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A Comparative Study of Health System Management Models in Combating Chronic Diseases

Moosa Al Riyami
University of Nizwa

A B S T R A C T

This Paper sheds shed light on the requirements for patients with chronic disease as well as describe the changes necessary for current health systems to meet these needs and tackle the chronic disease burden. The Author discusses list and explain some of the models used currently to manage chronic disease, such as the Chronic Care Model (CCM), Innovative Care for Chronic Conditions (ICCC) framework, and Kaiser Pyramid. By describing these requirements, the paper formulate the business model of the traditional health system. Finally, I will connect each section with the new business model proposed in this chapter to assess its efforts towards changing the health system in order to tackle the chronic disease burden.

A R T I C L E I N F O

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Introduction

It is clarified that the health system has enjoyed considerable development in the past, specifically advancements in technology, biomedicine, and biological sciences. These advancements have improved the health system and allowed it to treat acute illness efficiently. However, this system still cannot cope with the chronic disease challenge, which is considered the most difficult burden of any health system globally. This failure has been highlighted by various studies and statistics, which show the massive challenge of chronic disease in terms of its increasing prevalence as well as the growing rate of associated deaths, leading to rising health costs that affect high- and low-income countries. Further, the previous chapter showed that chronic disease negatively affects patients' lives, country-level expenditure, and

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other aspects considered to be important for a strong economy. Therefore, countries reforming their health sectors must aim to overcome this challenge and ensure the sustainability of their own systems.

Some studies have stated that the goal of reform in the health system is not to change the cure system, which is effective at treating acute illness, but rather to incorporate or complement this system with a care system that deals with chronic disease. This could, for example, be achieved by adding certain tools and elements to the cure system in order to cope with the requirements of chronic illness (Eusko Jaurlaritza, 2010; Nolte & McKee, 2008; World Health Organization, 2002; World Health Organization and Calouste Gulbenkian Foundation., 2014). This argument indicates that the current system might be able to be adjusted to cope with the current requirements of chronic disease, negating the need to build a new health system from scratch. Therefore, in this subsection we discuss the features and differences of the cure and care systems, how the system could be reformed, and the benefits that may result.

As noted above, while the current care system can treat acute illness effectively, it fails to meet the other requirements for managing chronic conditions. A number of studies (Eusko Jaurlaritza, 2010; World Health Organization, 2002) have stated that because this system is designed specifically to deal with acute illness, the patient–service provider relationship is occasional and discontinuous. These works also mention that the current care system is reactive in that it only starts to deal with the patient after s/he falls ill and/or visits a hospital. Moreover, this system does not collaborate with other community institutions or coordinate with them to use the available community resources, which are crucial for chronic conditions. Therefore, the current care system fails to cope with the requirements necessary to deal with chronic illness.

For these reasons, efforts should be directed towards reforming this system to include care for chronic conditions. (World Health Organization, 2002) mentioned that failing to reform this system would lead to dangerous consequences such as:

- Worsening the health of the population
- Increasing health services expenditure
- Forcing the health system to become ineffective and inefficient
- Increasing the prevalence of chronic disease and its associated mortality rate
- Increasing avoidable and unnecessary admissions to hospitals

All these consequences would decrease the sustainability of the health system, negatively affecting the whole country from economic as well as social perspectives. However, it important to know the different requirements for these approaches in order to improve the transformation process. In this regard, (Eusko Jaurlaritza, 2010) contrasted the intervention processes in the cure and care systems (see Table 4).

Table 1: Differences in the interventions used in the cure and care systems

Cure system (acute illness)	**Care system (chronic illness)**
Diagnosis focuses on acute illness only	Full diagnosis for the patient covering health, economic, work, and social conditions
Reactive, only aims to cure acute illness	Proactive, works to prevent disease and offer rehabilitation interventions
Passive role of the patient	Active role of the patient and care provider

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Specific treatment procedures in the short run, but through a limited number of specialized health departments	The care service covers the whole period of illness, while services are provided through integrated and coordinated efforts from different units and departments covering health, social, work, and the other essential community resources for managing chronic disease

Source: (Eusko Jaurlaritza, 2010); Adapted.

The comparison in Table 4 highlights the need to change the goal and duty of the health system from only curative purposes to covering disease prevention, health promotion, and rehabilitation. In addition, the system's focus should not be limited to illness, but should stretch to other important aspects that affect the patient's health condition (e.g., diagnosis should cover the patient's health, economic, work, and social conditions), while provision should include essential community services. These two changes require the health system to be more highly integrated with other community institutions (Eusko Jaurlaritza, 2010; Nolte & McKee, 2008; World Health Organization, 2002; World Health Organization and Calouste Gulbenkian Foundation., 2014).

The benefits of reforming the health system include prolonging the patient's life, enhancing his/her functional condition, and allowing patients to enjoy greater quality of life (Eusko Jaurlaritza, 2010; Nolte & McKee, 2008). In addition, resource misuse will fall and hospital admissions will decline, thereby reducing health expenditure (Eusko Jaurlaritza, 2010; World Health Organization and Calouste Gulbenkian Foundation., 2014), increasing the efficiency and effectiveness of the health system, and improving its sustainability.

In conclusion, given the differences between the two kinds of health systems examined in this subsection, the current system must change to cope adequately with chronic illness. Moreover, this subsection highlighted that bolstering the current health system is sufficient rather than building a new health system to meet the needs of patients with chronic conditions.

Models used to manage chronic disease

This subsection will shed light on the models countries use to reform their health systems in order to cope with the chronic disease burden and improve the quality of healthcare. In particular, it will explain the theoretical background, main elements, and benefits of the CCM, ICCC framework, and Kaiser Pyramid, which are considered to be the most important models for reforming health systems.

The CCM

The CCM, generated by Wagner and the MacColl Institute for Healthcare in the United States in 1999, is considered to be essential for tackling chronic disease and improving patient outcomes. According to one study, "the system changes support the development of informed activated patients and prepared

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proactive healthcare teams whose interactions become more productive and satisfying around chronic illness" (Epping-Jordan et al., 2004). Figure 12 shows the main components of the CCM, namely the health system itself, community resources and policies, and the productive interaction between the patient and care providers. This figure also shows that a health system has four main elements, namely self-management support, delivery system design, decision support, and clinical information systems, which are integrated between themselves as well as with community resources and policies. This integration not only empowers patients, it also supports the care team in being proactive, leading to productive interactions between the patient and care providers.

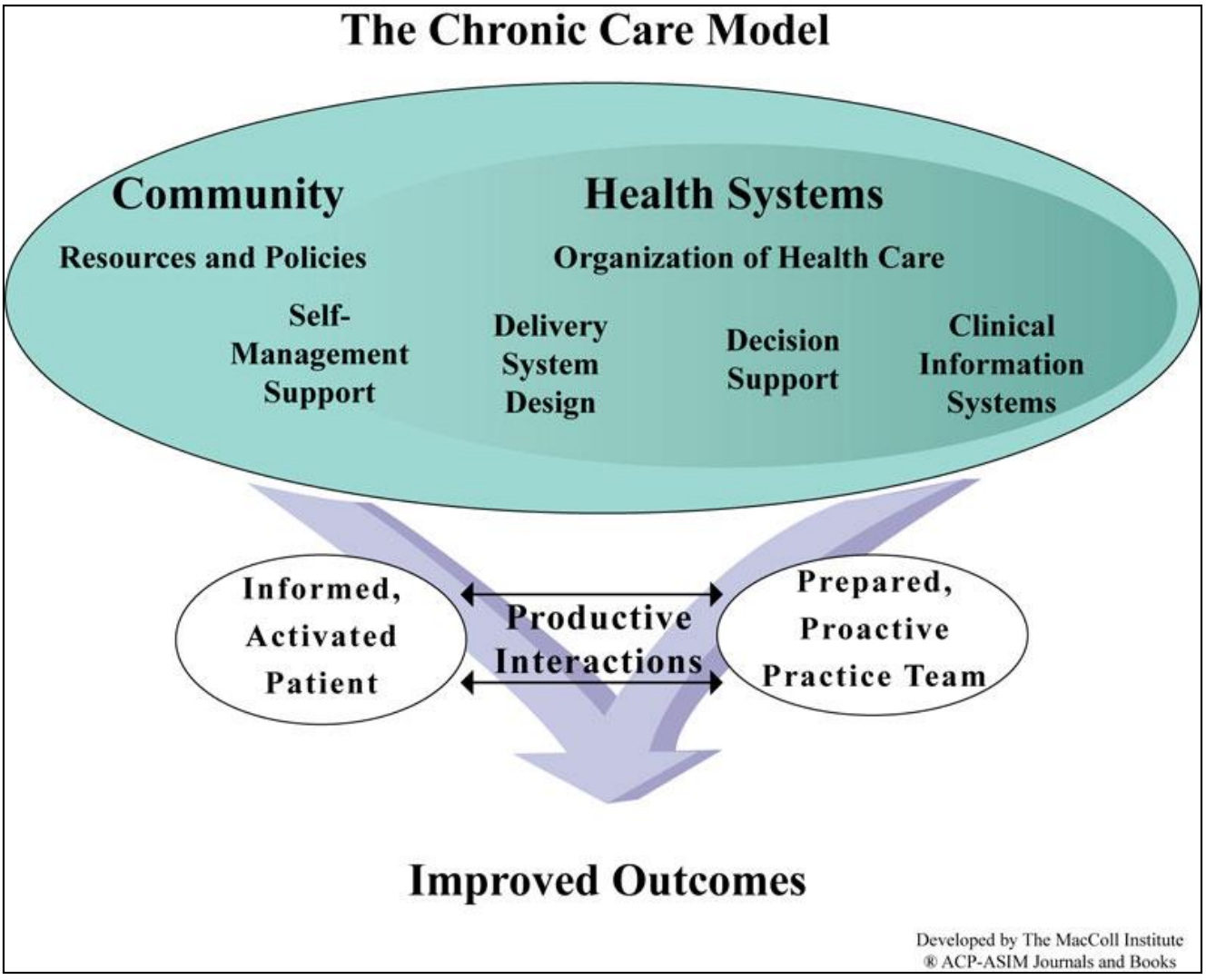

Figure 2: The CCM
Source: (Improving Chronic Illness Care, 2006-2014).

According to another study, "the final objective of the model is that active informed patients become the protagonists of the medical encounter along with a team of proactive professionals with the requisite capabilities and skills, all in pursuit of a high quality of care, increased satisfaction and improved results"

(Eusko Jaurlaritza, 2010). Further, (World Health Organization and Calouste Gulbenkian Foundation., 2014) stated that this model "has substantially influenced thinking about chronic disease management and its reform, especially the shift towards a more integrated, person-centred, and shared care approach."

ICCC Framework

The ICCC model, created by the WHO in 2002, is considered to be "an expanded version of the Chronic Care Model and this provides a comprehensive and flexible approach to management of chronic diseases in resource-constrained settings, particularly in low- and middle-income countries" (Sharma, 2013). The WHO explained the ICCC framework as comprising "fundamental components within the patient (micro-), organization/community (meso-), and policy (macro-) levels. These components are described as "building blocks" that can be used to create or re-design a health system that can more effectively manage long-term health problems" (World Health Organization, 2002). It also stated that the ICCC model emphasizes disease management as well as prevention and expands the scope of work by focusing on the roles of health and community institutions in the provision of high-quality health services in partnership with the patient and his/her family and within a supported wider political environment. (World Health Organization, 2002) further explained that the ICCC framework provides the following six principles to guide the whole system:

- Evidence-based decision making
- Population focus
- Prevention focus
- Quality focus
- Integration
- Flexibility/adaptability

Figure 3 shows the broader focus of the policy environment compared with the CCM shown in Figure 2, which lacks a policy environment element. In addition, the ICCC framework emphasizes that the patient–healthcare team relation includes community partners, whereas only the connection between the patient and healthcare team is clear in the CCM. Therefore, this model focuses on greater integration with community institutions and on providing wide-ranging policies that cover and support all healthcare and community actors in order to achieve better outcomes for chronically ill patients.

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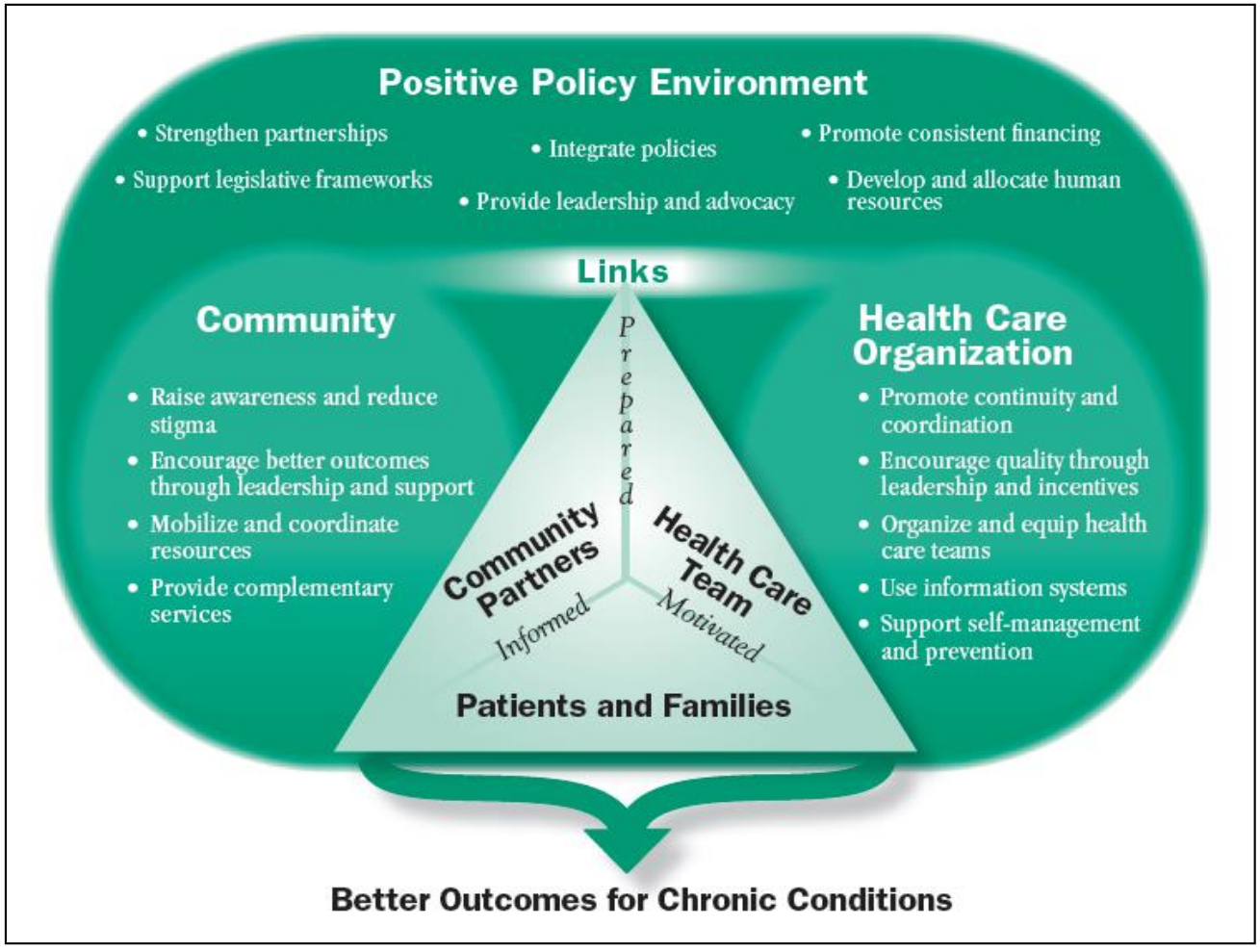

Figure 3: ICCC Framework
Source: (World Health Organization, 2002)

Kaiser Pyramid

Finally, the Kaiser Pyramid focuses on classifying patients according to their degree of illness complexity. Figure 14 shows the classification of chronically ill patients and the kinds of health services each group will receive. These groups are:

- Highly complex patients treated by using case management
- High-risk patients treated by using disease management
- People with chronic conditions supported to use self-care
- The rest of the population, which will be targeted by prevention efforts

Importantly, in contrast to the Evercare and Pfizer models, which focus on patients with highly complex chronic conditions, the Kaiser model focuses on the whole population (Singh & Ham., 2006).

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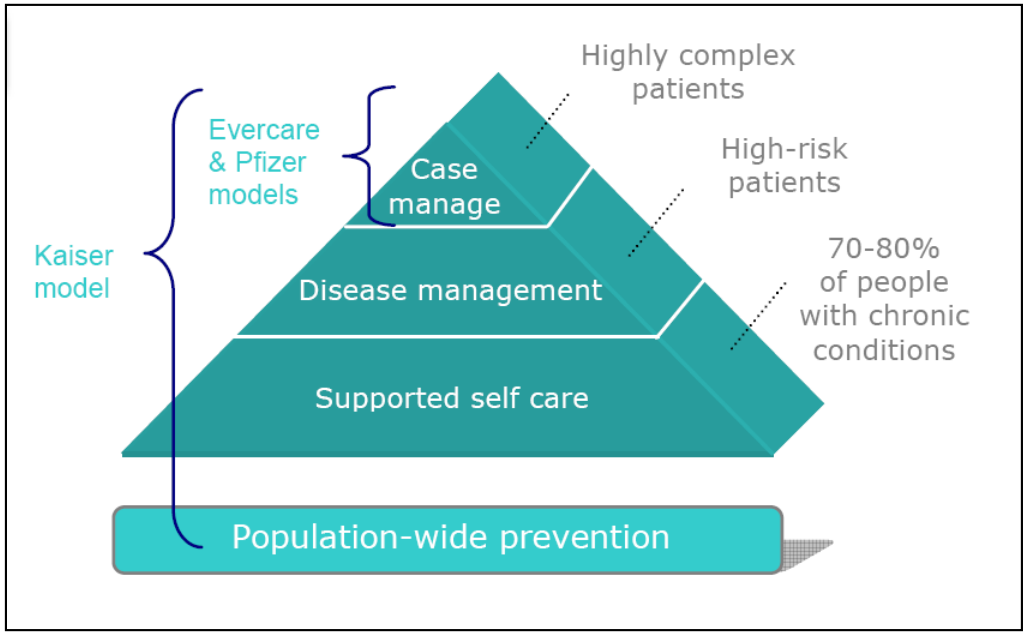

Figure 4: Kaiser Pyramid
Source: (Singh & Ham., 2006)

Building on the basic model, the extended Kaiser model in Figure 15 has two different types of care options: professional care and self-care. The figure shows the degree to which each segment will use these two care options, highlighting that the majority of patients are in the self-care category. This category emphasizes the benefit of stratifying the population in order to provide efficient and effective healthcare services according to people's needs, thereby reducing the burden of chronic disease as well as health expenditure.

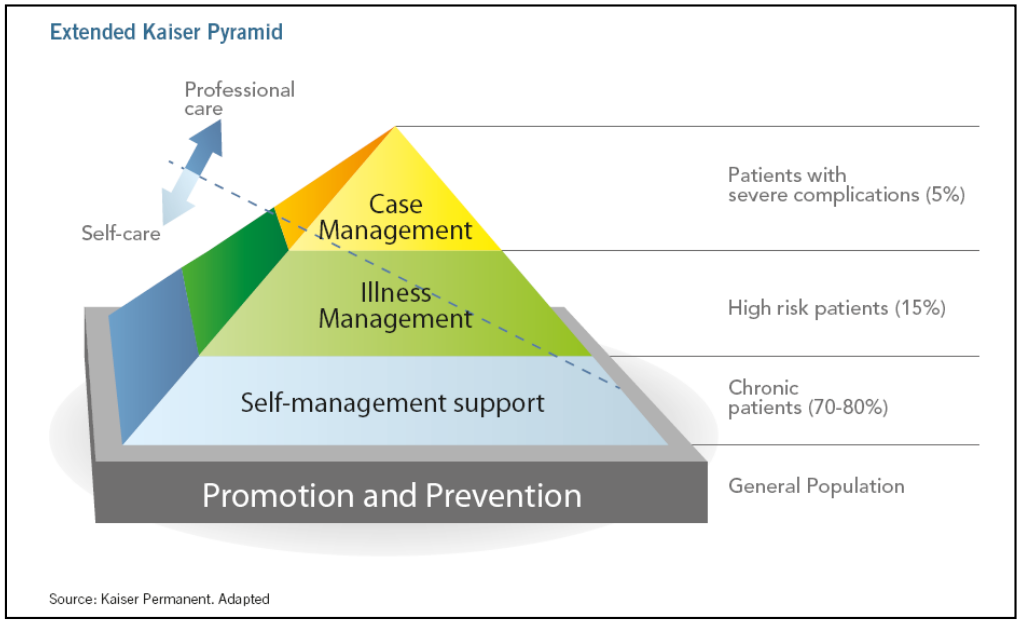

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Figure 5: Extended Kaiser Pyramid
Source: Kaiser Permanent (quoted from (Eusko Jaurlaritza, 2010)

Applying the business model to old and new health systems

The WHO defined a health system as "includ[ing] all the activities whose primary purpose is to promote, restore or maintain health" (World Health Organization, 2000) and added that "innovation in care for chronic conditions is the integration of 'building blocks' from the micro-, meso-, and macro-levels of the health care system" (World Health Organization, 2002). Given these definitions and the discussion presented in previous chapters, this section will describe the business model of the current health system and then propose a new model for better tackling the chronic disease burden. In particular, it will focus on the requirements of chronic disease patients as well as the tools and models used to deal with this issue.

The business model canvas

The business model canvas created by Osterwalder "describes how an organization creates, delivers, and captures value" (Osterwalder & Pigneur, 2009) through the following nine "blocks":

- Customer segments
- Value propositions
- Channels
- Customer relations
- Revenue streams
- Key resources
- Key activities
- Key partnerships
- Cost structure

Proposed business model for the traditional health system

Figure 13 uses the data and discussion from previous chapters to identify these nine blocks for the traditional cure system in the healthcare setting. Although this system targets all kinds of patients, its services focus on curative action, benefitting patients suffering from acute illness. Moreover, the relation with the customer is described as occasional in that the patient does not play any role in the process. Indeed, the patient has to visit hospital in order to receive healthcare services. Traditional health systems typically focus on treating diseases by using their own resources (i.e., without collaborating with other institutions). However, their failure to adapt their activities to meet the needs of patients suffering from chronic disease has grown the costs of healthcare services. This failure to tackle chronic disease is considered to be the main challenge for the health system and main cause of rising health expenditure.

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<table>
<tr>
<td rowspan="2">Key Partners

- Medicine companies
- Medical equipment and materials companies
- Insurance companies
- Educational and research institutions</td>
<td>Key Activities

- Reactivity to curing illness
- Cure</td>
<td rowspan="2">Value Propositions

- Health services for curative illnesses
- Reducing the death rate caused by acute illness</td>
<td>Customer Relationships

- Episodic relationship
- Passive role for patients in the process</td>
<td rowspan="2">Customer Segments

- All kinds of patients, but serving those with acute illness better</td>
</tr>
<tr>
<td>Key Resources

- Advancement in the fields of medicine and bioscience
- Knowledge
- Technology
- Financial resources
- Medical professionals
- Hospitals</td>
<td>Channels

- Face-to-face
- Through hospitals and primary care</td>
</tr>
<tr>
<td colspan="3">Cost Structure

- R&D
- General administrative cost
- High operational cost
- Treating patients with chronic disease</td>
<td colspan="2">Revenue Streams

- Good results in treating acute illness
- Reduction in the mortality rate associated with acute illness</td>
</tr>
</table>

Figure 3: Business model for the traditional cure system

Proposed business model for an integrated cure and care system

Integration, as defined earlier by the WHO, means integrating the different levels of the health system (micro, meso, and macro), different institutions in the community, different policies, and different kinds of health services in order to create an expanded health system that provides a greater number of services and collaborates with other community institutions to meet its goals. Amit and Zott (2012) stated that organizations can achieve a sustainable performance advantage through business model innovation. These authors also emphasized that business model innovation can comprise content innovation (e.g., adding new activities), structure innovation (e.g., linking activities in novel ways), or governance innovation (e.g., changing which party performs an activity). Moreover, they suggested six questions that

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must be asked when considering business model innovation:

1. What needs will the new model design fulfill?
2. What activities are required to fulfill these needs?
3. How are these required activities linked to each other in new ways?
4. Who should perform each of the activities in the business model?
5. How is value created for each participant?
6. What is the revenue model?

These questions guide the following proposal of a new business model for the health system, in addition to using the data and information from the discussion in previous chapters and ideas offered by the discussed care models (e.g., the CCM, ICCC framework, and Kaiser Pyramid). Combining different approaches and ideas into a new business model could stimulate change in the system from a holistic perspective.

The new system must be able to cope with the needs of patients with chronic diseases, because the current system only focuses on acute illness. Identifying this need allows us to pinpoint the customer segments in the new business model, which could be specified as acute illness patients, chronic disease patients, injured patients, and the whole population. One of the main findings from previous chapters was that better tackling chronic disease demands covering the whole population through both promotion and prevention activities. Therefore, the customer segment includes all kinds of patients as well as healthcare actors in the community. However, some studies have emphasized that the population should be segmented further in order to create efficient and effective systems that can cope with the needs of each segment. The Kaiser Pyramid model could help with this segmentation.

All activities should be able to tackle the chronic disease burden in terms of the care for chronic illness, prevention of illness, rehabilitation, and health promotion for the whole population. All these activities should complement the traditional cure activities currently provided by the health system for acute illness patients. In short, specifying the key activities helps identify the other blocks in the proposed business model.

Some of the required new activities go beyond the responsibilities of the health system, reaching and intersecting with those of other institutions in the community. For example, the promotion and prevention of improved health could be conducted by educational institutions and workplaces, while rehabilitation could be offered through the available rehabilitation centers in the community. These interrelated activities could help avoid multiple institutions providing the same service and unite efforts to reach the desired goal, namely meeting the needs of all society. Accordingly, this approach would reduce costs by, for example, only offering rehabilitation services at the available rehabilitation centers in the community rather than in the health system. However, linking activities in this way requires a new administration set-up to allow easy and effective communication between these institutions. Therefore, employees, the working environment, external collaborations, and management style should be prepared to adapt to these new activities and new way of working.

In addition, such integration should not only focus on external institutions, but cover the inside workings

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of the health system, too. Examples include integrating professional care and self-care or joining professional care with primary care in order to satisfy the needs of chronic disease patients, which can require care from different departments in the health system. Forging such relations would help identify the key resources need to achieve the aimed goal, which could include the following:

- Advancement in the fields of medicine and bioscience
- Technological advancement (e.g., providing e-health applications that facilitate all tasks in the health system and integrate information systems with those of other institutions)
- Medical professionals
- Hospitals
- A positive policy environment as suggested by the ICCC framework. This would support and encourage integration by linking policies, strengthening partnerships, promoting consistent financing, and providing appropriate human resources and leadership
- Integration with other community resources
- An integrated management approach, allowing the government to manage the different services offered by institutions

After specifying the needs, activities, and required resources, identifying who will perform these activities is crucial. In this respect, it important to note that the aforementioned care model suggested that a patient should be included in the process of treating his/her chronic conditions. These models suggest keeping the patient well informed about his/her health conditions so that s/he can participate in managing them. Therefore, the patient should be considered to be one of the main actors in healthcare services. The ICCC framework and CCM also encourage the community to participate and support the providing of services to chronically ill patients. Moreover, these models emphasize the role of healthcare teams in supporting and motivating health organizations to be proactive and to cope with the challenges and requirements of the new health system. In addition, the key partners should include traditional health system collaborators to improve the operational practicalities in the different heath areas.

Applying the new business model proposed herein would thus create value for the different participants and stakeholders by:

- Customizing health services that better meet the population's needs
- Improving health value by focusing on the patient not only on the disease
- Reducing operation costs, because the patient will participate in managing his/her own health conditions
- Increasing patients' quality of life
- Prolonging the patient's life
- Reducing the mortality rate caused by acute illness as well as deaths caused by chronic disease
- Improving accessibility, because some services could be offered by other community institutions, while the application of e-health services would improve interaction and access to healthcare

The services of these business model would transfer to the customer in a number of ways by providing

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various services from different institutions. Technology and e-health applications would offer great opportunities to improve the channels through which these services are provided (e.g., electronic communication by using websites, mobile phones, the Internet, and social networks). They also could foster the development of an integrated system with which to improve resource management between the health organization and community institutions. Moreover, encouraging the patient to play a role in the process would benefit the co-creation of health services, because customer relationships with healthcare teams would be strong and long-lasting. This would allow patients to self-manage their illnesses, while their relations with healthcare teams could be customized according to the different segments of the population.

Changing the current health system to the proposed integrated alternative would be expensive at the beginning because of the initial investment required to build an adequate technological infrastructure inside the health system and with other institutions. These costs could be summarized as follows:

- R&D
- General administrative
- Technological development
- Training for medical professional and administrators to handle the new requirements
- Educating patients to manage their illnesses
- Developing information systems to have timely access to all individual data

In addition, such a shift would require preparing health teams and leadership to cope with these changes. Nevertheless, investing in activities and approaches that empower patients is essential to the success of this business model. The new health system would be efficient and effective at tacking chronic disease, reducing the associated mortality rate, increasing patients' quality of life, and reducing health expenditure. Further, other community institutions and the whole country would benefit from having a healthier population, enhancing community life as well as the economy. Overall, the benefits could be summarized as follows:

- Avoid and reduce repetition in the offered services
- Avoid and reduce repetition in expenditure on infrastructure
- Avoid unnecessary readmissions to hospitals
- Enable the sustainability of the system
- More effective and efficient health system
- Healthy population

Figure 4 shows the proposed new business model of an integrated healthcare system, based on the healthcare approaches and models discussed before.

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<table>
<tr>
<td rowspan="2">Key Partners

- Social and other community institutions related to health (i.e., social, sports)
- Patients
- Medicine companies
- Medical equipment and materials companies
- Educational and research institutions
- Insurance companies
- Information technology companies
- Application developers</td>
<td>Key Activities

- Cure activities for acute and other related illnesses
- Care for chronic illnesses
- Prevention of illnesses
- Rehabilitation
- Health promotion</td>
<td rowspan="2">Value Propositions

- Customized health services that better meet the population’s needs
- Health value
- Reduce operation costs
- Increase patients’ quality of life
- Prolong the patient’s life
- Reduce the mortality rate associated with acute illness as well as deaths caused by chronic disease
- Improve accessibility</td>
<td>Customer Relationships

- Ongoing and continual relationships
- Co-creation of health services
- Active patient role (i.e., co-creation of services with a medical professional)
- Self-management of the illness
- Customized relations according to the different segments of the population</td>
<td rowspan="2">Customer Segments

Diversified segments of population according to their needs:
- Health promotion
- Disease prevention
- Acute illness
- Injuries
- Chronic disease</td>
</tr>
<tr>
<td>Key Resources

- Advancement in the fields of medicine and bioscience
- Positive policy environment
- Technology
- Medical professionals
- Hospitals
- Integration with other community resources</td>
<td>Channels

- Face-to-face
- Through hospitals and primary care
- Through social and other institutions related to health
- Electronic communication (e.g., website, desktop and mobile</td>
</tr>
</table>

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	- Integrated management approach		applications, social networks)	

Cost Structure	Revenue (Benefits) Streams
- R&D - General administrative - Technological development - Training for medical professional and administrators to handle the new requirements - Educating patients to manage their own illnesses - Developing information systems to allow timely access to all individual data	- Avoid and reduce repetition in the offered services - Avoid and reduce repetition in expenditure on infrastructure - Avoid unnecessary readmissions to hospitals - Enable the sustainability of the system - More effective and efficient health system - Healthy population

Figure 4: Proposed business model for the integrated cure and care system.

Evidence and real-life experiences from various countries

This section will highlight the real-life experiences of countries who have utilized various care models or new approaches to tackle chronic conditions. In addition, it will provide an overview of the evidence regarding the effectiveness of these models and their impact, and compare the components of these models with the business model proposed for the new integrated health system, emphasizing certain important aspects of the business model.

Australia

The Hospital Admission Risk Program (HARP), a service administered by the Australian Department of Health, ran a project called Better Care of Older People (BCOP) from 2007 through 2010. The HARP BCOP service delivery model was based on two well-known models, the Chronic Care Model and the Kaiser Pyramid. According to HARP BCOP, "care coordination, self-management support and specialist medical care are core components of HARP, with the primary focus of reducing the demand of clients with chronic disease and complex needs on the acute hospital system" (State of Victoria, 2014). Assessment revealed that the model had a positive impact on individual's ability to utilize hospital resources and services in the most effective way. The program achieved some significant results compared to pre–HARP BCOP levels (State of Victoria, 2014):

- A 64% decrease in the number of hospital separations
- A 55% decrease in the number of cases presenting to the emergency department

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- A 39% decrease in the number of patients presenting to the emergency department after being released from HARP BCOP program

The business model we have proposed for the integrated health system is similar to this model in some important ways. It places emphasis on the coordination of care between different participants, both activating the role of the patient in the process and preparing the healthcare team. Our proposed business model, therefore, may yield a similar positive impact.

Denmark

The Østerbro Health Centre, established in 2005 in Denmark, is considered a good example of collaboration between a health system and community institutions. This type of relationship is characteristic of integrated healthcare and is a main element in the CCM and ICCC models. The Østerbro Health Centre provides rehabilitation services for people with chronic conditions. An assessment of this center revealed the positive impact it has had in empowering patients, utilizing community resources, and encouraging collaboration between the healthcare system and community institutions. Another positive finding "showed that 86% of patients had started to exercise more and 42% had changed their diets. Over 90% of general practitioners in the area have referred patients, and 96% of those thought the program valuable to their patients" (Economist Intelligence Unit, 2012; Nolte, Knai & McKee, 2008). Our proposed business model emphasizes the importance of integration between the healthcare system and community institutions in order to better care for individuals burdened with chronic conditions and achieve other positive outcomes.

World Health Organization: ICCC global report

As discussed earlier, the ICCC model offers both flexibility and adaptability, enabling countries to implement it based on their available resources and clients' conditions. The World Health Organization (2002) mentioned that there are no assessments of a full implementation of the ICCC model because countries have preferred to implement the program gradually rather than all at once. Consequently, the World Health Organization provided some examples of countries working to put specific elements of the ICCC into effect. It emphasized that there are various innovative approaches and programs derived from the ICCC model and that some countries have had the following positive outcomes (World Health Organization, 2002):

- Improved biological disease indicators
- Reduced mortality
- Saved both money and healthcare resources
- Improved patients' functioning, productivity, self-management capabilities, and quality of life
- Improved processes of care

Although the countries assessed by the World Health Organization had not yet applied the entire ICCC model, their experience already shows positive results. Furthermore, Tsai, Morton, Mangione, and Keeler

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(2005) conducted a meta-analysis to assess whether an intervention that included at least one element of the CCM could yield positive results. The authors concluded that "interventions that contain at least 1 CCM element improve clinical outcomes and processes of care—and to a lesser extent, quality of life—for patients with chronic illnesses" (Tsai et al., 2005). Therefore, countries could benefit from the flexibility of these models. This flexibility would support the implementation of our business model by allowing it be built in several stages, commensurate with the surrounding environment and context of each country.

Different care models and their impact

Singh and Ham. (2006) provided an overview of various care models being utilized in countries along with their impacts (see Table 5). For some models, there is no evidence regarding their outcomes, either because they need to be applied for a longer period before being assessed or because there is yet no complete experience of applying the model. Positive impacts have been directly associated with some models, such as the CCM, Kaiser, and Evercare. These outcomes include improved quality of care, improved resource use, reduced costs, reduced hospital admissions, and further integrated care.

Conclusion

In conclusion, this chapter reviewed the needs of patients with chronic diseases, which should be satisfied by the current health system to ensure efficiency and sustainability because studies consider the chronic disease burden to be the main health challenge globally. It also provided an overview of the healthcare models used to tackle chronic disease, such as the CCM, ICCC framework, and Kaiser Pyramid. Then, it formulated the business model of the current system, which fails to tackle chronic conditions, and proposed a new model of an integrated healthcare system based on the care models and approaches discussed in previous chapters.

Through this work, it is clear that the current health system could be adjusted to be able to meet the needs of patients with chronic disease. There is no need to build from scratch a new health system, because not only would this approach be costly, but also all the required resources are already available. A more effective system could be created by simply adding complementary services and resources, principally through greater collaboration with community institutions. Such collaborations would improve the efficiency of the system and cut costs by avoiding duplicating services already offered by other institutions. Finally, all the discussed care models as well as the business model proposed in this study emphasize integration and collaboration between health organizations, the community, patients, and policymakers.

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