

Home Healthcare – enabling healthy, independent living at home

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Editor in chief

Koen Joosse
koen.joosse@philips.com

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ppa@philips.com

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Summary



Changes to the demographics, disease characteristics, patient desires and stresses and strains on healthcare systems and resources across the world are stimulating new thinking about established healthcare systems and practices.

Whether it entails medical professionals engaging with a patient in a domestic setting via technological innovation, or providing greater independence to elderly citizens in their own dwellings through a range of pioneering devices, home healthcare is firmly establishing itself as a new axis in the medical domain. This paper charts the current status and progress to date of home healthcare. Highlighting Philips' position in this sphere, the document serves as a call to action to the myriad of stakeholders who, in unison, can help to promote and progress the home healthcare model and achieve an extraordinary overhaul of healthcare as we know it.

Introduction

Healthcare is a vast and complex area that touches each of us at various intervals during our lives. Healthcare is also an area that is continuously developing, fuelled by clinical and technological progress, changing demographics and disease patterns, and, increasingly by challenges related to its affordability and shortage of medical staff.

Continuously, debates have raged locally and globally on how best to provide medical care, and numerous systems have been devised and revised - with varying levels of success. Today, new challenges, trends and opportunities are giving rise to new and difficult questions as to where we go next.



The healthcare puzzle

The growing - and greying - of the world's population in the 21st century is a first aspect that calls for a reform of traditional healthcare structures in order to cope with increased volume and variety of demands for medical services as a result of this trend. The world's population surpassed the 6 billion before the turn of the new millennium, with 2 billion expected to be aged 60 or over by 2050.^{1,2}

While this may lead to a steadily increasing need of acute medical care, a more important and fundamental challenge is the need for ways to support the elderly with the non-acute care needs that tend to come with age. These needs are often related to aspects that limit people's ability to continue living independently, for example because their health condition requires regular surveillance or poses increased risks of accidents. In traditional health systems, this leads to hospitalization or other forms of intensive medical care. Increasingly it is realized that this is not necessarily the best solution, both from a patient's perspective and from an economical point of view, and

that solutions that support elderly people to continue living independently in their own environment could contribute to a healthcare system that is more patient focused as well as cost effective.



Changing disease patterns

As a result of new treatments and technologies, an increasing number of patients will survive serious health conditions such as cancer and cardiovascular disease. However, this means that they will often turn into chronic patients, or at least need to stay under observation, for many years.

In addition, changing lifestyles across the world will continue to result in a rise in these conditions, as well as other chronic diseases such as diabetes. Currently, 70-80% of healthcare costs is spent on chronic

¹ Speech by Eric Z. Silfen, Chief Medical Officer Philips Healthcare, 16.9.09 – "Healthcare in the Age of Empowerment: Building a bridge between hospital and home through technology".

² United National Report 'World Population Ageing 2007' – Department of Economic and Social Affairs, Population Division.

diseases, and this fraction is expected to keep rising. This creates a shift from treatment to continuous care which can better be delivered outside the traditional hospital setting in a form that is more convenient for patients as well as more cost efficient. Increasingly, home monitoring and care solutions are enabling this in a way that is just as safe and effective as treatment in healthcare facilities.

Empowered patients

Societal and lifestyle trends over recent decades have brought a transformation in our thinking and approach to daily living. Expectations of patients and their families are greater than ever before, such that options offering greater efficiency, affordability, flexibility and peace of mind are now increasingly being demanded and embraced.

People want access to healthcare anywhere, at any time and tailored to their specific needs. Perhaps for the first time ever, the consumer, as patient, is dictating the new direction of healthcare.

Another change affecting care is the loss of traditional family patterns in many places. It is increasingly less commonplace

that parents live with, or close to, their children and that they are looked after by them when they develop a need for care.

Sustainable healthcare systems

All of these changes are occurring at a time of rising healthcare costs - a situation worsened by declining numbers of healthcare professionals within the system.

Health spending as a percentage of GDP has increased dramatically in recent decades, and forecasts suggest that this trend looks set to continue. The United States, to take just one example, was spending 5.2 per cent of its GDP on healthcare in 1960, yet is projected to spend 19.5 per cent of its GDP by 2017.³

In a keynote address '*Proposition for an Aging Society*', delivered in Berlin in 2009, Dr. Gottfried Dutiné, Executive Vice-President and Global Head of Markets and Innovation at Philips, outlined how people everywhere were thankfully living longer, but that this trend "heralded a serious challenge," given that the "subsequent increase in chronically ill patients would result in an explosion in costs" - to the point of being "unaffordable".⁴

³ California Healthcare Foundation (www.chcf.org/documents/insurance/HealthCareCosts08.pdf)

⁴ 'Proposition for an aging society', Handelsblatt Electronic Conference, Berlin 2009

The premise and promise of home healthcare

These and related circumstances have initiated a new dialogue - and signs of a new dynamism - between political leaders, care providers, scientists, researchers and patients, as to the future structures of healthcare.

Many, Philips included, strongly believe that home healthcare technologies have the potential to revolutionise the delivery of care and play an important role in addressing the many challenges in healthcare globally.

With technologies and devices linking patients to emergency services and physicians, or enabling independent living through remote monitoring and better self-management of chronic diseases, home healthcare promises much. Philips sees home healthcare as the extension of medical care and attention beyond the perimeter of hospital grounds. It is not a replacement for hospital care, but rather one tool in the reconfiguration and refinement of many aspects of patient care. The physician remains responsible for patient safety, but home healthcare can change the delivery of healthcare.



The premise for home healthcare is a very simple one, according to Walter van Kuijen, general manager of Philips' Home Monitoring business: "Most of us are consumers of care at some point in our lives. As a patient, whenever our independence becomes challenged, home healthcare options present a beneficial offering. Returning to the safety of our homes and being monitored allows us to maintain that independence."

Convergence in this new healthcare domain

According to research conducted by GBI Research⁵ on the future of the home healthcare equipment market to 2016, this sector is set to boom over the next five years, driven by demographic factors. Forecasts also show a growing focus on self-monitoring to curb spiralling healthcare expenditure. The global home healthcare equipment market, valued at over \$40,534 million in 2009, is set to dramatically increase to over \$66,877 million by 2016. GBI's research reveals that technological advances are measurably changing perceptions of consumers.

Alongside Philips, companies such as GlaxoSmithKline, AstraZeneca, Roche, LifeScan, Bayer, Intel and many others are also increasingly active in different parts of the home healthcare domain.

Groups including the International Longevity Center are conducting ongoing research, scientific workshops and engagement with policy makers to address the many implications of longevity. In relation to the role of Information Technology (IT) in healthcare, the Agency for Healthcare Research and Quality (AHRQ) has undertaken extensive research towards understanding healthcare consumers' awareness, perceptions and fears concerning health IT.

NHS Connecting for Health is an integrated IT initiative that supports the United Kingdom's National Health Service to deliver better, safer care to benefits through new computer systems and services. Through improvements on information storage and sharing, patients are provided with more choice, control and access to information. Clinicians also

⁵ GBI Research (published March 2010) - The Future of the Home Healthcare Equipment Market to 2016 - Market Forecasts, Competitive Landscape and Pipeline Analysis



Philips was a major partner in MyHeart, one of the largest European research projects completed in the field of personal healthcare. With more than 30 partners, the project investigated earlier diagnosis and prevention of cardiovascular disease through unobtrusive monitoring of vital body signs. In one prototype, a patient's heart rate could be measured using ECG textile sensors in the pillow case and bed sheet while the patient is asleep.

gain from this system, by spending less time on repetitive administrative tasks, with more time and energy to devote to patient care.

At a public affairs level, COCIR⁶ (the European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry) has actively promoted the benefits of increased, appropriate ICT usage in healthcare. Working closely with European associations, including medical professionals and healthcare providers, COCIR has issued a series of recommendations for better deployment of telehealth. Philips is a member of COCIR.

All of these home-orientated, citizen-focused innovations and initiatives are gradually repositioning healthcare coordinates from both patients' and healthcare providers' perspectives.

⁶ www.cocir.org

Realizing the potential

While home healthcare promises a diverse range of positive outcomes for the individual patient and helps to address infrastructural and societal deficiencies such as hospital bed capacity, rural isolation and urban congestion, how the model will manifest itself into the future has yet to be determined. How, for example, will it be funded, and who will demand it? Should one expect home healthcare in the longer term to replace or merely co-exist with hospital-based care provision? How far can - or should - home healthcare penetrate the hospital-based care system?

In this paper, Philips articulates its vision on healthcare and the role the company believes that home healthcare technologies can play. This document outlines the first steps that Philips has taken to date in advancing the home healthcare model internationally, and looks to how home healthcare might evolve and address wider healthcare challenges in the medium to longer-term.

The paper seeks to identify the critical factors that are shaping the continued development of home healthcare products and their integration into day-to-day healthcare practices. It examines the technological and consumer trends that have characterised the momentum in this growing channel of healthcare.

Finally, the conclusion is reached that home healthcare, if underpinned by an appropriately structured business model, has the potential to become part of the medical mainstream and, in so doing, will help to deliver faster, more systematic, simplified secure patient-focused care against the backdrop of extremely testing demographic, economic and infrastructural realities. However, only a coordinated effort of cooperation from all players in the healthcare arena, however, will initiate the paradigm shift required to achieve this.

Philips' vision and approach

This chapter dives deeper into Philips' vision on home healthcare and highlights some of the steps it is taking towards developing simple and sensible solutions for healthcare at home.

The first question people usually ask themselves when admitted to hospital is 'When can I leave?' There is a natural tendency to seek to get home. This statement will resonate with most people at some point in their lives. Going to hospital is not meant to be an altogether pleasant experience, but is something that one must endure in order to return to good health. Entering an institutionalized setting, however clean, warm, friendly and professional, is still a source of unease for many citizens, regardless of age or reason for admission. There remains a certain fear and stigma associated with 'hospitalization'. In extending the reach of healthcare to people's homes, Philips strongly believes that next to providing the best care possible from a medical perspective, the way this care is experienced by the patient is of essential importance. In Philips' vision of home healthcare, patients can continue to live their lives as normally as possible, secured by unobtrusive technology that supports rather than dictates their daily routine.

Home healthcare as part of patient-centred, integrated healthcare systems

Philips believes in a holistic, patient-centered approach to healthcare spanning the entire cycle of care - from disease prevention, screening and diagnostics to treatment, monitoring and health management. At the heart of this approach is a commitment to simplify healthcare and to give people the best care possible, wherever that care occurs.

Home healthcare is a core part of Philips' healthcare strategy. This focuses on one hand on solutions and services for the home that connect patients to their providers and support individuals at risk in the home through better awareness, diagnosis, treatment, monitoring and management of their conditions. A second focus are solutions that improve the quality of life for aging adults, for people with chronic illnesses and for their caregivers, by enabling healthier, independent living at home. Finally, a range of solutions is aimed at treatment and support of specific conditions that do not require hospitalization, such as respiratory and sleep disorders.

Few would argue against hospitals remaining the optimum setting for treating serious clinical conditions. But in administering relatively routine care such as monitoring or screening, alternative locations and innovations - i.e. the home healthcare proposition - are logical from a capacity, cost and convenience standpoint.



Philips Lifeline's medical alert service supports independent living by simply connecting people at home to the right help at the push of a button.

At the core of home healthcare is building a bridge between hospital and home, tailored to accommodate each patient's specific needs. The challenge for Philips and others is to ensure that the provision of care outside of the traditional hospital setting is done in such a way that quality of care, affordability and patient satisfaction are guaranteed in all instances.

Patient before process

Explaining the guiding principles behind Philips' approach to home healthcare, Clive Van Heerden, Senior Director Philips Design, says "We try to design not from a corporative convenience perspective, but from the patient's perspective." Putting technology into homes is not the solution. While a critical component in the development of new home healthcare services, technology remains merely an enabler rather than a provider of care.

Mili Docampo Rama, Director, Strategic Future Design, Philips Design, says that while technology allows new connections to be made between patient and care providers, this will only work if we manage to put systems in place at home that

non-expert, non-technological users can operate as part of home life." Unobtrusive, intuitive, designed around patients needs and seamlessly integrated with their daily routines are key words in the design of solutions that fulfil this need.



Home respiratory therapy solutions allow patients to breathe easier, providing enhanced functionality, mobility and independence at minimal discomfort.

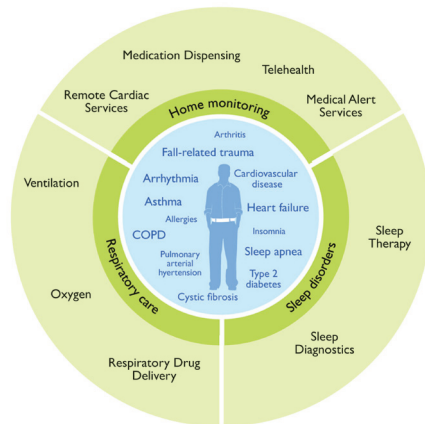
Echoing this point, Clive Van Heerden says that home healthcare is a service that provides dignity and normality, affording patients respect in a way that doesn't make them feel remote or marginalized.

Building the Philips home healthcare business

Home healthcare is not a single proposition, but in reality serves a wide scope of patients, conditions and purposes. Some solutions are already well-established and mature; others are still very much in the exploratory phase, either technologically or in terms of clinical, economic or user adoption.

Two priority areas in the area of home healthcare are (i) the management of those already affected by a medical condition and (ii) the monitoring of healthy people in order to maintain their good health. Indeed, there is a growing trend from curative to preventative care, and from clinical to therapeutic care. Based on the promise of home healthcare to improve the delivery of care to a broad range of patients as well as to solve some of the most pressing issues

of the healthcare puzzle discussed in the introduction of this paper, Philips is developing its home healthcare business with priority and through a variety of different routes. The following chapters give an overview of the company's visions on these directions and examples of practical steps it is taking to help shape this new world in healthcare.

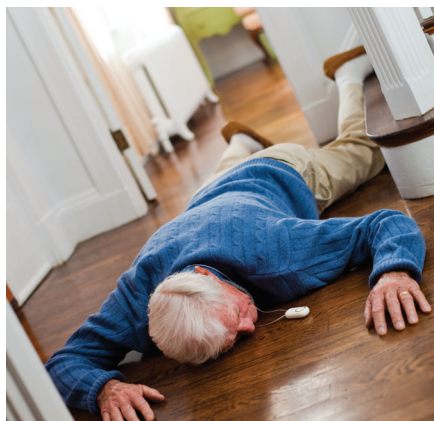


Medical conditions addressed by Philips Home Healthcare.

Medical alert and emergency systems

The acquisition in 2006 of *Lifeline* was an important step in bolstering Philips' home healthcare offering. Through *Lifeline*, senior citizens and their families are given peace of mind by connecting an elderly person in distress with immediate help, medical assistance and an alert call to their neighbor or family. Getting assistance is no more complicated than pushing a button on a wristband or pendant. Within seconds, a trained responder answers the call, determines the patient's needs and makes the appropriate call for help.

A recent addition to the functionality of *Lifeline* has been the introduction of a fall-detection function. *Philips' AutoAlert Pendant* detects when a person falls, and automatically calls for help if the injured party is unconscious or immobilized and unable to push their help button. When one considers that falls are the leading cause of non-fatal injuries and hospital admission for trauma, as well as injury-related deaths⁷, the crucial importance of this device becomes evident.



Philips Lifeline with AutoAlert is the only pendant-style help medical alert button that can automatically place a call for help if it detects a fall and patients are unable to push the button themselves.

⁷ National Center for Injury Prevention and Control, Fact Sheet on Falls. <http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html>. Originally from: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2005)

Another category of medical emergency solutions is Philips' range of automated external defibrillators. While speed of treatment is of utmost importance in case of a sudden cardiac arrest, defibrillator equipment is often only available at public places and meant for operation by professionals. Philips' HeartStart Home Defibrillator is specifically designed for use in the home by virtually anyone,

using voice instructions to guide through each critical step. Although not yet as commonplace as the traditional house smoke detector or security alarm, people are increasingly seeing home defibrillators as a natural add-on to the traditional first-aid kit we might keep in the kitchen cupboard.



Philips HeartStart Defibrillator



Philips Telehealth solutions provide a two-way flow of information between the clinician and patient, essentially providing a 'virtual house call' service between doctor and citizen.

Telehealth

While Lifeline is designed to address crisis situations, remote monitoring is an upcoming and still largely exploratory development that aims to empower patients to prevent crisis situations. Philips explores a range of so-called Telehealth solutions that allows patients' vital data are remotely monitored by clinicians. This assists more timely care decisions and avoids unnecessary hospitalizations. For patients – elderly people, chronic patients, people at risk – it means fewer trips to the doctor and a greater sense of well-being at home thanks to regular interaction with monitoring nurses.

Philips Motiva is an interactive healthcare platform that connects chronically-ill patients to their clinicians via the home television and a broadband internet connection. *Motiva* automates disease management activities, and provides patients with personalized daily interactions that aim to motivate behaviour change. The integration of *Motiva* with people's television at home is obviously meant to simplify the use of the system and integrate it as much as possible into their daily routine without additional burden.

A Philips-led study published in 2010, the CARME (Catalan Remote Management Evaluation) study carried out with the Catalan Health Services revealed significant benefits in the management of certain chronic diseases as a result of telemedicine. Using *Philips Motiva*, patients with severe heart failure were monitored at home from the hospital.

Preliminary data illustrated that these patients showed an improvement in their perception of their quality of life, while hospitalizations due to heart failure were reduced 68% during the one-year period of the study. The study's favorable results open the door to the use of *Motiva* and telemedicine solutions for chronically-ill patients in primary care settings.⁸

On a more exploratory basis and looking for even further seamless integration with patients' daily routine, Philips is involved in a number of innovative research projects together with partners with complementary backgrounds. Examples are initiatives such as *MyHeart*⁹ and *MyCycle*¹⁰, both funded by the European Union. These were aimed at finding ways to help

empower citizens to fight cardiovascular disease by monitoring vital signs through sensors embedded in clothing, making diagnosis, detecting trends and offering therapy recommendations accordingly.

Enabling independent living of elderly people

Besides the medial alert & emergency and remote monitoring solutions discussed above, there are further opportunities to specifically support elderly people to keep on living independently.

An important threat to independent living is the increasing risk of taking wrong medication. A staggering 10 per cent of all hospital admissions involving senior citizens is due to medication errors.¹¹ In order to help solve this, Philips has developed a Medication Dispensing Service that provides a reliable, structured and monitored program of dispensing, holding up to 40 days' medication and administered safely in the necessary doses. These simple and easy to use dispenser systems have proven greatly effective, delivering a 98.6% in-home adherence level among monitored subscribers.

⁸ Press release at www.newscenter.philips.com, May 31, 2010

⁹ www.research.philips.com/technologies/projects/heartcycle/myheart-gen.html

¹⁰ www.heartcycle.eu

¹¹ C.Nananda, J.P. Fanale, P.Kronholm, "The Role of Medication Non-Compliance and Adverse Drug Reactions in Hospitalizations of the Elderly," *Archives of Internal Medicine*, 150 (1990):841-845

Next to this very practical solution for elderly people, Philips also pushes the R&D boundaries into the area of health and well-being. One area in which Philips is undertaking health-related research is the area of lighting and its beneficial impact on management of dementia.



Philips Medication Dispensing Service provides an easy-to-use solution that helps patients maintain a proper medication schedule. With a simple audio reminder and at the push of a button, patients get their medications at the pre-programmed times.

Supporting the chronically ill

Similarly, specific solutions are being explored to enable patients with chronic conditions to continue living independently in a secure and comfortable way.

Philips Remote Cardiac Services provides remote cardiac diagnostic and long-term follow-up monitoring solutions to patients with pacemakers, suspected arrhythmias and implanted defibrillators. Qualified staff analyse the transmitted data and provide custom reports to the patient's caregiver. This process reduces the need for office visits while at the same time reducing the response time in case treatment or in-person consultation should be needed.

Respiratory and sleep

Since the acquisition of Respironics in 2008, Philips has a leading position in the market for sleep management, respiratory care and non-invasive ventilation. As these are all conditions that may require long-term or permanent treatment, the direction for home healthcare solutions is an obvious choice. More information on this leadership business is given in the separate sidebar.

Searching the right models

Philips' commitment to addressing chronic diseases and their impact on patients has been illustrated by the forming of a new partnership in November 2009 with *Achmea Health*, The Netherlands' largest health insurance provider. Both companies have agreed to jointly implement a five-year plan to develop solutions that will increase the independence of people living with chronic conditions.

Respironics – Waking Up To The Challenge

A major component of Philips' home healthcare drive is Philips Respironics, which specializes in devising products that improve respiratory conditions.

A key pillar of Respironics' activity relates to tackling Obstructive Sleep Apnea (OSA), a condition that affects 20 million adults in the United States alone. OSA makes breathing difficult during sleep, and if left untreated, can increase the risk of high blood pressure, heart attack, stroke and general reduction in one's quality of life.



For care providers, Respironics' Clinician Section on SleepApnea.com, provides ongoing clinical education to those healthcare practitioners working with patients who may have sleep and respiratory disorders.

In addition to a wide range of OSA-related products provided to patients and clinicians, Philips Respironics has invested significantly in

conducting research and in building specialized sleep laboratories.

In India, Philips commissioned a major survey on sleep in 2009, which revealed that 93 per cent of Indians surveyed across 25 cities are sleep deprived, with 58 per cent of those surveyed feeling that their work suffered from lack of adequate sleep. While clearly a quality of life issue, sleep deprivation is, more profoundly, a serious health risk (diabetes, weight gain, high blood pressure, etc).¹²

In the wake of this survey, Philips Respironics announced its participation in assisting hospitals and clinics in Mumbai and New Delhi to establish 130 sleep labs, by providing the technology, facilities and training required to undertake ground-breaking investigations. Discoveries stemming from this research will assist understanding of sleep deficiency and related conditions, and potentially revolutionize our entire approach to sleep.

Dr. David White, Chief Medical Officer at Philips Respironics, positions (i) anxiety and (ii) lack of opportunity to sleep as the main factors in sleep-related difficulties. In this regard, Philips Respironics is focussing on developing surgical devices and other products to address sleep apnea and insomnia. Philips Respironics is also working with other divisions such as Philips Lighting, to further explore potential solutions that address sleep conditions.

¹² Philips Sleep Survey, November 2009 (www.sleep.india.philips.com)

Healthy living

Prevention of disease is always better than cure and everyone knows that a healthy lifestyle is one of the best preventive measures one can take. Healthy living and taking regular exercise in particular, is also a proven way of keeping people fit and active up to higher ages.

To help people adopt and maintain a more active lifestyle in a subtle way and adapted to their preferred schedule, Philips has developed the novel DirectLife activity

monitor. A tailored fitness solution which helps citizens to become more aware of their health in a fun and interactive way, it tracks the body's activity, monitors progress and, supplemented by personal coaching, helps to maintain increased activity within one's daily routine.

Operable from the confines of one's home, this flexible, portable and 'always on' innovation accommodates people's timetables and desires to spend time in a familiar, home environment.



The DirectLife monitor measures all movements throughout the day, making fitness a part of people's daily routine by showing that everything they do is an opportunity to get and stay fit.

Progressing the partnership approach

Accommodating the changing healthcare requirements of today and tomorrow is only achievable if the need for extensive reform in healthcare is broadly acknowledged and acted upon in partnership. Buy-in from medical, commercial, political, civic and other relevant stakeholders is a prerequisite for sustainable and efficient healthcare into the future.

Many parties have already reached consensus that the home healthcare model is a sensible and attractive route to solve parts of the healthcare puzzle described in the introduction. From discussing the 'if', the debate is now also turning into how home healthcare can materialize into a workable, lasting and also commercially viable part of healthcare systems across the world.

Agreement on the way forward is a first requirement. An important aspect therein is to get the financial foundation right, which includes the important question of how reimbursement is organized and how that is linked to the actual outcome of medical care. Standardization and regulation is another issue that needs to be addressed. Similarly, education and increasing awareness among doctors and patients alike is an important aspect of building support and demand.

This chapter will look at these aspects in more detail.

Charting a course forward

For home healthcare to succeed, the interdependency between the cluster of important stakeholders must be accommodated. Governments have a duty to provide for the citizens that they represent, yet can only do so in a healthcare context if working with others. Medical professionals, while having a duty of care to the individual, must be appropriately supported by government as new trends place additional pressures on all front-line and supporting healthcare staff. Commercial providers, who have profit margins and shareholders to consider, must without exception place patients, individually and collectively, at the top of their priority list. The breakthrough for the home healthcare industry will be the development of the ecosystem involving insurance companies, physicians, government and other stakeholders.

Philips is continuously seeking to facilitate a collaborative platform for home healthcare, by bringing together different stakeholders on an ongoing basis - in person and online - to discuss and examine how best to develop new avenues in this field.

An active participant at various international conferences from the European Business Summit to the Arab Health Exhibition and Congress, Philips is committed to forging new relationships and encouraging collaborative activity among multiple audiences. Philips also hosts its own series of stakeholder fora on a global scale, with recent examples being Japan, the United States, The United Kingdom and Belgium.

Through GetInsideHealth¹³, Philips provides and encourages insights and discussion on the current and future directions of health and well-being.

Buy-in from governments (and including the European Commission) into home healthcare has been described as “strong”, “supporting” and “stimulating,” though there is also a sense that governments are asking “What do we do here; what’s next?; how does this industry look to progress into the future”? “The reality,” according to Gottfried Dutiné, EVP and member of the Board of Management of Philips, “is that we are all still learning”.

¹³ www.getinsidehealth.com

Solving the financial puzzle

While patient convenience and satisfaction are evident outcomes from home healthcare solutions to date, financial considerations such as reimbursement are central to its future success. Governments and other key decision-makers are seeking compelling economic evidence that home healthcare is not just a sensible proposition, but an affordable one. Who pays for each aspect, who and what services are insurable and refundable, and what incentives are available to the various stakeholders are all questions that have yet to be answered.

An important theme in payment and reimbursement discussions is the question which incentive should be applied. Current practice is often a flat rate payment per case, per operation or per treatment. This means that there is no connection between the payment and the eventual outcome of the therapeutic measure or for the efficiency or quality of the work. Therefore, many argue that a paradigm shift towards a more outcome or performance based payment system is both desirable and unavoidable.

Once home healthcare infrastructure such as remote monitoring is in place, ongoing costs are reduced compared to similar care provided in a hospital setting where bed capacity and the expense of travel to and from hospital prove costly. However, often the “short-term” perspective of decision-makers proves prohibitive to the development of home healthcare. “The initial cost of home healthcare must be seen in the context of the total cost of the care cycle. For a broader roll-out of healthcare solutions at home, the market needs a regulatory framework for all participants that emphasis total cost of care, not merely the initial costs”, states Gottfried Dutiné, Board member of Philips.

The issue of cost “comes in many forms, such as the loss of earnings and the potential inability to regain employment”, and is therefore not one solely for governments or insurance companies. The issue of how services such as home monitoring will be paid for remains outstanding.” It could be argued therefore that efforts to manage the prevalence of sleep apnea, as just one example, should be seen as “an investment”, and not a cost.

Regulation and standardization

While for patients home healthcare should predominantly be a simple, comfortable and unobtrusive way to receive care, the actual realization depends on the availability of the right technology to enable the different components of such a system. With elements such as remote monitoring, data storage and transfer and the fact that home healthcare will most probably not arrive as a 'big bang' but rather evolve gradually, interoperability and connectivity are issues that need attention.

Furthermore, the fact that healthcare represents both vital and privacy sensitive information calls for agreements and decisions regarding privacy and use of information.

The reality is, however, that in contrast to many other services and manufacturing based industries, healthcare is still subject to local, national regulation, with a number of key players that have their own, sometimes conflicting interests.



At the roundtable discussion, "The Future of Healthcare: The Landscape Transformed", 125 top influencers from various backgrounds gathered. It was sponsored by Harvard Business Review and Philips. Dr. Regina Herzlinger (right), Harvard Business School professor kicked off the event with a keynote address. Philips Chief Medical Officer Eric Silfen (left) was one of the panellists.

Agreement in March 2010 on an eHealth Ministerial Declaration for European cooperation on e-Health is a boost to the home healthcare agenda. Standardization on eHealth may pave the way for greater coordination and uniformity on devising a home healthcare framework.

At a major eHealth conference in Barcelona in 2010, the European Commission described eHealth as “the fastest growing pillar of the healthcare industry”, and a “growth machine” for Europe, which has one third of the €60 billion worldwide eHealth market share.

The success of the European Commission-funded European Patients Smart Open Services (epSOS) pilot, the first eHealth project to cluster such a large number of countries, has also been a promising development and is proof that continuity of care across national borders is possible. It is hoped that this will enable a pan-European, interoperable and efficient eHealth system. While critical factors including accreditation, privacy and other legal concerns are likely to be addressed at a national level, such progress and guidance

from an international source will greatly assist momentum.

The roll-out of Europe’s wider digital agenda, as led by EU Commissioner Neelie Kroes, will serve to further integrate international communications. The Commissioner’s pledge to “work together to deliver tools for patients that prevent health problems and personalize their healthcare”¹⁴ is a welcome statement of intent.

Education is key

Another challenge facing home healthcare providers, however, is that in promoting new solutions, one must acknowledge and be sensitive to the reality that traditional structures and practices are often a source of great comfort for people, not least in times of vulnerability. The idea of “experimentation” or straying from medical norms can often be too daunting for many patients.

The key to gaining people’s acceptance of home healthcare, according to Eric Silfen, Chief Medical Officer, Philips Healthcare, is education. “When it comes to healthcare, empowered patients are educated patients”.¹⁵

¹⁴ A new era in e-Health’ eHealth Conference 2010 Barcelona, 15.3.10

¹⁵ Dr. Silfen’s address to the Nikkei-Philips Symposium: Independent Living and Home Healthcare, Tokyo, Japan, 16.9.09

The requirement, therefore, is for the presentation and articulation of home healthcare as an economically advantageous, medically beneficial and accommodating support that enables continuance of comfortable home living during the cycle of care. This task will be made easier when clinical evidence and longitudinal data is amassed, assessed and circulated. An all-encompassing alliance comprising home healthcare producers, exponents and partners across the medical, commercial, public affairs arenas would greatly facilitate such verification.

The Philips Center for Health & Well-being is one such initiative dedicated to gathering stakeholders to foster and provide expert insights on national and global trends relating to health and well-being. In relation to how sustainable healthcare systems can be guaranteed into the future, the Center is currently investigating to what extent home healthcare solutions provide the remedy for patients with chronic diseases.

When assessing recent attitudinal studies, it is reasonable to envisage that people will continue to take greater ownership of their own health and well-being.

Philips Gauging People's Attitudes towards Health

A major study undertaken in the U.S. by the Philips Center for Health and Well-being¹⁶ has unearthed some interesting findings, including an unprecedented trust in technology. The study revealed that.

- More than three quarters (76 per cent) believe that medical technology will allow them to live longer and a similar percentage (74 per cent) feel it is their responsibility to figure out which technologies will help them improve their health and well-being, according to the study.
- More women than men were in favor of using technology to improve their health and well-being, scoring higher in areas such as using lighting to reduce stress, wearing a monitor that can summon emergency help, and using a device to help plan healthy meals.
- Doctors remain the Number 1 go-to source when Americans are sick. According to this study, Americans are twice as likely to turn to doctors as they are to use any other source. Doctors also ranked at the top of the list in Philips' 2004 study. Nearly half (48 per cent) of Americans chose doctors as their first source of information in 2004, while 53 percent did so in 2009.
- Significantly, the Web has emerged as a more important source for consumers in the current study - a change from 2004, when family members and friends came second after the doctor as a first stop for health information. The study shows that the Internet has now surpassed friends and family as the favored source for health-related information.

Philips' role in the preventative care arena is becoming increasingly important, and findings from the Philips Index: America's Health and Well-being Report 2010 paint a vivid picture of the enormity of the task in encouraging the general public to (i) get checked out by the doctor and (ii) accurately evaluate their weight, as outlined below:

- 45 per cent of Americans avoid going to the doctor as much as possible; however, when they do go, 71 per cent still follow "doctor's orders" and follow through with the recommended treatment.
- The Philips Index shows that Americans are not evaluating their weight accurately, a key factor in overall health and well-being. Just 39 per cent of Americans consider themselves overweight; in stark contrast to a report issued by the National Center for Health Statistics which finds more than two-thirds (67 per cent) of American adults to be either overweight or obese. In addition, 80 per cent believe they are in excellent or generally good health. But when asked about their actual physical activity, only 51 per cent feel they are as physically fit as they could be, a mere 29 per cent believe they are in better shape than ever, and 66 percent admit they wished they exercised more.

The Philips Index on health and well-being research is repeated in a large number of countries across the globe. Results are published by The Philips Center for Health and Well-being¹⁷.

¹⁶ The Philips Index: America's Health and Well-being Report 2010, from the Philips Center for Health and Well-being

¹⁷ <http://philips-thecenter.org>

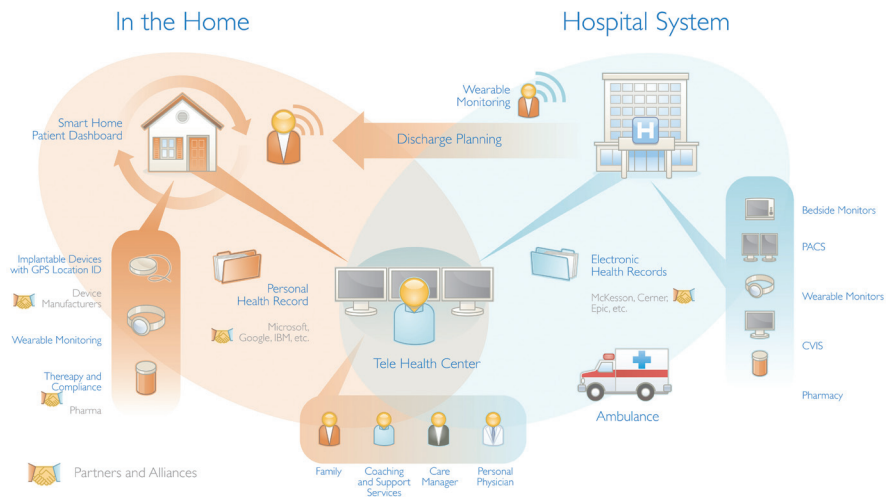
Conclusion

Society today is increasingly shaped by the technological advances of the modern age. How we as humans live, work and communicate with each other is increasingly influenced to some degree by consumer appliances with a digital component. Healthcare is now no different. It is a device-led and demand-led service.

While a service administered to us by professionals, healthcare remains a largely personal and private thing. Innovation has now meant that increasingly, citizens can equip themselves with certain tools to manage their health in partnership

with a clinician, without the need for hospitalization. The expertise of clinicians, however, is and should always be of paramount importance, and human interaction is an important tenet of care that must never be entirely lost.

Adopting a somewhat radical new approach on a policy as emotive as healthcare requires courage, conviction and leadership by political community, clarity of purpose by healthcare providers, and a clear understanding by the general public of what exactly is being proposed. Implications of health reform are numerous yet necessary, and hindrances



Home healthcare can play a key enabling role in an integrated healthcare system ensuring continued care for patients who need to stay under surveillance after leaving the hospital.

to achieving such progress must be identified and progressively worked through in an inclusive, collaborative and systematic manner.

Philips' ethos of healthcare simplification by focussing on the patient and provider throughout the complete cycle of care is a tried and tested formula. Home healthcare, too, will flourish if it is maintained as a patient-centric offering. Healthcare is emotionally-driven and process-driven solutions are not something to which patients or their families warm. Clear responses to the "what does this do and what does this allow me to do?" questions typically posed by current and prospective patients are essential in order to demystify complex medical procedures. Peace of mind, assurance and transparency are of paramount importance to all of us in the context of health and well-being.

The challenges facing home healthcare are wide and varied, and must be addressed in a collaborative environment involving all relevant stakeholders. And these challenges - medical, emotional, financial and inefficiencies - must be resolved, not simply relocated.

Philips believes that the receptive response from most governments to home healthcare can and will be leveraged to good effect. Following recent related progress at European Commission level on eHealth and digital integration, all governments globally can be encouraged by both commercial and non-commercial stakeholders to explore the formulation of an international charter or equivalent set of principles that map out best practice in home healthcare. An investment in the health of the next and future generations is a prudent course of action. Indeed, Philips would go further than this and suggest that it is our responsibility, and nothing short of a collective imperative.

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