

# Human Centric Care

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**With populations ageing and chronic disease increasing, the cost of healthcare will continue to rise. The challenge for societies is to improve existing healthcare services with less money. While it is true that information technology (IT) promises to help solve this problem, the IT industry has been slow to deliver the types of benefits seen in other industries. How to best utilise IT in supporting healthcare systems depends on how we choose to view those systems. There are many different perspectives. This paper outlines the most common ones: clinician centric, government centric, and patient centric before describing a new holistic view, which we call Human Centric Care. By understanding the goals common to every healthcare system and the human relationships within them, we believe that we can create new flexible IT systems, around both people and processes, that can unlock the full potential of IT healthcare.**

## 1. Introduction

The primary challenge for healthcare services around the globe is the increasing cost of healthcare delivery. The total expenditure on health as a percentage of gross domestic product (GDP) grew from 8.2% to 8.7% globally between 2000 and 2006.<sup>1)</sup> This increase is greater in western economies such as the UK and USA. For example, the expenditure increased from 13.2% to 15.3% in the USA between 2000 and 2006.<sup>1)</sup>

The cost of healthcare is increasing for many different reasons: advances in medical research and technology have created new and expensive medical treatments, the incidence of disease in the population is increasing with the trends for obesity and other chronic diseases looking set to continue. Meanwhile our healthcare systems remain disorganised: as one 74-year-old patient with advanced cancer put it, “They’re all very good in their own sections; they just don’t work well together.” Moreover, populations are getting

older: In 2007, 11% of the global population was over 60.<sup>2)</sup>

The fundamentals of healthcare provision (diagnosis and treatment) have not changed for thousands of years. By contrast, the medical health record is a recent innovation. The purpose of the health record is to improve the quality and continuity of care by trying to ensure that medical decisions are made on the basis of the most accurate information available. Therefore, the medical record is only as valuable as it is accurate.

Healthcare systems can be viewed from a number of different perspectives: those of the clinicians (both generalists and specialists), care delivery organisations (primary, secondary, and tertiary), financing institutions (governments and insurance companies), and of course patients. Each group sees healthcare through its own eyes, so difficulties can arise through misunderstanding and poor communication. We believe that

the key to unlocking healthcare information technology (IT) is to develop a framework that is common to all these perspectives and allows true communication and understanding between these different groups. We call this holistic view of the healthcare system Human Centric Care.

In this paper, we discuss some of the current perspectives of healthcare systems and describe Human Centric Care. After describing the fundamental process of healthcare provision, we introduce the concept of Human Centric Care and the local referral network before making some concluding remarks.

## 2. Existing healthcare systems

### 2.1 Clinician centric care

Clinician centric care is an approach where the clinicians control access to their patients' health records. This approach is seen in many western systems. However, clinical data is often passed between different healthcare providers in a piecemeal fashion. Just as clinicians have become more specialised, so have the health record systems that support each specialty.

This leads to an overall healthcare system that operates, by design, in different specialties. Each specialist retains the essential information relevant to his or her specialty, and usually only a summary is sent to the patient and his or her general practitioner (GP). This means that different specialist information about a patient might be spread over a number of IT systems, with no single physician having access to all the details in one place. There are also problems with information accuracy and inconsistencies between different medical IT systems.

### 2.2 Government centric care

Existing data repositories are often isolated within different healthcare specialties. As a result a complete set of clinician-derived data is usually not available from a single secure archive but remains in isolated locations. Government centric care is an approach where the government controls access to the health records of all its citizens (**Figure 1**). The advantages of the government centric approach can be seen from the management perspective of a healthcare

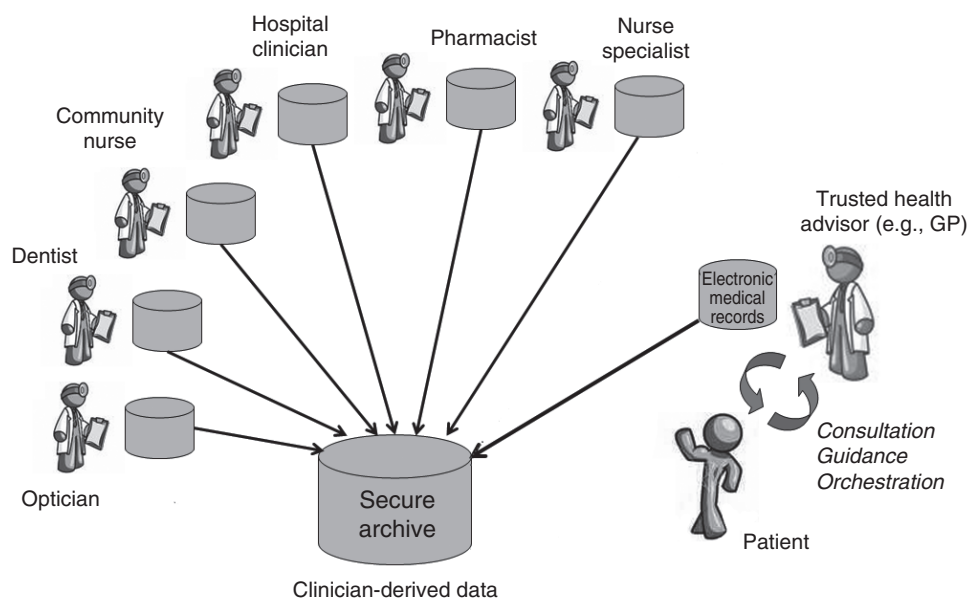


Figure 1  
Government centric care.

system. Economies of scale are achieved by sharing IT infrastructure and services. Centralised data can be used by public health managers and epidemiologists to monitor and predict the population's health needs, allowing strategic planning and making healthcare resource allocation more cost effective as well as facilitating the assessment of preventative healthcare initiatives. Centralised data can also be used by pharmaceutical companies to monitor the effects of newly released medicines. However, as a result of specific differences between regional healthcare services, this top-down approach fails to account for the unique requirements of each region and therefore struggles to deliver the benefits promised.

### **2.3 Patient centric care**

Patient centric care is an approach where patients control access to their health records. Putting patients in control would overcome the problems of multiple isolated specialist IT systems and avoid the rigidity of a centrally controlled government system. All the information for one patient would reside in one place and the patient would give clinicians access to the information and could ensure its accuracy. However, there are problems with the patient centric model, mainly concerning the reliability of information.

## **3. Human Centric Care**

Human Centric Care is an approach based on asking two essential questions for any healthcare system. "What is the system trying to achieve?" and "Who is responsible for achieving it?" For many patients, especially those with chronic diseases, the diagnosis, treatment, and monitoring of their diseases may involve multiple healthcare professionals. We believe that it is possible to allocate access to a patient's medical record to that patient, as well as to any number of specialist medical practitioners, in a way that maximises the accuracy and integrity of medical records and at the same time permits

the analysis of multiple medical records across the wider population.

Not all the information in a health record should be regarded as being of the same type. Medical information can be categorised by its source. Some information comes directly from the patient, for example signs and symptoms (i.e., high temperature or headache), while other information may come from medical professionals via historical events (admissions, investigations, prescriptions, and consultations) and medical opinions (diagnoses and prognoses). Problems arise when the information from different sources disagrees.

In a patient centric system, if the patient were to disagree with a diagnosis from a medical professional, he or she might choose to change that information to a preferred diagnosis, perhaps a self-diagnosis. In this hypothetical situation, other medical professionals who might be asked to make medical decisions on the basis of this single patient-controlled record might give inappropriate advice on the basis of this inaccurate information or might lose trust in the information and hence find it harder to give good clinical advice.

In a clinician centric system, if patients realise that their medical records contain errors, their lack of control and access to their medical record prevents them from improving the accuracy of the information and thereby the quality of the decisions based on it. Moreover, if patients tried to add additional data to health records, it would be difficult to store such data because of the fragmented health record systems.

The Human Centric Care approach recognises all the people involved in the provision of care and permits each person appropriate access and control with the aim of maximising the accuracy and integrity of medical records.

### **3.1 What is the system trying to achieve?**

In general, most healthcare systems are essentially trying to achieve the same thing.

However, specific systems in different countries around the world, and even within different parts of the same country, achieve those same goals in very different ways. We have been able to understand healthcare from multiple viewpoints, and we are developing a common framework for the fundamentals of healthcare provision that can be understood by all. The main benefit of this common understanding will be the ability to properly coordinate healthcare services across different service providers, saving time and money as well as improving both the patient experience and clinical outcome.

The healthcare framework is based on the clinical outcomes that all patients require, so these goals are common to every healthcare system (**Figure 2**). The healthcare framework describes the purpose of a healthcare system in terms of six clinical goals (rectangles). It is towards these ends that most healthcare processes are ultimately directed. Each goal is associated with criteria that define how well it has been achieved and these criteria fall within four distinct domains (circles). Information flows across the system in the form of health records that educate and inform patients, clinicians, and

mangers alike. Knowing that one has achieved a specific goal is very different from understanding how well it has been achieved. Both types of outcome depend on the best use of information within the system. It is information that must be captured, stored, and retrieved as health records and also used to educate and inform both patients and healthcare professionals at every step in the healthcare process.

### 3.2 Who is responsible for achieving it?

Each clinical goal is achieved by breaking it down into smaller achievable objectives. For example, to be diagnosed, the patient must explain his or her symptoms, the physician must perform an examination, and a technician might be required to carry out some medical tests. By understanding who is responsible for achieving what, we can establish a more detailed, human-centric view of the system.

The multiple human beings involved in achieving the necessary clinical outcomes for the patient form a local referral network. When a patient seeks access to medical care, he or she usually approaches a generalist first. For non-emergency care in the UK, this is the patient's

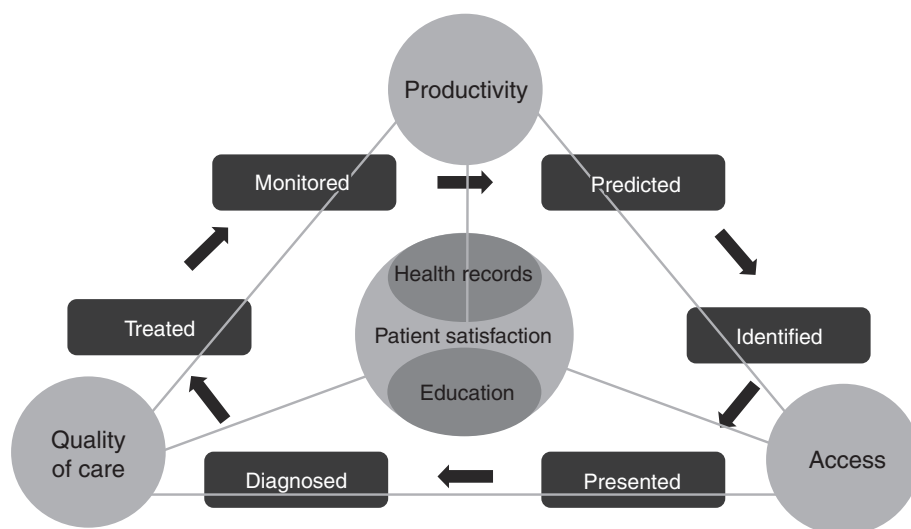


Figure 2  
Healthcare framework.

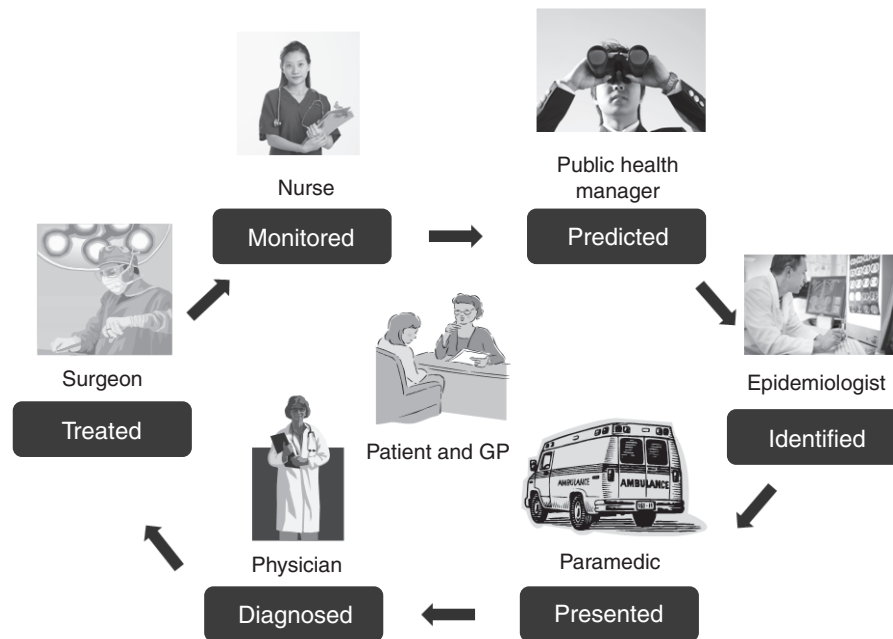


Figure 3  
Individual goals.

GP (in the USA: primary physician). Therefore, the heart of the local referral network consists of the patient and GP. If the patient's disease is a common one, the GP may be able to make a diagnosis; if it is rare, a provisional diagnosis is given and a referral to a specialist practitioner is made in order to obtain a definitive diagnosis. Regardless of who actually makes the diagnosis, the physician will often require medical test or investigation results, which might necessitate a further referral to other practitioners who can undertake the required procedures (e.g., radiologist and pathologist). Only after a diagnosis has been made can the disease be treated, and again the treatment may be provided by another healthcare professional (e.g., surgeon) as may the patient's monitoring once the treatment has been received (e.g., district nurse). Thus, a network of practitioners (human beings) surround the patient as he or she progresses through the system. For the majority of patients, this referral network is limited to their geographic locality and is the essential unit

that delivers their healthcare. The more unusual the disease, the further the network must extend into primary, secondary, and tertiary care. As shown in **Figure 3**, each person working in a health system directs his or her efforts to achieve one or more of the six clinical goals. Being clear about who is responsible for achieving what can help us design our IT systems around people as well as processes.

#### 4. Conclusion

This paper presented our holistic approach to healthcare called Human Centric Care. Any healthcare system should have patients at its centre, but they cannot be expected to navigate and coordinate the system by themselves: each patient needs someone who understands them and the system, someone whose opinion they trust. In the UK, the GP is the doctor that the patient knows best, and the doctor that knows most about the patient. Therefore, the GP should take the lead in managing and coordinating patient healthcare, and our IT systems should

reflect this. Instead of creating multiple specialist record systems that all independently send and receive information to and from a patient's GP, we should create only a single electronic health record because that is all that the patient needs. We believe that while patients should have full access to their health records, it would be best if these records are managed by their trusted GPs. Each specialist should be able to access and update these records as necessary.

By considering the system as an entire referral network, we can create and comprehend a common framework. The referral network will consist of many different practitioners, who are all charged with delivering the highest quality outcome for the patient. There will be multiple instances of these networks and we should expect them to evolve as circumstances change.

Our IT system must therefore be adaptable to changing circumstances. By understanding what the healthcare system is trying to achieve and the human relationships within it, we can build more flexible IT systems around both people and processes. Medical records are as valuable as they are accurate. With this in mind, it is important to recognise that human beings—whether they are clinicians, patients, or managers—make mistakes. We believe that the ideal system enables the whole local healthcare referral network to ensure that medical records have the highest accuracy and integrity.

## References

- 1) World Health Organization: World Health Statistics 2009. WHO Press, 2009, pp. 107–117.
- 2) World Health Organization: World Health Statistics 2009. WHO Press, 2009, pp. 131–141.



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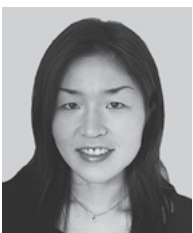


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