

## RESEARCH ARTICLE

# Health as an investment: Social marketing to facilitate investment in an electronic medical record system in a resource-constrained community in the Philippines

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## ABSTRACT

**Background:** Health information systems (HIS) such as Electronic Medical Record (EMR) systems are essential in the integration of fragmented local health systems. Investing in HIS is crosscutting; it can address multiple interrelated health system gaps. However, public health authorities, especially those in resource-constrained communities, are often faced with the dual challenge of upgrading and digitalizing local HIS and addressing other more apparent health system gaps.

**Objectives:** The study aimed to identify and document strategies that not only motivate policy change towards adoption of electronic HIS but also address other health system gaps.

**Methodology:** The author, in his capacity as a local health official in a resource-constrained community, developed, implemented, and documented a social marketing strategy wherein community stakeholders were influenced to invest in an electronic medical record (EMR) system because it was shown to also have the capacity to address other priority health system gaps identified.

**Results:** The strategy, based on situational, stakeholder, and risk analyses, prompted local governance to first invest in improving the delivery of services accredited by the national health insurance program (PhilHealth), for which reimbursements would require electronically submitted claim forms. Community stakeholders then supported the proposal to invest in an EMR system because they were persuaded that it can facilitate increased financing from PhilHealth claims reimbursements, which could be used to enable not only improvement in existing health services but to also initiate other health programs.

**Conclusion:** Social marketing using the perspective of health as an investment influenced stakeholders to invest in an EMR system.

**Keywords:** *public health, health systems, health information systems, electronic medical record systems, health communication, social marketing*

## Introduction

In the health systems approach, health information is one of the two building blocks considered by the World Health Organization (WHO) as crosscutting, the other being leadership and governance [1]. Two building blocks utilize health information, namely, (1) leadership and governance and (2) health workforce, to make decisions and policies related to the management of two other building blocks, (3) health financing and (4) medicines and other technologies, to create a more responsive (5) health service delivery. Without health information, the leadership and health workforce of a health system are at risk of making decisions and policies that may result in the delivery of health services that is neither

efficient nor accessible, thereby exacerbating existing inequities. Health Information Systems (HIS) provide strategic value for the health system as it provides the evidence for action planning, monitoring, and tracking of progress.

The advent of electronic HIS such as Electronic Medical Record (EMR) systems has allowed data to become even more readily available and reliable compared to traditional paper-based HIS. HIS have the potential to bridge the gap between the demand for the provision of health care and the available supply, making it a valuable investment especially in developing countries [2]. However, in Asia, HIS are seldom integrated in

local health systems and available literature points to the use of HIS primarily for disease- or program-specific monitoring and surveillance. [3,4,5]. Health information systems in resource-constrained settings are usually paper-based, and the data gathered by primary care facilities are used more for reporting aggregate statistics to the government than for local decision-making [6]. Furthermore, public health officials in resource-constrained settings often face the dual challenge of 1) needing to upgrade and digitalize HIS, and 2) addressing other more apparent health system gaps. These interrelated challenges are also affected by systems, people, process, and product factors, which vary per setting [3]. In the Philippines, recent health policies have begun recognizing the importance of strengthening the use of and investing in electronic HIS. These policies, however, have also exposed the limitations of local and national capacities to integrate electronic HIS in the health system and sustain its implementation. For example, in 2014, the Philippine Health Insurance System (PhilHealth), the national health insurance program, included an EMR system as an additional requirement for continuous accreditation of rural health units (RHU) as Primary Care Benefit (PCB) providers [7]. However, many local government units (LGUs) were unable to comply, and PhilHealth had to move the deadline for compliance twice, eventually reaching 2017, and to also implement a temporary offline electronic submission scheme [8,9]. In 2019, the Universal Healthcare (UHC) Act was signed into law, which mandated the Department of Health (DOH) to consolidate “fragmented providers into province-wide and city-wide health systems with clinical, financial and management integration”, entailing a system whereby resources such as health information are shared between local health systems [10]. However, to this day, there are still LGUs without functional electronic HIS, making local health systems integration even more challenging.

From the preceding, electronic HIS such as EMR systems shall arguably play a central role in both health financing and local health systems integration in the coming years. It also means that the implementation of the UHC Act could be protracted, as communities without functional EMR systems will be unable to fully integrate with its other counterparts in province-wide health systems, thereby preventing all Filipinos from benefitting equally from the provisions of the UHC Act, such as zero out-of-pocket essential healthcare services.

The COVID-19 pandemic also further highlighted the gaps in the local and national health information infrastructure. In the Philippines' COVID-19 response, there were incidents of late reporting of COVID-19 statistics and calls to 'fix the gaps in COVID-19 data reporting' [11,12]. Less than a year after

the signing of the UHC Act into law, public health officials were suddenly faced with the dual challenge of pursuing local health systems integration and responding to the threat of the COVID-19 pandemic [13].

There is a dearth of available materials on how electronic HIS such as EMR systems are adopted and integrated in local health systems in the Philippines, especially in resource-constrained settings. Furthermore, there is no available literature on how social marketing can facilitate the adoption of EMR in local health systems in the Philippines. Hence, there is a need to identify and document strategies that not only motivate policy change towards the adoption of electronic HIS but also address other health system gaps. The author, in his capacity as a Municipal Health Officer in a resource-constrained community, developed and implemented a social marketing strategy wherein the members of the Local Health Board (LHB) were influenced to invest in an EMR system because it also addressed other priority health system gaps identified.

Social marketing is defined as “a process that uses marketing principles and techniques to change priority audience behaviors to benefit society as well as the individual” [14]. Social marketing “seeks to develop and integrate marketing concepts with other approaches to influence behavior that benefit individuals and communities for the greater social good” [15]. Social marketing's main components of “creating, communicating, delivering, and exchanging offerings that have positive value for individuals, clients, partners, and society at large” establish and strengthen partnerships among the stakeholders of a local health system and help build trust. Social marketing recognizes that “work must be done 'with' people, not 'for' or 'on' behalf of people,” and “requires a more nuanced understanding of the social, cultural, behavioral and structural dynamics at work to influence” decision making [14]. Former DOH Secretary and Senator Juan Flavio Velasco's campaign against smoking, “Yosi Kadiri”, is a prime example of a public health campaign that utilized social marketing principles. Yosi is slang for cigarettes in Filipino, while kadiri means disgusting. Launched in the 1990s, “Yosi Kadiri” was still remembered long after it was implemented and was even brought back in 2019 as part of the joint campaign by the DOH and the Department of Finance (DOF) to raise excise taxes on cigarettes [16,17].

## Methodology

This study employed an effectiveness-implementation hybrid study design where intervention and observation occurred simultaneously as the author implemented and

documented a social marketing strategy that facilitated the investment in an EMR system by the members of the LHB of a resource-constrained community in the Philippines.

Prior to creating the social marketing strategy, situational, stakeholder, and risk analyses were conducted. The outputs of all analyses performed became the input for creating the social marketing strategy. The author performed a situational analysis with the goal of identifying health system gaps by reviewing local health office records and consulting national government agency counterparts such as provincial DOH representatives who were knowledgeable about the local health system. These activities helped identify gaps for each building block of the local health system, namely: governance, health workforce, medicines and technology, health financing, health service delivery, and health information. The health gaps identified were then ranked by evaluating their (a) impact on the community and its urgency, (b) availability of solutions and resources, and (c) political and ethical relevance. The author then proceeded to perform a problem tree analysis for the gap identified to have the highest priority.

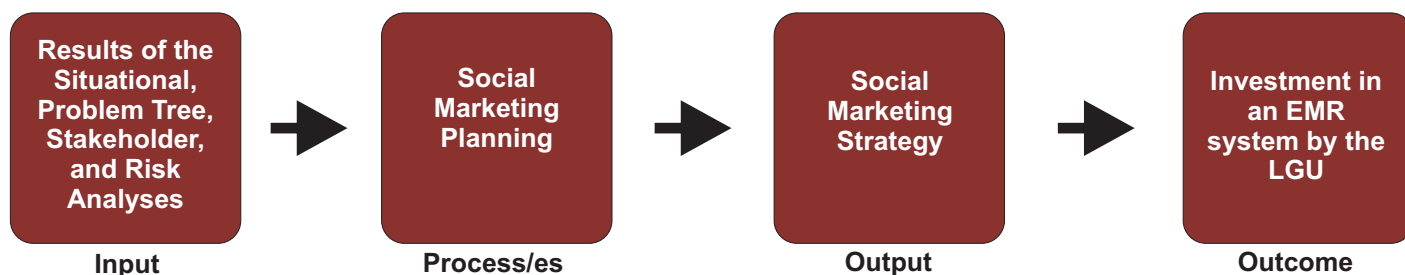
The author then performed an analysis of stakeholders of the local health system by assessing the level of influence of individual stakeholders relative to one another and their interests in investing in an EMR system. The influence and interest of each stakeholder were plotted on a graph, with interest in the horizontal axis and influence in the vertical axis. This analysis was not performed with the identified stakeholders. The stakeholder analysis helped to identify partners in and targets of the social marketing campaign.

Finally, a risk analysis was performed by listing down on a table foreseeable events, especially those that were political in nature, that could affect implementation of the social marketing with the goal of identifying interventions that minimize risk. Table 1 summarizes the information obtained from the situational, stakeholder, and risk analyses.

The resulting social marketing strategy was presented to the LHB. Upon approval of and support by the stakeholders for the social marketing strategy, it was implemented from July 2018 to July 2019.

**Table 1.** Summary of the Situational, Stakeholder, and Risk Analyses Performed.

<b>Situational analysis</b>	Assessment of the six building blocks of the local health system through the following: <ol style="list-style-type: none"> <li>1. Review of Municipal Health Office records (Local Government Unit scorecard for health, Annual Operation Plans (AOP), FHSIS reports, etc.)</li> <li>2. Consultation with the health workers of the Local Government Unit, Provincial DOH Office, and Provincial Health Office</li> <li>3. Direct observation of health service delivery by the Municipal Health Office</li> </ol>
<b>Stakeholder analysis</b>	Assessment of the level of interest and influence of the following members of the Local Health Board: <ol style="list-style-type: none"> <li>1. Municipal Mayor</li> <li>2. Municipal Health Officer</li> <li>3. Municipal Budget Officer</li> <li>4. Sangguniang Bayan Committee on Health Chairperson</li> <li>5. Municipal Health Office staff</li> <li>6. Local Government Unit information technology specialist</li> <li>7. Provincial DOH representative</li> <li>8. Provincial Health Office health representative</li> <li>9. PhilHealth Local Health Insurance Office representative</li> <li>10. Civil Society Organizations representatives</li> </ol>
<b>Risk analysis</b>	Assessment of risks in terms of: <ol style="list-style-type: none"> <li>1. Probability of the event occurring</li> <li>2. Impact of the event</li> <li>3. Action</li> </ol>



**Figure 1.** The Study Framework

## Results

### Situational Analysis

The following were the health system gaps identified in order of decreasing priority:

- No functional EMR system
- Low Tuberculosis Case Notification Rate (CNR) – 42%
- Birthing facility without a License to Operate (LTO)
- No existing local program on non-communicable diseases such as hypertension and diabetes

A problem tree was then created for the identified health system gap with the highest priority (Figure 1). The problem tree demonstrated that both hardware and software for an EMR system were either no longer useable or available in the

local health facility and that there were also no more trained health workers. These were seen to be effected by an unawareness on the part of the stakeholders of the local health system about the benefits of having an EMR system.

### Stakeholder Analysis

A qualitative analysis of stakeholders was performed to assess stakeholder interest in investing in an EMR system and the influence exerted by each stakeholder relative to one another. The stakeholder analysis added more context to the situational analysis and its resulting problem tree. Stakeholders with the greatest interest were identified regardless of influence as partners in the social marketing campaign while those with less interest but relatively

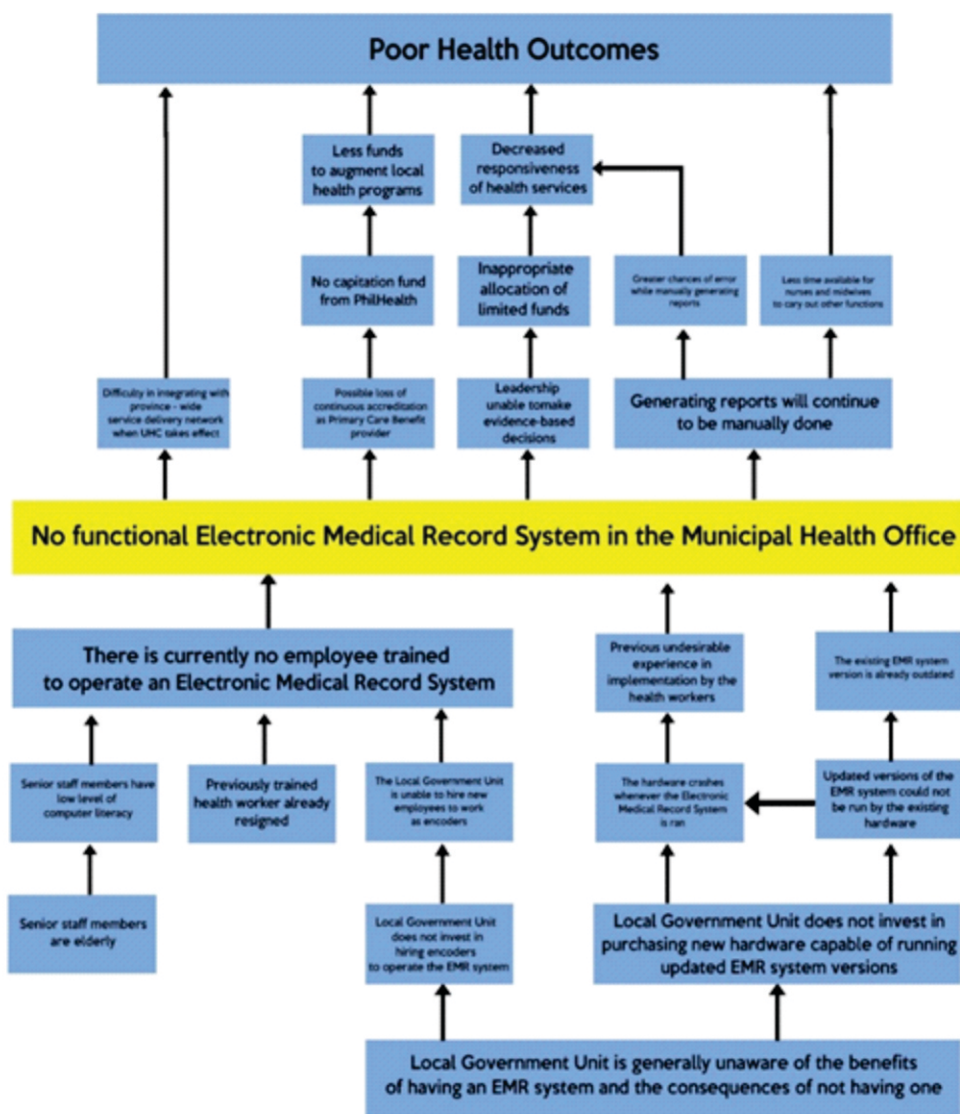


Figure 2. The Problem Tree Illustrating the Root Causes of the Priority Health System Gap

greater influence were identified as the targets of the social marketing campaign.

*Risk Analysis*

Events with potentially significant effects were identified and evaluated based on their probability of happening and the impact of the event should it occur. The risk analysis demonstrated that the events that could affect implementation were political in nature and could not be minimized or avoided (Table 1).

*Social Marketing*

Information gathered from situational, stakeholder, and risk analyses were used by the author to create a social marketing campaign with the following elements:

Though it was created with the intended outcome of influencing the stakeholders of the local health system to invest in an EMR system, the social marketing strategy, however, did not directly promote investing in an EMR system

right away. The social marketing strategy was so created to first influence stakeholders to invest in and support the improvement of the delivery of PhilHealth-accredited services in the community first. The delivery of these services also happened to be identified as priority gaps in the health system. By improving the delivery of these services, an opportunity arises whereby funds for these services and other health services can be augmented through claiming reimbursements from PhilHealth. Providing the stakeholders with an estimate of the potential gains from the reimbursements would reaffirm their decision to invest in health, reinforce their trust in the local health workers, and influence them to invest in an EMR system that, when integrated in the local health system, can not only provide funds for the implementation of other health programs in the community but also improve systems processes in the local health office and empower the community towards local health systems integration. Figure 3 summarizes the change strategy.

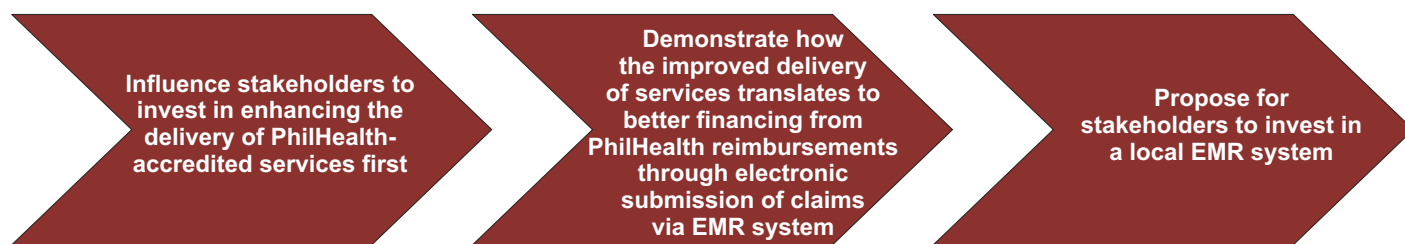
The local tuberculosis and non-communicable diseases programs were the PhilHealth-accredited services identified

**Table 2.** Summary of Analysis of Risks in the Implementation of the Social Marketing Strategy

Event	Probability	Impact	Action
Local governance does not support social marketing strategy	Medium	High	Avoid
Community health workers do not buy in to social marketing strategy	Low	High	Minimize
Other stakeholders do not buy in to social marketing strategy	Low	Low	Accept
Changes in leadership	Medium	High	Accept

**Table 3.** The Five Elements of the Social Marketing Strategy

<b>Social or Civic Cause</b>	Upgrading the local HIS by investing in an EMR system
<b>Change Agent/s</b>	Local Health Official
<b>Target Adopter/s</b>	All stakeholders of the Local Health System
<b>Channels for Promotion</b>	Local Health Board (LHB) meetings Other stakeholder meetings Social media
<b>Change Strategy</b>	Creation of local branding through a slogan and publicity materials for the PhilHealth-accredited services, the local tuberculosis control and the local non-communicable diseases programs. Presentation of the branding, slogan, and publicity materials to the local governance and other stakeholders of the local health system and dissemination upon approval. Partnering with several stakeholders of the local health system in the implementation of these public health programs. Presentation of the outputs of the implementation of the public health programs to the stakeholders in an LHB meeting. Demonstration of how the increase in services provided can also increase health financing through PhilHealth reimbursement by electronically submitting claims using an EMR system. The additional funds can then be used to sustain existing public health programs and initiate other public health programs. Proposal for the stakeholders to invest in an EMR system.



**Figure 3.** *The cChange Strategy of the Social Marketing.*

as priority gaps in the local health system. The social marketing strategy targeted the stakeholders of the local health system to invest in these programs first through branding with a slogan and publicity materials, all of which used the Filipino language.

The branding elements used for both the local tuberculosis and non-communicable diseases programs were the community's namesake and the desired attitudes and behavior of the community. Both were combined to form acronyms that were to be the brands by which these programs were to be known in the community.

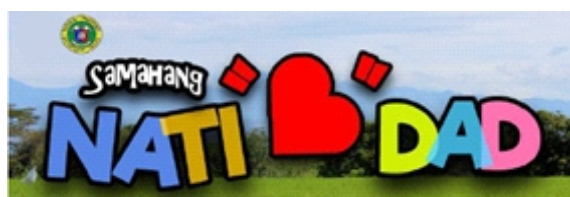
The branding was meant to make it easier for the stakeholders of the local health system to remember not only the program names but also what the health workers aimed to achieve through it, such as the treatment and prevention of tuberculosis and the management of non-communicable diseases. For example, the local tuberculosis program's brand name was SUGOD MAMERTO, an acronym that, when translated, roughly meant to "actively search for, diagnose, treat, and empathize with tuberculosis patients". On the other hand, the local non-communicable diseases program's brand name was Samahang NATI-B-DAD, an acronym that roughly translates to "unity among the members of the community to overcome hypertension and diabetes". The branding was accompanied by electronic and printed publicity materials, which incorporated specific fonts and color schemes.

The branding elements were first presented to the stakeholders of the local health system at a Local Health Board (LHB) meeting in July 2018. These were used to

convey urgency and ownership and influenced the LHB to invest in the said public health programs. With the approval and support of the local stakeholders, the social marketing strategy was implemented.

The implementation of the local tuberculosis program was primarily focused on the six barangays with the highest population. There was an increase in the community tuberculosis case notification rate from 42% the year prior to 80% by the end of the year. On the other hand, a pilot hypertension and diabetes club was established in a sector in the LHB. This pilot club was to give birth to more clubs in barangays. These clubs were to provide their members with services under the Primary Care Benefit (PCB) package of services. Both public health programs were implemented heavily depending on two sectors of the community, the Barangay Health Workers (BHW) and the local officials of the Office of Senior Citizens' Affairs (OSCA). Outside of LHB meetings, the branding elements were heavily promoted by disseminating the publicity materials in social media and during regular meetings of the BHWs and the OSCA local officials.

It was in the middle of the implementation of the social marketing strategy that consultation with PhilHealth was initiated. Representatives from the PhilHealth's Local Health Insurance Office (LHIO) were invited to the next LHB meeting in July 2019 to validate the calculated potential increase in health financing because of increased reimbursement claims for services provided and to also express support for the proposal to invest in an EMR system. In this LHB meeting, the author proposed for the stakeholders of the local health system to invest in an EMR system because it can increase funds for health services when used to submit reimbursement



**Figure 4.** *Sample Publicity Materials of the Social Marketing Strategy Implemented.*

claims. These funds can then be used to sustain the implementation of the existing public health programs and initiate other public health programs, such as a local mental health program and a local rabies program. The LHB approved the proposal to invest in an EMR system, with the social marketing strategy accomplishing its intended outcome by showing that an EMR system can also contribute to addressing other health system gaps.

## Discussion

The social marketing strategy implemented by the author was inspired by Dr. Juan Flavier's public health campaigns such as "Yosi Kadiri" which was successful at the time of its launch and when it was reused two decades later to push for higher excise taxes on cigarettes. The author took several elements of Dr. Flavier's public health campaigns such as branding, slogans, and the use of digital media in Filipino to create a social marketing strategy. Furthermore, elements such as the namesake of the community and acronyms helped make the social marketing strategy appeal more to the local stakeholders. In designing social marketing strategies, the author endeavored to consider the target stakeholders' interests and to ensure that the social cause being marketed is not lost in the process of being marketed, but is communicated clearly to all stakeholders. Also, for wider dissemination, the branding elements were published on social media.

Furthermore, the social marketing strategy demonstrated how a roadmap for the implementation of an EMR system in a local health system is not always a straight path and may begin with and even be enhanced by first improving the implementation of existing health services. Additionally, the social marketing strategy also facilitated the building of a foundation of trust between the health workforce and the local stakeholders on which local health systems development can be sustained. The social marketing strategy also demonstrated that multiple health system gaps may be addressed systematically and methodically by an integrated plan that is supported by the health workforce and also involves the local stakeholders.

The social marketing strategy implemented by the author had several limitations. For example, the scope of its implementation did not cover influencing stakeholders outside the local health system in ensuring that reimbursements are timely and complete. This has been a recurring concern of health facilities with the processes of PhilHealth. In 2018, health facilities flagged PhilHealth's online portal for technical glitches that caused delays in the process of reimbursement of services

rendered [18]. These delays have caused the reimbursements due for payment to one health facility to reach an alleged Php 204,000,000 in 2019 [19]. It is therefore important to communicate this risk to the local stakeholders and work towards identifying interventions that minimize the risk.

Furthermore, the perspective, or value base, used in the social marketing strategy to influence the local stakeholders was that health is an investment. The stakeholders of the local health system were influenced to invest in an EMR system when it was shown how an EMR system can be used to electronically submit claims to PhilHealth, thereby bringing about an increase in funds for health that can sustain existing public health programs and initiate new ones. Health as an investment is a value base that has been used frequently in the recent years to motivate governance for health [20]. Health as an investment is the perspective taken to demonstrate the economic value of governance for health. This perspective or value base, however, is limited in that it appeals primarily to sectors with financial interests, but is not likely to inspire the public in general and solve the root causes of inequity. Other perspectives or value bases such as health as a global public good, as human security, as human development, as a human right, and as global justice are more inclusive and explicitly moral and political. Further research is needed to generate evidence of how these value bases are put into practice in motivating governance for health at both the local and national levels.

Finally, it must also be noted that the strategy to fully implement an EMR system will be different from the roadmap to influencing stakeholders in investing in one. The objective shifts from influencing stakeholders to now enabling health workers to accept new technology and integrate its use in their daily workload and promptly address concerns regarding its use. It is also important to keep local stakeholders abreast of the status of implementation.

## Conclusion

A social marketing strategy utilizing branding elements was implemented to influence stakeholders in the local health system of a resource-constrained community in the Philippines to invest in an EMR system. Stakeholders were influenced to invest in an electronic medical record (EMR) system because it was shown to also have the capacity to address other priority health system gaps identified. This strategy used a perspective or value base of health as an investment to influence stakeholders. The social marketing strategy also helped build a foundation of trust and demonstrated that multiple health system gaps may be addressed systematically and methodically

by an integrated plan that is supported by the health workforce and also involves the local stakeholders.

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