year pre- and post-implementation of EmERGE; 2) to calculate unit costs of outpatient services provided by departments to EmERGE participants; 3) to calculate the average annual costs per patient-year (PPY) one-

Table 1. Eleven requirements of a tele-medicine system [9*, 13**].

-
- (1) Patient-provider and peer communication*;
 - (1) Medication and appointment reminders*;
 - (1) A medication checklist, pill identification function and list of current and discontinued medicines*;
 - (1) Laboratory reports (CD4 count, viral load, sexually transmitted infections, glucose and complete blood count)*;
 - (1) Pharmacy information*;
 - (1) Nutrition and fitness trackers*;
 - (1) Resources, links to social services, substance abuse support, video testimonials, case-management*;
 - (1) Settings (profile picture, password and alerts)*;
 - (1) A search function.*
 - (1) Protecting the confidentiality and security of personal information at rest and in-transit**
 - (1) Affordability and efficiency of the technology**
-

year pre- and post-implementation of EmERGE; 4) to calculate the efficiency of the implementation of the EmERGE Pathway at ITM and whether the introduction of the Pathway is cost-effective or, if the outcomes remain the same, minimizes costs.

Methods

Context

The HIV/Sexual Health Clinic at ITM provides outpatient services for PLHIV or those with other sexually transmittable diseases. It was the main service used by EmERGE participants and the focus of a micro-costing study. Inpatient services for this Institution are provided by University Hospital of Antwerp. The clinic employs a range of medical and para-medical professionals that jointly decide with their patients the course of treatment. Supporting these clinical services are administrative staff who manage medical records, provide human resource services, and collect information. Once patients arrive at the Clinic, their demographic details are collected, bloods taken and send to the in-house laboratory. Results are electronically received by the treating physician and discussed with their patients once all laboratory results are known.

As per the EmERGE protocol, one visit per year was an electronic 'visit' when the physician reviewed the results of blood tests electronically and sent comments on the laboratory results via the EmERGE App to the patient. If everything was 'normal', prescriptions for the ARV treatment were sent to the patient by post, and they could obtain their ARV drugs at external pharmacies, free at point of delivery. The other annual visit was a routine management face-to-face visit.

Data collected

Participants were recruited from those PLHIV with stable HIV infection and the criteria used to select them at each of the EmERGE sites including ITM, are

Table 2. Inclusion and exclusion criteria for EmERGE participants at ITM [26*].

<p><i>Inclusion criteria:</i> Patients who meet all of the following criteria were eligible for this study:</p>	<ul style="list-style-type: none"> ● Documented HIV infection ● Aged at least 18 years old ● Able to give informed consent ● In possession of a smartphone, tablet, or similar technology supporting the mHealth platform ● Clinically stable on anti-retroviral therapy (ART). This was defined as receiving ART for at least 1 year and unchanged regimen for at least 3 months, 2 consecutive undetectable viral load measures (<50 copies/ml), no current pregnancy and without any new WHO clinical stage 2, 3 or 4 events within the previous 12 months*.
<p><i>Exclusion criteria:</i> Patients who met one or more of the following criteria were excluded from the study</p>	<ul style="list-style-type: none"> ● Aged less than 18 years ● Pregnant ● Participating in a clinical trial or receiving an investigational medication ● Unable to comprehend the patient information sheet ● Unable to comprehend the instructions for using the mHealth platform ● Considered for any other reason by their regular physician to be unsuitable for study participation

displayed in Table 2 [27]. Demographic data, longitudinal data on the use of services, and primary and secondary outcomes were collected on EmERGE participants pre- and post-implementation of the EmERGE Pathway (Figure 1). CD4 counts and viral load comprised primary outcome measures. Participants completed questionnaires at entry to the study – baseline – and at 12 months post-implementation of EmERGE, on out-of-pocket expenditure, quality of life (PROQOL-HIV) and patient activation (PAM-13). A micro-costing study was performed involving all departments that provided outpatient services for EmERGE participants and relevant unit costs calculated. Combining these data allowed the annual use, cost, and outcome of HIV services by EmERGE participants to be estimated.

Costing Health Facilities

Two general approaches exist to estimate the unit cost of any given service: the 'top-down' and the 'bottom-up or ingredient-based' costing methods [28,29]. The latter method is preferred but dependent on the availability of detailed data: where possible the ingredient-based approach was used [30].

Process data

Individual process data refer to the use of services by individual EmERGE participants during the study period. As EmERGE participants were medically stable, the

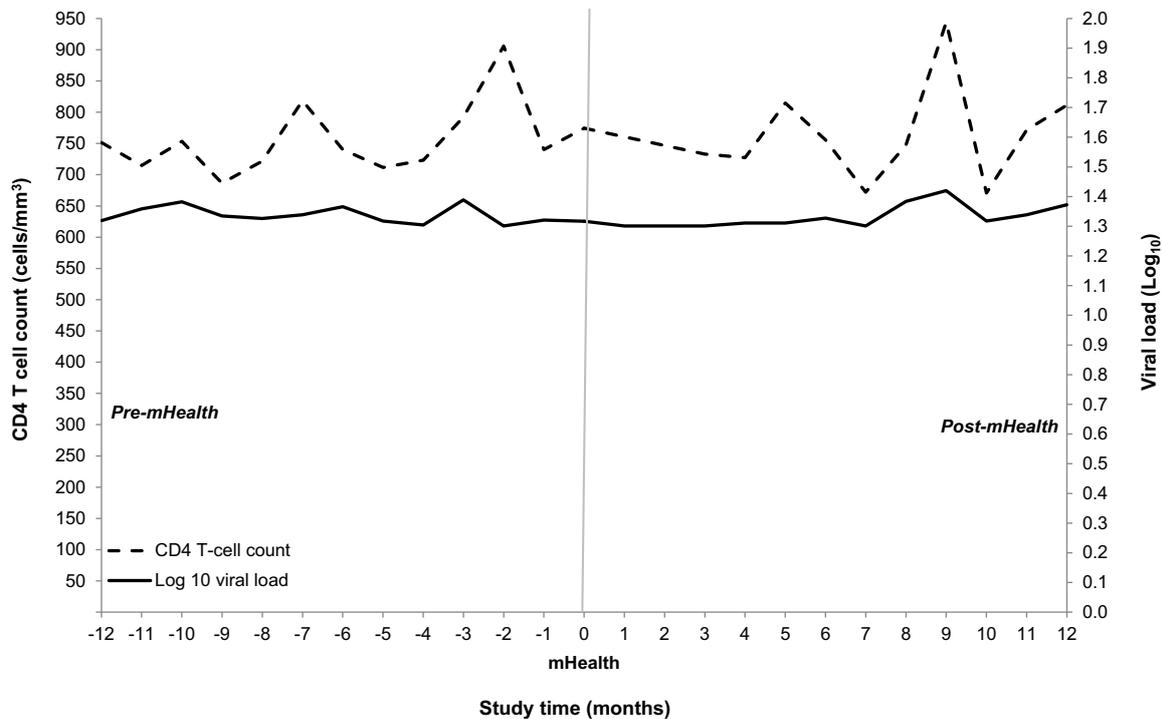


Figure 1. Mean CD4 cell count and HIV viral load at implementation of EmERGE Pathway (month 0) and twelve months before and after of start of follow-up.

Table 3. Estimated unit costs for ITM HIV outpatient visits (2017 financial data) [30].

ITM	Cost/Unit cost
Unit cost per EmERGE patient Outpatient clinic visit	€162
Unit cost per EmERGE patient Central Laboratory test	€8
Unit costs per EmERGE patient Viral Load test	€25
Unit costs per EmERGE patient CD4 test	€2

focus of the costing exercise was on the HIV outpatient services, one-year pre- and post-EmERGE implementation. This included outpatient visits, tests and procedures performed, drugs prescribed, and costs incurred by supporting departments.

Unit costs

The micro-costing study at the ITM was based on the UNAIDS Costing Manual [28] and UNAIDS Costing Workbook [29], and estimated unit costs of outpatient services used by EmERGE participants. The unit costs were combined with data on the mean use of services to calculate the annual costs of outpatient services pre- and post-implementation for EmERGE patients and the cost-effectiveness or cost-minimization of this intervention.

As part of the micro-costing exercise, departmental workload or process data and financial data were collected from departments involved with providing outpatient services for EmERGE participants. A review of individual process data established which services were used by them; departmental financial data were

collected using the SCOPE framework: *Staff, Consumables, Overhead, Procedures and Equipment costs* (SCOPE). Departmental process data indicated the workload generated by EmERGE participants. Unit costs are displayed in Table 3 and how they were calculated is described elsewhere [30]. The estimated unit costs of outpatient services were combined with individual level process data to calculate annual costs of outpatient services [31].

Statistical Methods

All participants who had a baseline visit contributed to the data and analyses presented. Linear mixed models were used to calculate difference in averages (DAVG). Time weighted changes of CD4 count and viral load were analysed over a two-year period and measured by time point changes during one year before recruitment to EmERGE, and one year after recruitment [32]. MIXED procedure in SAS was used by fitting routine values of CD4 counts and viral loads results as dependent variables. Independent variables included the fixed effects of study visit time points. A covariance matrix was used to model the within patient errors. Estimates of effects are based on MIXED models and assume any missing data were missing at random. Trends over time are presented as point estimates derived from the models. Viral load data were transformed logarithmically to stabilise their variance.

The mean number of services used per patient-year (MPPY) was calculated using methods employed previously [33–35], based on the following formula:

Equation (1) Mean Per Patient-Year (MPPY) Calculation Formula

$$M = \frac{\sum_{i=1}^n \sum_{j=1}^k S_{ij}}{\sum_{i=1}^n \sum_{j=1}^k (t_{ij} - t_{i(j-1)})} \times 365 \quad (1)$$

where

n = total number of individuals;

k = day of censoring;

S_{ij} = use of service by individual i on jth day;

t_{ij} = number of days of follow-up for individual i;

M = mean of services S per patient-year

The denominator consisted of the total duration of follow-up for all patients during a calendar year, from when they were baselined into the study to one-year pre-study entry. The data were left censored at one-year pre-baseline visit. Whilst post-mHealth data were right censored at either one year since baseline visit if patients were still under follow-up at one year, or if they had died during follow-up then their date of death, or if they were lost to follow-up, whichever came first. Numerators were calculated by summing the use of outpatient services and MPPY were calculated (Equation 1). Exact Poisson 95% confidence intervals (CIs) were estimated for MPPY using the distribution of the observed number of outpatient visits divided by the total duration of follow-up for all patients during a calendar year; statistical analyses were performed using SAS version 9.4 [36].

Average annual cost of services

Average annual cost PPY estimates for HIV outpatient services for an EmERGE participant were produced by multiplying the mean number of services used by their respective unit costs. The total annual cost for providing EmERGE services was obtained by adding the annual costs for outpatient visits and tests performed, and cost of drugs for EmERGE participants. Costings were performed from a societal perspective.

Primary and secondary outcome measures

Primary outcome measures were CD4 count and viral load measurements in the year before and after the introduction of the EmERGE Pathway. Secondary outcome measures included changes in the PAM-13 [37] and PROQOL-HIV [38] from baseline month 0 (baseline) to month 12, or changes in EmERGE participants' patient activation and quality of life measures, respectively.

Cost-effectiveness analyses

Incremental cost-effectiveness ratios (ICERs) were calculated based on the annual costs, primary and secondary outcome measures before and after the implementation of mHealth using the following formula [39]:

$$\text{ICER} = \frac{[\text{CostsA} - \text{CostsB}]}{[\text{OutcomeA} - \text{OutcomeB}]}$$

Out of pocket expenditure for EmERGE participants

Study participants were also asked to complete a questionnaire related to their socio-economic background, time off work for clinic appointments, distance to visit the ITM, return travelling time and costs for clinic appointments and personal details, at recruitment and twelve months later.

Results

Of the 244 EmERGE participants at ITM, 90% were men, and all were followed up one year before and after implementation of mHealth from 29 August 2016 till 30 October 2019. Of all participants, 86% self-identified as white, 10% as black, 3% Asian and 2% Hispanic. Mean age at study entry was 44.9 years (95% CI: 43.6 to 46.2); 75% described themselves as 'men who have sex with men', 18% had sex with a member of the opposite sex, 3% bisexual and 5% 'other'.

Of those whose employment status was known, 81% had full-time employment with a median 40 hours work-week (IQR: 40 to 45 hours); 12% reported their gross monthly income was less than €1500, for 24% of participants it ranged between €1500 to €1999, and 44% reported their income to be more than €2000 per month. Thirteen percent of participants received some additional social benefit; of these, 42% had income support and 24% received pension credits. Additional median monthly income for them was €1200 (IQR €896 to €1400).

The median number of annual sick days 3 months before recruitment was 0 days (IQR: 0 to 1); 59% of participants did not take a day off work for a clinic visit, while the remaining 41% did so to attend for a consultation, blood tests or pick up medication. The median distance travelled to the clinic was 11 km (IQR: 4 km to 35 km), the median travel time was 1.8 hours (IQR: 1 to 2.5 hours) and the median cost of this return journey was €3.6 (IQR: €0 to €10).

Table 4. Annual use and cost of outpatient services pre- and post-mHealth ITM.

	Pre-mHealth – N = 244			Post mHealth – N = 244		
	Mean	95% CI lower limit	95% CI upper limit	Mean	95% CI lower limit	95% CI upper limit
Outpatient visits MPPY	2.6	2.4	2.8	1.8	1.6	2.0
Pathology tests MPPY	109.7	108.1	111.2	106.5	105.2	107.9
Viral load tests MPPY	3.5	3.2	3.8	2.2	2.0	2.4
CD4 counts MPPY	3.4	3.1	3.7	2.2	2.0	2.4
	Average costs	95% CI lower limit	95% CI upper limit	Average costs	95% CI lower limit	95% CI upper limit
Outpatient visits costs PPY	€ 418	€ 381	€ 458	€ 289	€ 262	€ 319
Pathology tests costs PPY	€ 877	€ 865	€ 890	€ 852	€ 842	€ 863
Viral load tests costs PPY	€ 87	€ 80	€ 94	€ 55	€ 51	€ 61
CD4 tests costs PPY	€ 7	€ 6	€ 7	€ 4	€ 4	€ 5
Total annual outpatient costs PPY without ARVs	€ 1,389	€ 1,332	€ 1,449	€ 1,200	€ 1,159	€ 1,248
Annual ARV costs EmERGE Participants			€8837			
Total annual outpatient costs PPY with ARVs	€10,226	€10,169	€10,286	€10,037	€9,996	€10,085

Estimated unit and annual costs

For each department, process and SCOPE data were collected. The process data represented departmental workload, while the SCOPE comprised the financial data. The total annual departmental cost was obtained by summing the SCOPE financial data and dividing this by the annual workload to obtain the unit cost of that department (Table 3). All the SCOPE data were collected for the financial year 2017 [30].

Annual use and cost of services pre- and post-mHealth

Outpatient visits decreased from 2.6 MPPY (95%CI: 2.4 to 2.8) to 1.8 (95%CI: 1.6 to 2.0) between periods, a reduction of 30% (Table 4). The mean number of all tests performed also decreased between periods. The average annual cost PPY decreased from €1,389 (95%CI: €1,332 to €1,449) pre-EmERGE to €1,200 (95%CI: €1,159 to €1,248) post-implementation of EmERGE, a 14% reduction; this reduction was associated with a reduction in outpatient visits and tests performed (Table 4).

The annual service cost excluded the annual cost for ARVs. In Belgium ARVs are covered by medical insurance and are free at point of pick-up. Based on the specific ARV drug combinations used by the EmERGE participants, the annual cost for ARVs amounted to €8,837 in 2017/2018. The total annual cost for outpatient services for EmERGE participants including ARVs decreased from €10,226 (95%CI: €10,169 to €10,286) to €10,037 (95%CI: €9,996 to €10,085) a reduction of 1.3%. This reflects the pre-dominance of ARV prices in determining the annual cost of HIV outpatient services for this group of patients (Table 4).

Primary and secondary outcomes pre- and post-mHealth

Median CD4 count at the start of the study was 745 cells/mm³ (IQR: 573 to 913 cells/mm³) and CD4 counts remained stable 12 months before and after the introduction of the EmERGE Pathway (Figure 1). All participants had baseline viral load of less than 50 copies/ml (Table 1) and virological suppression was sustained over time (Figure 1). PAM-13 and PROQOL-HIV measures for EmERGE participants, which included indicators of physical and mental health, did not substantially change from baseline during the first year after the introduction of the EmERGE Pathway (Table 5).

Discussion

This is one of the few studies that estimated the efficiency of the introduction of an electronic digital pathway. A 30% reduction in the use and 14% reduction in cost of outpatient services was observed in this cost-minimization study, after the introduction of the EmERGE Pathway at the ITM. As the primary and secondary outcome measures did not change substantially, the introduction of the new Pathway, minimized the cost of providing the outpatient service. The introduction of the Pathway in each of the other four EmERGE sites also resulted in similar cost reductions [40–42].

Participants remained immunologically and virologically stable after the introduction of the mHealth App, with no substantive changes in patient activation, mental health or quality of life [43]. Extending the use of the Pathway to all PLHIV could increase the savings made. However, this study was only performed on a select group PLHIV that were medically stable, 90% who were men, 86% who were white, which limits

Table 5. Median and IQR for PAM-13 and PROQOL-HIV at months 0 and 12 post-mHealth implementation at ITM.

	Month 0		Month 12			
	Median	IQR	Median	IQR		
PAM-13	67.8	(58.1–77.7)	70.2	(58.1–77.7)		
PROQOL-HIV	Month 0		Month 12			
	n	Median	IQR	n	Median	IQR
Physical Health and Symptoms	212	83.3	73.6 to 97.2	212	83.3	69.4 to 97.2
Body Change	209	93.8	75.0 to 100.0	213	93.8	75.0 to 100.0
Social Relationships	214	100.0	100.0 to 100.0	215	100.0	87.5 to 100.0
Intimate Relationships	213	83.3	66.7 to 100.0	215	91.7	66.7 to 100.0
Stigma	211	62.5	37.5 to 87.5	214	75.0	50.0 to 100.0
Emotional Distress	211	100.0	81.3 to 100.0	214	100.0	75.0 to 100.0
Health Concerns	210	81.3	68.8 to 100.0	215	81.3	68.8 to 100.0
Treatment Impact	206	92.5	87.5 to 97.5	209	92.5	87.5 to 97.5

the interpretation of this study. To extend this service to PLHIV from more diverse backgrounds, who are less stable medically, living with comorbidities or other patients living with chronic diseases, additional studies would need to be performed.

ARVs were the main cost drivers for this group of PLHIV hence the overall reduction of annual costs of services for this group of patients was only 1%. The cost of ARVs in Belgium is not covered by hospitals, but fully reimbursed by medical insurance and free at point of delivery. The annual average ARV drug costs for EmERGE participants amounted to €8,837 and overall outpatient costs decreased from €10,226 (95%CI: €10,169 to €10,286) to €10,037 (95%CI: €9,996 to €10,085). One way of reducing the costs of ARVs is switching to quality-assured and affordable generic forms of the ARVs, although the increased use of generic drugs is not without its own issues [44]. Healthcare costs can also be reduced when using a single daily pill regimen [45], especially generic formulations. In addition, the increased use of two-drug combinations like 2DR that include Dolutegravir (DTG), not only provide additional therapeutic options [46], they reduce drug costs and are cost-effective [47], have reduced toxicity and are well tolerated by most users [48].

In 1996 the cost for the treatment and care for asymptomatic Belgian PLHIV was estimated at US \$28,476 per annum [49], while in 2015 the annual cost for treating PLHIV was estimated at €12,324 per annum [50]. The 2015 estimate might be higher than the annual cost estimated for EmERGE participants, as the 2015 study included PLHIV with different comorbidities, degrees of immunosuppression and psycho-social needs.

The introduction of the Pathway also resulted in other changes in the way staff interacted with participants, which may have added to the reduction in costs. This was unfortunately not quantified during the study, but medical staff indicated that they were able to spend more time on PLHIV with more complex disease [51].

On the whole, the Pathway was well received by users, though some privacy concerns remained especially among black and migrant women. Most participants preferred to use the App at home and away from their work, which empowered them and reduced risk of disclosure. While most agreed that the Pathway provided greater privacy, some remained anxious that the App could be seen on the phone by friends or family members, who then could ask questions [51]. The App enabled participants to become less dependent on going to the clinic for routine consultations and provided participants with autonomy.

Most participants found the test results function the most important; participants, including women and migrants, enjoyed having the EmERGE mHealth App and following the new Care Pathway [51]. The App reduced travelling and waiting times. While virtual sessions were more formal and more focused on results, they were also less likely to be interrupted. Face-to-face meetings, however, provided a better opportunity to develop close relationships, facilitate open dialogue and negotiations over complex tasks [51].

Most ITM staff were cooperative, responded quickly to queries and tried to obtain the data requested: a good network of contacts was built up during the costing visit. Individual process data could fairly easily be obtained, departmental process and SCOPE data were more difficult to obtain. Some staff indicated that 'too much time had already been spent on getting information for this study'. Eventually the relevant data were obtained, but only after this person had left his post [30].

More difficult was to get financial data, especially overhead costs and assumptions had to be made to apportion them. Collecting the actual percentage of the Finance Department's budget spent on overheads proved challenging and its overhead's budget was assumed to be similar to that of the Human Resources Department. Detailed staff costs could be obtained for the Outpatient Department, but they were not available for the other departments. As the

depreciation costs of equipment were missing in many departments, an annual depreciation rate of 10% was assumed.

Challenges were also met in the laboratories, and some of the information had to be obtained indirectly from other sources. It proved impossible to collect the laboratory process data on each of the tests, and one departmental informant indicated that this would be 'too burdensome to compute'. Some of these figures had to be estimated by making assumptions and inferring the total number of tests performed in laboratories during the study period [30].

The EmERGE study was successfully implemented in five different European countries, which demonstrates its applicability in different cultural settings and different health-care systems and countries [40–42]. So far it only involved medically stable PLHIV and follow-up was still relatively short.

The introduction of the EmERGE Platform has reduced the number of outpatient visits and tests, with a concomitant reduction in the annual cost of outpatient services for people living with medically stable HIV. There were no substantial changes in the primary and secondary outcomes of EmERGE participants in the post-EmERGE period. Due to the cost of ARVs, the overall reduction of annual cost service provision has been relatively small; greater savings could be made, by extending the use of the Pathway to all PLHIV, and any savings made would enable these resources to be channelled into other clinic services.

Similarly, developing and implementing mHealth pathways for people with acute or chronic diseases may generate additional savings. mHealth and teleHealth in general have been successfully used within programs tackling the COVID-19 pandemic [52] and are being used for other chronic diseases including cancer services [12].

The expanding eHealth infrastructures in countries raise the necessity of protecting the confidentiality and security of personal health information. This requires protecting information at-rest – on the person's phone or the institutional server(s) – and in-transit, and such protection is of paramount importance [53]. The range of issues and solutions involved with protecting personal health information have been described elsewhere [23] and paper-based and electronic tools have been developed and implemented to investigate the level of protection for personal health information at facility, data warehouse and national levels [54]. Once implemented, adopted protocols should be regularly reviewed and, if necessary adapted, and improved at each of these levels.

The development and implementation of eHealth and mHealth technology has been expanding rapidly over the last decade, a process that was accentuated and hastened by the COVID Pandemic. For instance, in Belgium, the Federal Government started the

mHealthBelgium initiative in 2016, which evolved into the *mHealth Pyramid* initiative in 2018 [55]. This provides a certification process to ensure that the App is a CE certified medical device, it is safe to use as are the personal health data collected, and once certified, ensures reimbursement of telemedicine and the use of health apps [55]. Governments, apart from ensuring high standards of mHealth Apps and Clinical Pathways introduced, also need to play a role in providing financial and resource incentives to enable healthcare facilities, and the national healthcare system as a whole, to develop and use these new tools in the effective and efficient provision of HIV services and other chronic diseases.

The issues raised in this study are, *mutatis mutandis*, also relevant for people with other chronic diseases and funding should be sought towards the development and implementation of similar pathways for other diseases. mHealth is an important component of a country's health information infrastructure, which enables tracking the use, cost, outcome, and impact of health services by individuals across different facilities in a country. Linking personal health information across sites and over time is an integral part of achieving *Universal Health Coverage* [56]; apart from assisting the development of longitudinal personal health records, it also provides information to monitor and evaluate the use, cost, outcome and impact of local, sub-national and national health services.

Disclosure statement

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ORCID

Christopher I. Jones  <http://orcid.org/0000-0001-7065-1157>

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