European Commission

JRC SCIENCE AND POLICY REPORTS

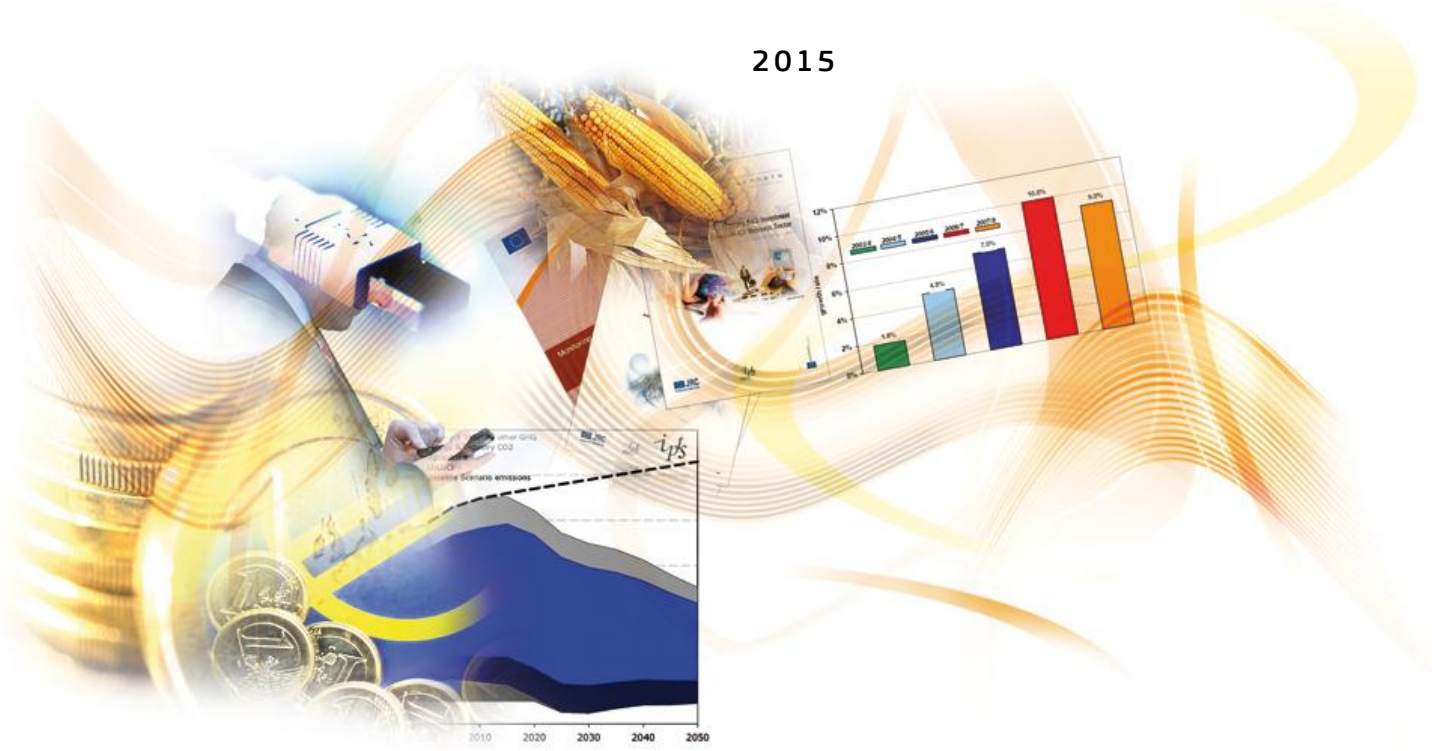
Strategic Intelligence Monitor on Personal Health Systems Phase 3 (SIMPHS3)

Veterans Health Administration (USA)
Case Study Report

Authors:
Francisco Mansoa, Alberto Sánchez,
Elena Villalba, Ignacio Peinado

Editors:
Leocadio Rodríguez Mañas, Fabienne Abadie

2015



Report EUR 27265 EN

Joint Research Centre

European Commission
Joint Research Centre
Institute for Prospective Technological Studies

Contact information
Address: Edificio Expo. c/ Inca Garcilaso, 3. E-41092 Seville (Spain)
E-mail: jrc-ipts-secretariat@ec.europa.eu
Tel.: +34 954488318
Fax: +34 954488300

https://ec.europa.eu/jrc
https://ec.europa.eu/jrc/en/institutes/ipts

JRC95547

EUR 27265 EN

ISBN 978-92-79-48392-9 (PDF)

ISSN 1831-9424 (online)

doi:10.2791/542626

Luxembourg: Publications Office of the European Union, 2015

Abstract
The Veterans Health Administration (VHA) is an agency of the United States Department of Veterans' Affairs (this Department that has the 3rd largest budget among departments of the US administration). The medical assistance program implemented by the VHA is the largest integrated care system in the US (consisting of 150 medical centres and nearly 1,700 facilities comprising community-based outpatient clinics, community living centres, Veterans' Centres and domiciliary assistance). It provides comprehensive care to almost 9 million veterans every year.
The VHA is centrally administered and fully integrated; its services are funded and provided by the federal government. Therefore the VHA works both as a provider and payer, a rather unusual feature in the US health care structure. In fact, VHA is the only truly national health care system in the US, with hospitals or other facilities in every state and major metropolitan area of the country, as well as in Puerto Rico, the Virgin Islands, Guam, American Samoa and the Philippines. The VHA network is divided into 23 Veterans Integrated Service Networks, or VISNs, i.e. regional systems of care working together to better meet local health care needs and provide greater access to care.

Acknowledgments

The authors wish to thank Marta Peláez, Hermes Florez and Jennys Nunez for their support in organising the visit to Miami, their kindness and all the information they provided on the case. Besides, they wish to thanks the participants in the interviews for the fruitful discussions: Hermes Florez, Michael Mintzer, Enrique Aguilar and Mary Williams-Nash.

Preface

The Strategic Intelligence Monitor on Personal Health Systems (SIMPHS) research started in 2009 with the analysis of the market for Remote Patient Monitoring and Treatment (RMT) within Personal Health Systems (PHS). This approach was complemented in a second phase (SIMPHS2) with the analysis of the demand side, focusing on needs, demands and experiences with PHS by healthcare producing units (e.g. hospitals, primary care centres), healthcare professionals, healthcare authorities and patients amongst others.

Building on the lessons learnt from SIMPHS2 and on the European Innovation Partnership on Active and Healthy Ageing initiative, SIMPHS3 aims to explore the factors that lead to successful deployment of integrated care and independent living, and define best operational practices and guidelines for further deployment in Europe. This case study report is one of a series of case studies developed to achieve these objectives.

The outcomes of SIMPHS2 are presented in a series of public reports which discuss the role of governance, innovation and impact assessment in enabling integrated care deployment. In addition, through the qualitative analysis of twenty seven Telehealth, Telecare and Integrated Care projects implemented across twenty regions in eight European countries investigated in SIMPHS2, eight facilitators have been identified, based on Suter's ten key principles for successful health systems integration.

The eight main facilitators identified among these as necessary for successful deployment and adoption of telehealth, telecare and integrated care in European regions are:

- Reorganisation of services,
- Patient focus,
- Governance mechanisms,
- Interoperable information systems
- Policy commitment,
- Engaged professionals,
- National investments and funding programmes, and
- Incentives and financing.

These eight facilitators have guided the analysis of the cases studied in SIMPHS3 and a graph showing the relative importance of each facilitator is presented in each case study.

In addition to the above facilitators analysed in each case report, a specific section is dedicated to the analysis of care integration. It should be noted that the definition of vertical and horizontal integration used in this research is taken from the scientific literature in the field of integrated care[1] and differs from the one mentioned in the European Innovation Partnership on Active and Healthy Ageing Strategic Implementation Plan.[2] We define horizontal integration as the situation where similar organisations/units at the same level join together (e.g. two hospitals) and vertical integration as the combination of different organisations/units at different level (e.g. hospital, primary care and social care).

[1] Kodner, D. (2009). All together now A conceptual Exploration of Integrated Care.

[2] http://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/steering-group/operational_plan.pdf (page 27)

Table of contents

LIST OF FIGURES

List of Tables

Case outlook

The Veterans' Health Administration (VHA) is an agency of the United States Department of Veterans Affairs (of all the US administration departments, the VA has the 3rd largest budget). The medical assistance program implemented by the VHA is the largest integrated care system in the US (consisting of 150 medical centres and nearly 1,700 facilities comprising community-based outpatient clinics, community living centres, centres for veterans and domiciliary assistance). It provides comprehensive care to almost 9 million veterans every year.

The VHA is centrally administered and fully integrated: its services are both funded and provided by the federal government. Therefore the VHA is both a provider and payer - rather unusual in the US health care structure. In fact, the VHA is the only truly national health care system in the US, with hospitals or other facilities in every state and major metropolitan area of the country, and also in Puerto Rico, the Virgin Islands, Guam, American Samoa and the Philippines. The VHA network is divided into 23 Veterans Integrated Service Networks, or VISNs, i.e. regional systems of care working together to better meet local health care needs and provide greater access to care.

Older veterans represent a large group in the VHA. In order to serve people suffering from age-related diseases, the VHA care service is structured around patients and their living conditions. The VHA has also created 20 Geriatric Research, Education and Clinical Centres (GRECCs) in the 1970s to meet the requirements of ageing World War II veterans, and attract scientists and health science students to the field of geriatrics.

Since the 1990s, the VHA has undergone a comprehensive reform imposed by the US government. This has consisted of structural, organisational and operational changes (including the creation of the VISNs) which have had remarkable outcomes.

The VHA represents a unique integrated healthcare system, characterised by high patient involvement and satisfaction, which is reflected in the positive feedback received from veterans every year.

1 Background

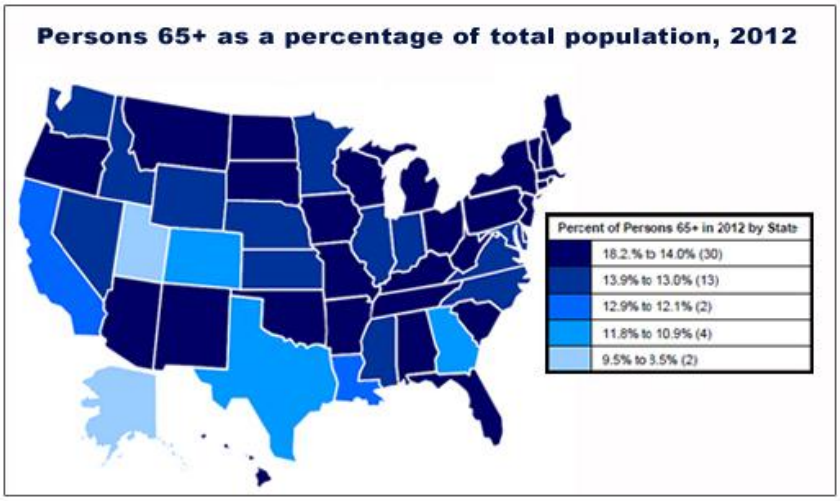
1.1 The United States of America and the State of Florida

The United States of America (USA) is a Federal Republic consisting of 50 states and a Federal District. With an area of 9.3 million km^2 and a population of 316.1 million people, the United States has been the world's largest economy since 1872. At the end of 2014 it was overtaken by China, which had an economy worth $17.6 trillion. This is slightly higher than the $17.4 trillion the International Monetary Fund (IMF) estimates for the US.

The US Gross Domestic Product grew by 2.3% in 2013 and 2.7% in 2014. Growth data are appreciably better than those of the 28 European countries. In the US, industrial production grew 4.9% during the last year (by December 2014) and the unemployment rate was 5.6% in January 2015.

Like other OECD countries, the US faces the challenge of an ageing population. There were 43.1 million Americans aged 65 or older in 2012, which represents 13.70% of the US population. By 2050, it is expected that there will be about 83.7 million older people, more than twice the number there were in 2000. The percentage of people aged 65 and older is expected to grow to 20% of the population by 2030 (Ortman, 2014). Figure 1 shows an overview of the percentage of people over 65 in all US states in 2012.

Figure 1: People aged 65 or older: Percentage of total population per state.



Source: US Census Bureau, population estimates.

The State of Florida is one of the 48 contiguous States in North America. It is located on the USA's south Atlantic shore, and is bordered by Georgia, Alabama and the Gulf of Mexico. Florida had more than 19.55 million inhabitants in 2013, and is the fourth most populated state in the country. Its 170.304 square kilometres make it the twenty-second largest state by area. The most populated urban area in Florida is Miami, which has over 5.3 million inhabitants. Florida's GDP per capita - $34,802 in 2014 - is below the US average of $42,784.

In 2012, the proportion of older people who were aged 65 or older in Florida - 18.2% (3.5 million) in Florida - was above the US average - 13.70% of the total population.

Florida has the second highest percentage of citizens without health insurance in the US. In 2013, the state Governor, Rick Scott, refused to allow Florida to participate in providing coverage for the uninsured under the Affordable Care Act (commonly known as Obamacare).

1.2 The US health system

The health care system of the United States is the world's most expensive in absolute terms and also in relation to its Gross Domestic Product (GDP). Health spending in the US is about $8,000 per person per year (OECD, 2013). This is more than double the average of other developed countries. However, this health expenditure does not result in universal coverage for citizens. In addition, the American population has one of the lowest life expectancies, the highest infant mortality rate, and a remarkable obesity rate (30.6% of Americans) compared to the other high-income countries in the OECD (Rice, 2013). Table 1 presents some general data about the USA's demographic statistics and health expenditure per inhabitant.

Table 1: General Data about the American Health Care System

Number of inhabitants	316,017,000
Life expectancy at birth, years	75.4 males – 80.4 females
GDP (2010), billion $	14,660
GDP per inhabitant (2010), $	42,722
Physicians/1.000 inhabitants (2010)	2.82
Nurses	9.21
National Budget for Health services management (2011), billion $	2,700
Health care budget, $ per inhabitant (2011)	8,680

Source: Rice, 2013.

Around half the American population (53.9 % - 169 million people) is covered by private insurance contracted through their employers. 11% (34.5 million people) directly purchase private medical services and 34.3% (107.6 million people) are covered by public healthcare programmes (Smith, 2014). There are three public healthcare programmes:

- **Medicare** is a federal programme that covers people aged 65 and older. Most of the older population in the US benefits from this service. It is administered by the government and based on a "single payer" scheme, which means that the government is the entity acting as an insurer. Medicare was approved in 1965 by the US Congress within the Social Security Federal Law. By September 2014, Medicare covered 49 million people (15.6% of total population). (Smith, 2014).
- **Medicaid** is a programme designed for low-income families. The programme, under federal law, covers pregnant women, children, elderly, and people with disabilities and parents who qualify under the standards of poverty in the country. It was also created after the approval of the Social Security Law in 1965. Federal support covers 50-80% of the total budget, while the state governments finance the rest. This percentage varies depending on the GDP per capita of each state. By

September, 2014 Medicaid covered 54.1 million people (17.3% of total population).(Smith, 2014)

- **Veterans Health Administration (VHA)** is a federally-administered integrated health care system (the largest in the US) that provides medical benefits to military veterans and their families. It is completely independent from the US Department of Defence Military Health System that covers active-duty US Army personnel.

In 2010, US President Barack Obama brought in the Patient Protection and Affordable Care Act (PPACA), also called Affordable Care Act (ACA) or "Obamacare" to improve the health care system for Americans. This legislation expanded access to healthcare services and also improved their quality, increased the number of insured people, regulated the insurance industry and reduced health expenditure. Over 15 million citizens who had not had health insurance before the ACA had enrolled in the programme by 2014, bringing the share of uninsured adults in the US from 18% to 13.4%.[3]

Around 45% of total health expenditure comes from public resources, while the remaining 55% comes from private plans (Rice, 2013). The 45% public financing is unevenly allocated. For instance, any veteran has access to more and better services than people under Medicare or Medicaid.

The main characteristics of the US system are its fragmentation, its low coverage and the overlap between different programmes, which make the system inefficient: for instance, some people can be beneficiaries of two programmes simultaneously and choose to use one or the other, or even both of them (e.g. Medicare and VHA).

It is worth mentioning that 13.4% of Americans (42.0 million) have no health insurance whatsoever (Smith, 2014). They therefore depend on charity programmes.

1.3 The Veterans Affairs Department and the Veterans Health Administration

The VA Department is a federal body created for the management and provision of US Army Veterans' benefits. Its roots can be traced back to 1636, when the Pilgrims of the Plymouth Colony passed a law for the support of soldiers who had been disabled in the war with the Pequot Indians. Today, the VA is one of the 15 Federal Departments which are the primary units of executive power in the US.

The VA receives strong backing and vast economic resources from the Government of the United States. The VA is divided into three administrations: National Cemetery Administration, Veterans Health Administration and Veterans Benefits Administration (Figure 4 shows the VA's main building blocks).

[3] http://www.gallup.com/poll/168821/uninsured-rate-drops.aspx

Figure 2: VA Administrations

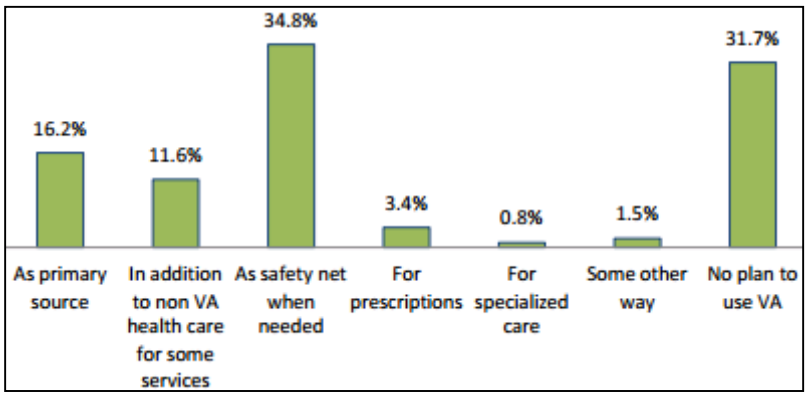
The VA had an annual budget of $132 billion in 2012 that was allocated as follows (Office of Public Affairs Media Relations, 2011):

- **Health Care**: $51 billion. Major health care provisions include $6.2 billion for mental health programmes, $509 million for research and $208 million for the implementation of new benefits for veterans' caregivers.
- **Benefits**: $70 billion for homelessness prevention, education and training, pensions, disability compensation, home loans or life insurance.
- **Information Technology**: $3.2 billion to run and maintain the IT system that allows the efficient delivery of healthcare and benefits.
- **Construction**: $590 million to make facilities modern, safe and secure for veterans and staff.
- **National Cemeteries**: $250 million.

The VHA administers veterans' health and social care delivery on behalf of the Department of Veterans Affairs. With a care budget of more than $50 billion, the Veterans Health Administration is the United States' largest integrated health care system. It dates backs to the early 19th century. The Naval Home in Philadelphia, built in 1827, was the first body to provide medical care for veterans. Since then, United States' leaders have expanded the care services to reach every veteran who served the nation. Successive governments have continuously empowered veterans' agencies and homogenised the package of services delivered. This process concluded with the declaration of Veterans Bureau as a Federal Body in 1930.

Veterans are entitled as beneficiaries to healthcare if they have been active in military service and have not been dishonourably discharged. About 9 million of the nation's 22 million veterans are enrolled in the VHA healthcare system. According to the VA's 2010 national survey of veterans, 16% of veterans use the system as their primary source of health care, while 35% use it as a safety net and 32% do not plan to use it (see Figure 3).

Figure 3: Reported Plan to Use VA Health Care in the Future



Source: Westat, 2010.

VHA provides medical and social services to veterans. The following specialised facilities provide specific services across the country:

- **171 Medical Centres,** which provide a wide range of services to veterans including traditional hospital-based services such as surgery, critical care, mental health, orthopaedics, pharmacy, radiology and physical therapy.
- **More than 800 Community-based Outpatient Clinics (CBOC)** across the country that make access to health care easier. The CBOC clinics provide the most common outpatient services, including health and wellness visits, without the inconvenience of visiting a larger medical centre.
- **135 Community Living Centres (CLC)**: The CLC are skilled nursing facilities, formerly called nursing homes, where VHA manages veterans with chronic stable conditions such as dementia, those requiring rehabilitation or those who need comfort and care at the end of their lives.
- **48 VHA Domiciliary** provide a variety of care to veterans who suffer from a wide range of medical, psychiatric, vocational, educational, or social problems and illnesses in a safe, secure homely environment.
- **278 Community-based Vet Centres** provide readjustment counselling and outreach services to all veterans and family members, and those dealing with military-related issues.

Since older veterans represent a large group, VHA set up 20 Geriatrics Research, Education and Clinical Centres (GRECCs) in the 1970s to meet the requirements of ageing World War II veterans, and attract scientists and health science students to the field of geriatrics. The final goal of GRECCs is to increase knowledge on ageing, transmit this knowledge to health care providers, and improve the quality of care delivered to older patients. GRECCs have educational, research and clinical units, which aim to create innovation models for the evaluation and management of different diseases and conditions related to acute and semi-acute chronic diseases. They also work and coordinate with clinical staff at VA Medical Centres, Community Living Centres (CLCs) and universities. GRECCs can sign affiliation agreements with Medical Schools, so they can train new medical staff and update human resources. This model definitely improves the coordination of services in hospital facilities and nursing homes. Moreover, GRECCs leaders have built up a national network for information and staff exchange. They cooperate and exchange experiences and ideas

in periodic regional and national meetings and teleconferences. They share their experiences of the barriers and problems they find in their respective contexts. This communication allows leaders to create new standards for Disease Management Process (DMP) and teaches professionals how to improve their performance and provide complete and excellent care. Problems in VHA are solved in a coordinated way. GREECs are the source of ideas for the integration of services and new models in the care of older patients.

Thus, VHA has implemented a care model for chronic patients, which is being tested in VHA Geriatric units and evaluated every week through internal meetings. Geriatricians work together with social workers who take the final decisions for each patient. The different services, besides regular hospital or inpatient care, are:

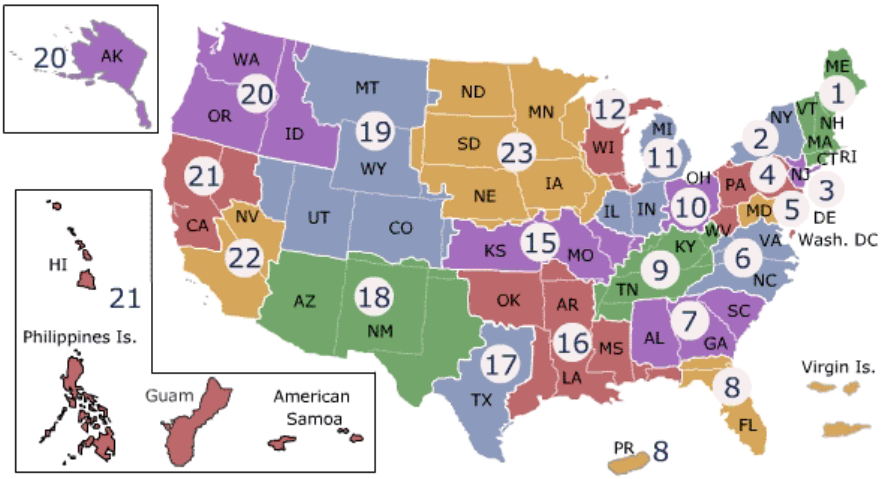
- **Community-based outpatient area:** Elderly veterans receive ambulatory services there, while they are still able to lead normal lives at home and they have enough social support from relatives and/or friends.
- **Home-based Primary Care:** This service is provided when the veteran cannot go to community-based ambulatory facilities due to loss of functionality. In these cases, veterans are cared for by external primary caregivers either at their own homes or at a VHA-owned home. Multidisciplinary teams visit patients to ensure that they are receiving good primary care and to check the correct execution of Disease Management Process (DMP). The aim is to reduce hospitalisations and the impact on patient's life. Moreover, VHA has appointed home nursing assistants, who are sent to help these patients and their caregivers in normal life activities: having a shower, getting dressed, cooking, etc. These assistants ensure the patients eat and take their medication correctly.
- **Community Living Centres (CLC):** Centres created for those veterans whose condition requires continuous care and the intervention of nurses, physiotherapists and doctors. Patients whose social environment is not adequate may also be offered the possibility of joining a CLC. CLCs manage two main cohorts of patients:
    - ***Long-stay patients:*** They live in the CLC until they die or until they are moved to another facility. They will need non-acute continuous treatment or social support until the end of their lives. 70% of veterans have the right to receive this service, as they are suffering a service-related disease or are destitute.
    - ***Short-stay patients:*** They do not suffer from service-related diseases, but need a short-term intervention. Care is provided by internists who have been trained in geriatric units in the procedures and conditions that ensure the best treatment.

Besides, VHA offers specific nursing services for veterans in CLCs:

- **Day-care:** patients spend the day at the centre and the night at home. In the CLC, they participate in different activities (music, rehabilitation, cognitive maintenance…). The aim is to ensure healthy habits, promote social interaction and implement good disease management processes.
- **Respite-care.** This is provided to relatives to allow them to have a rest. From time to time, the patient spends 6-8 hours in the nursing home, and receives health, social and recreation services.

Finally, the VHA network is divided into 23 Veterans Integrated Service Networks (VISNs). These regional systems of care work together to better meet local health care needs and provide access to care.

Figure 4: Veterans Integrated Service Networks across the country[4]



1.4 Transformation of the Veterans Healthcare System

The VHA has become a model for integrated health care since its transformation in 1995 by Kenneth W. Kizer, Undersecretary for Health in the US Department for Veterans Affairs, during Bill Clinton's term. During the 1980s and early 90s, the VHA was considered a bad option for health care. Despite the huge investment in VHA by the central government, the lack of innovative solutions, new healthcare models or technology implementation made VHA a second option behind private health plans, and was only used by low-income veterans. Care delivery was fragmented and uncoordinated, and the access to assistance was heterogeneous, due to the distance from hospitals of some veterans. In addition, the VHA was not clinically integrated and there were significant differences in waiting times between different operating theatres. Dr. Kizer designed the new VHA architecture, which aimed to make VHA a sustainable and efficient health care system. This reform affected all dimensions:

- Structurally the system was decentralised, and regional bodies (i.e. the VISNs) were created in order to meet local demand and to enable a proactive and fast response.
- Health care processes were reorganised around patients. Dr. Kizer suggested that VHA had to be as close as possible to the veteran, and that disease prevention and community wellness should be promoted. This new paradigm required investing in health information technologies (Kizer created the VHA electronic medical record) and communication standards.
- Disease management spread out from hospital facilities. The hospital was seen as an important but less central component. The reform reinforced the outpatient

[4] http://www.va.gov/directory/guide/division.asp?dnum=1

area and assistance at the patient's home, with a view to forming a larger, closer and more coordinated community-based network of care.

- VHA led a cultural change by providing social care as well as regular health care. The idea was to overcome disease-related barriers and make veterans feel supported and integrated in the community. Their diseases had to be tackled as a whole which required collaboration among different professionals.
- Excellence became the VHA's main objective. Professionals are now encouraged to engage the highest number of veterans, and obtain their confidence, so they choose VHA as their first and most valued health care plan.

VHA promoted the removal of disincentives for integrated care, rather than the provision of new financial incentives. In addition, a new capitation-based global payment that ensured the homogeneous provision of services was established, especially for those regions with high veteran populations.

2 Integrated care analysis

2.1 Dimensions of integration

Internally, VHA is completely integrated: organisational integration, professional integration and normative integration are ensured in the system through support services, high political commitment, and a clear shared mission, work values and culture. The centralised leadership of the VA, its role as sole healthcare provider and payer and its importance as a Federal body have facilitated the integration of all medical and social services. Moreover the huge resources allocated and the priority given by the American government to any veteran-related issues have made the application of this integrated care model possible.

The VHA is an example of full integration: communication, information pathways and collaboration are facilitated through coordinated, agreed and clear protocols. Although there is no specific new entity which aims to achieve integration, the VHA's holistic approach to healthcare and the strength of its system guarantee delivery and economic support for the entire continuum of care.

Although every VISN governs itself, they all follow the guidelines and recommendations of the central Department of VA, i.e. they aim to provide veterans with the best possible healthcare. As professionals from different areas face different contexts, VHA has built a communication network that allows them to interchange experiences and information on barriers and problems identified during their work. This enables VISNs to evaluate, compare and screen future needs. It also allows VHA to create new standards for professionals, and for the implementation of programmes and education. The final goal is to improve medical performance and provide complete and excellent care. Cooperation is achieved through different means, including monthly periodic meetings, teleconferences and newsletters.

Although some hospitals in the VHA system do not have all types of medical units, VISNs promote clinical and service integration to guarantee access by veterans to the medical treatment they need. As a single hospital may not have all the care units in its facilities, sometimes doctors refer patients to other centres in the area, where they are treated or diagnosed. For instance, the VA Sunshine Healthcare Network has created referral networks that ensure the closest, easiest and most appropriate new delocalised point of care. These networks ensure cost optimisation and reduce inconvenience for patients and the burden on caregivers or relatives. Medical teams in the second care centre have access to patients' Personal Health Record (PHR), so they have clear and complete information about each patient. After treating the patient, the physician at the second centre provides the professionals of the first centre with feedback about the visit, which is stored in the patient record. Cooperation networks among VISNs and communication standards for the transfer of patients are examples of horizontal integration of regional organisations.

At the Community Living Centre (CLC) level there is also integration among professionals. An interdisciplinary environment of physicians, nurses, social carers, dieticians, pharmacists, recreation therapists and physiotherapists requires the coordinated interplay of all actors. When patients start their stay in the CLC, all the professionals involved in their treatment evaluate their status. Later they keep track

of patients and regularly evaluate their progress. The VHA has made coordination possible by defining standards so everyone knows how to participate in the CLC health and social care activities. Moreover, these standards establish what to do whenever a sudden health event happens or a claim is received. The whole team meets and devises next steps and the strategy to follow. If no extraordinary meeting is necessary, multidisciplinary teams meet weekly and define new tasks and points to improve. This interplay is a clear example of local horizontal integration.

In addition, there are national meetings of the American Association of Geriatrics, which focuses on planning long-term strategies. This provides an opportunity for horizontal integration with other health maintenance organisations and private insurers, even though these work independently, do not share any information on patients and do not launch joint programmes.

Vertically, all VHA levels share the strong mission and goals disseminated by the central Veterans Affairs Department leaders in Washington. These principles and decisions then trickle down to the VISNs and later to the GRECCs, which eventually launch new initiatives and care models. This vertical integration makes it possible to respond specifically to the needs of every medical centre and area in the country, despite the overall vision of veteran's healthcare VA. Moreover, vertical integration works both ways, i.e. GRECCs must also identify the needs of medical centres under their remit and report these to VISNs, which in turn report to the VA Department. This vertical integration reinforces the overall vision for healthcare while successfully answering local specificities.

At operational level, nurses are the main actors of vertical integration. They are the link between inpatient services, outpatient visits, ambulatory care, and CLC-based and home-based care. Although different types of nurses work in VHA depending on the tier of care, all of them are connected to enable smooth transition from one care level to another. The fluid communication among nurses from different places is the key to ensuring integration and the care continuum. For instance, when patients leave hospital and go to the CLC, they receive not only a care service from the multidisciplinary team, but also direct communication, cooperation and support from VHA nurses. This way VHA handles better the disease management process and patients' safety. Besides, this process allows patients to return home as quickly as possible, as nurses can follow their evolution in a more comprehensive and reliable way. VHA aims to get patients back to their usual environment as quickly as possible. They do not only consider patients' comfort, but also costs reduction in terms of reduced number of hospital days.

To sum up, VHA has achieved high levels of integration internally from almost all points of view. Nevertheless, they have to deal with a particular feature of the American healthcare system: its fragmentation and the duplication of efforts. Veterans over 65 have access to Medicare, and use either service, depending on convenience. VHA, Medicare and private insurance companies do not communicate with each other at all. They do not share any kind of information even though the medical assistance they provide to a number of patients often overlaps. This is a clear example of lack of integration, which may hinder health care provision, especially when dealing with 'high users', who require continuous hospitalisation and medical intervention, or patients with a chronic condition.

2.2 Impact

The reform of the VHA system that started in 1994 had remarkable results, especially from an economic standpoint. During the period 1996-1998, the US Government Accountability Office (GAO) reported an annual reduction of $1 billion/year in operating costs, savings of $650 million in pharmaceutical costs, the reduction of 72% of administrative forms and a decrease in annual expenditure per patient of 25.1% (Kizer, 2012). In addition, the new model promoted community-based care and the implementation of virtual health and tele-health strategies that brought drastic structural changes. In the period 1996-1999, 55% of acute care hospital beds were closed, the hospital staff was reduced by 12%, the number of caregivers was increased, 52 medical centres were merged into 25 multi-modality facilities and 302 new community-based clinics were opened. Thus, VHA reported a decrease of 350,000 hospital admissions/year, a reduction by 68% of bed days and an increment by 54% of ambulatory care visits (Kizer, 2014).

In 2003, the results of a study which aimed to compare a number of quality of life indicators from 1994 (before the reform) to 2000 (Ashish K. Jha, 2003) were released. The study was based on a sample of 800 patients over 55 who had access to diagnostic services. All indicators improved for all dimensions (preventive care, outpatient care and inpatient care). Indeed the reform improved the continuum of care for veterans' diseases, reflected by the dramatic increase in the percentage of veterans whose chronic diseases or age-related conditions were routinely assessed (See Annex Table 5 for more details). A comparison between VA after the reform and Medicare also shows positive outcomes (see Annex, Table 6).

Every year, the Department of VA releases a Performance and Accountability Report (PAR) that presents specific results (including those for medical services) for the Fiscal Year against performance targets established in the previous report. In addition, every year the Department of VA releases a Performance Scorecard that comprises a summary of the most relevant results presented in the PAR. These include data about a set of medical service indicators, such as the Prevention Index V and the Clinical Practice Guidelines Index. Other healthcare provision indices are also released, such as the percentage of new primary care appointments completed within 14 days of the appointment creation date or the percentage of established primary care appointments completed within 14 days of the desired date.

Table 2 presents the evolution of some of the most meaningful medical data from 2009 to 2013, comparing these with the expected results. Some clinical outcomes are also monitored in VHA medical centres in order to assess the quality of the treatment. All this information is collected for all the patients treated at the nursing homes and compared at VHA and national level. The goal is to improve the mean values. Most of indicators analysed show a positive trend and a significant improvement.

Table 2: Medical service indicators. Performance Scorecard Highlights.

Organisation /Program/Measure	2009	2010	2011	2012	2013		Strategic Targets
					Results	Targets	
Medical Services							
Prevention Index V[5]	89%	91%	92%	94%	93%	93%	95%
Clinical Practice Guidelines Index IV[6]	91%	92%	91%	94%	93%	92%	94%
Percentage of established primary care appointments completed within 24 days of the desired day	N/M	N/M	N/M	N/M	93%	Establishing baseline	TBD
Percentage of established specialty care appointments completed within 24 days of the desired day for the appointment	N/M	N/M	N/M	N/M	93%	Establishing baseline	TBD

Source: (Veterans Affairs Department, 2013).

As regards how patients perceive quality of care, the 2013 Performance Scorecard shows that the percentage of patients who rated VA Health Care as 9 or 10 on a scale from 0 to 10 in 2013 was 65% (inpatient) and 54% (outpatient). VHA achieves high scores, not only in internal surveys, but also in independent analysis. For instance, the level of patients' satisfaction with the system is very high: the score given by inpatients recently discharged from a VA acute medical centre was 84 on a 0-100 scale (4 points higher than industry average), while the score given by VA outpatients was 82, which is within one point of the industry average. Customer service is the VA's greatest strength and scores 91. Medical providers and appointment personnel continue to be highly courteous, scoring 92 and 91 respectively. Medical providers score 90. (American Customer Satisfaction Index, 2014)

Finally, VHA has also measured the impact of the use of HIT services and applications. Table 3 presents the outcomes of the use of tele-health services, in 2012.

[5] This measure is an indicator of how well VA promotes healthy lifestyle changes such as immunizations, hyperlipidaemia, smoking cessation, and early screening for cancer. A higher score means that VA-treated Veterans are receiving prevention care and are taking the necessary steps to develop or maintain healthy lifestyles.

[6] This measure is an indicator of how well VA performs regarding early identification and treatment of potentially disabling or deadly diseases such as acute myocardial infarction, inpatient congestive heart failure, hypertension, diabetes, and pneumonia. The index focuses primarily on the care provided to inpatients and is used to assess the quality of health care being delivered to its patients in accordance with industry standards.

Table 3: VHA Tele-health Services: Outcomes

VHA Tele-health Services: Outcomes
Reductions in Utilization (2012)
Home Tele-health - reduces bed days of care — 59%
Home Tele-health — reduces hospital admissions —35%
Clinical Video Tele-health — reduces bed days of care 38% for mental
Patient Satisfaction
Home Tele-health - 84% mean score
Store-and-Forward Tele-health —95% mean score
Clinical Video Tele-health - 94% mean score
Travel Reduction Savings
Clinical Video Tele-health — $34.45 per consultation
Store and Forward Tele-health - $38.81 per consultation
Home Tele-health Savings
$1,999 per annum per patient

Source: Darkins 2013.

2.3 Drivers and barriers

The government's commitment to the Veterans Administration is one of the key drivers of success. Of all the US departments, the VA has one of the highest budgets. In addition, the VHA budget has increased year on year, and the political commitment to improving the performance of the system, especially since the Clinton administration, has resulted in improved operating and evaluation procedures, and in turn better outcomes.

Another important driver is the good communication and coordination between professionals and the rest of the stakeholders. The shared culture enables and facilitates better treatment and joint decision-taking, and allows all participants to pursue the same goals.

A joint commission internally assesses the professionals' activity. This assessment used to be carried out by an external company. Today, the service is assessed through surveys answered by the patients or their relatives. In addition, when a patient passes away, a questionnaire is sent to the family, so they can comment and provide their views on the service. Some clinical outcomes - such as weight loss, falls, memory loss, ADLs loss, pharmaceutical markers, etc. - are also monitored to assess the efficacy of the treatment. All this information is collected for all the patients treated at nursing homes and compared at VHA and national levels. This continuous self-evaluation promotes internal competition among centres and VISNs for the best mean values which results in improved care.

In the last 5 years, the VHA's efforts to put the patient at the centre of the care process have been intensified in an initiative which has focused on "Patient centeredness" or the "Patient Aligned Care Team". This initiative includes, for example,

the Geriatric Patient Aligned Care Teams (Geri-PACTs), which treat patients whose functionality is limited. In the case of older but functional patients, regular standards are used and multidisciplinary teams operate with the advice of a geriatrician. This has implied a cultural change. Personal Health Records have enabled this Geri-PACTs philosophy.

Another important facilitator for the integration of care is the existence of an Electronic Medical Record where every evaluation, piece of information or notes about the patient are stored. So far, VistA – VA's EHR – is not integrated with Medicare. However, one of the short-term goals of the VA is to foster interoperability with other Health Information Systems, such as the Department of Defence (DoD) Health Information System.

Patients have also access to their medical information via tools such as My HealtheVet, which allow them to participate in care, collect data and share them with doctors. Some telemedicine systems allow them to monitor their vital parameters. If certain thresholds are passed, these systems can raise the alert. Only patients at high risk of hospitalisation or rehospitalisation have access to this telemedicine service.

As mentioned above, the system promotes the use of ICT tools, and new initiatives in this field are launched continuously. This approach facilitates consultation, diagnosis and better treatment, enhances collaboration and cooperation among health staff, and helps to improve the efficiency of the system.

The major barriers that VHA has faced since the reengineering in 1994 are related to the resistance to change. Although many of these changes have been operated successfully, VHA still has to modify rules, principles, organisation and processes.

For instance, some VA policies and procedures have not been modified quickly enough, and some barriers remain. For instance, the funding model still lacks an entrepreneurial dimension which could help stimulate more efficient management. For example, the rules for funding allocation (currently established centrally by VA) may constitute a barrier. If a centre spent less than the amount budgeted, thus saving money, this centre must give the unspent funds back. It cannot use the saved budget to run other projects or implement other initiatives. Besides, this implies that the following year that centre will probably see its budget reduced, as it appears to have received more money than needed. This funding system creates disincentives, reduces managers' room for manoeuvre, and does not help to promote greater efficiency.

In some VISNs some infrastructures need to be updated, as some buildings are obsolete and space for optimal patient treatment is lacking. In these cases, internal changes to adapt to circumstances have been made. Some remodelling has been undertaken, but in some cases this implies the reallocation of patients, extra work-load for professionals, and delaying administrative procedures. Another operational barrier is the decreasing number of professionals. Some professionals have reported that, probably due to the general economic framework, fewer professionals start working for VHA system every year, while the rate of retirement remains constant. Thus, the reduction of staff could lead to an increase in the number of patients per professional, which would affect the quality of care. A solution could be to promote initiatives in the recruitment of professionals, such as cooperation with other

institutions (e.g. medical or nursing academies) to share and coordinate the recruitment of new professionals and reduce the costs associated with this process. For instance, in the VA Sunshine Healthcare Network a large-scale project was run recently with the International University of Florida to train nurses. In addition, new professionals from the University of Miami were recruited for the palliative care unit in Miami.

Even though the accountability of system procedures and outcomes has significantly improved in recent years, the scandal of falsified waiting time records has revealed that there is room for improvement in this regard. During 2014, VA found that 3 Veterans Health Administration facilities were manipulating the data on the tracking of patient waiting time for appointments, falsifying records to cover up delays. As a result of this manipulation, the VA initiated a nationwide audit of scheduling practices which identified "*1) significant lack of clarity regarding scheduling policies and practices across the system; 2) an inflexible and unrealistic 14-day standard for appointment times; 3) inadequate staffing of providers and clerical support at many of the sites that were experiencing the greatest surge in patient demand; and 4) rigid and obsolete scheduling software*" (Veterans Affairs Department, 2014). As a consequence of this audit, the accountability procedures will be revised, four VA senior executives have been dismissed and the congress has passed a law making it easier for veterans who experience delays to get care outside VA's nationwide network of hospitals and clinics.

Another barrier is the fact that the provision of care by the VHA is not integrated with its affiliates (Universities). Although managers of centres are trying all kinds of models, there are so many regulations about how health care is provided, that it is very difficult to put into practice initiatives which aim to achieve integration beyond the VHA. This hinders collaboration between VHA centres and other institutions with which they have partnership agreements, as is the case in Miami with the Florida International University and the University of Miami. Most of these restrictions are linked to the VA and should be alleviated to allow integration to go beyond the VHA system.

Some years ago, all veterans benefitted from full health care coverage from the VA. This was not sustainable and some of the benefits have been restricted. Some veterans perceived that they would be better served if they joined a private health plan and left the system. Although the system was largely improved following Kizer's reforms, some elements of this perception may still remain.

Other barriers also need to be addressed - for example, geographic disadvantage. Some veterans live in rural areas which limits their access to health care. However, in most cases the system overcomes these barriers by providing ambulatory clinic services. In other cases, telemedicine is used for fast consultation. The VA is implementing a new initiative to ensure better care for those veterans under the *Veterans Access, Choice, and Accountability Act* of 2014 (VACAA). This Act rules that where distance from a VA facility exceeds 40 miles, or scheduling is delayed beyond 30 days, the VA has the authority and resources to seek care from non-VA community-based providers.

2.4 Health professional and patients

Almost 300,000 people work for the VHA in more than 1,700 sites. The VHA is also one of the largest graduate medical education providers in the country, and a major contributor to medical research.

The VHA cooperates with medical schools through agreements between the GRECCs and their affiliated Universities. In addition, VHA professionals are continuously trained to improve their performance. The Kizer reform aimed to achieve excellence in education and research. It established guiding principles to guarantee the compliance of educational programs with the demands of clinical care. The VA's educational offer aims to focus on areas of greatest need to veterans. Therefore the number and type of healthcare professionals trained by the VA is determined by requirements of the VHA system. Finally, the number of postgraduate physicians on VA educational programs increased in the period 1993-1997 from 2,892 to 3,519.

VHA professionals are committed to the philosophy, values and mission of VHA. The system values ("ICARE", which means "Integrity, Commitment, Advocacy, Respect, and Excellence") define this culture and provides a baseline for the standards of behaviour expected of all VA employees, reminding them and others that "I CARE":

VHA professionals work within an interdisciplinary care team structure. Physicians and nurses cooperate with professionals from other fields. For instance, in many cases the social worker retrieves the information about the patient's health, social and economic status and medical recommendations and defines which programme the patient should join.

VHA has established a system of patient profiles. This system is based on patient's clinical, social and functional status. Social workers evaluate and decide where to allocate them into the system. This is important as it allows professionals to focus on a particular patient profile, and enables a personalized health and social support service that complies with their real needs. Nurses also play an important role in this recruitment and allocation process. They check the patients' background and detect factors which may hinder their integration into the service (e.g. alcoholism, drug addiction, criminal record, socioeconomic and psychological status...). If a patient is identified as a potential source of conflict or problems, the process of selection and recruitment follows different paths. This way, VHA guarantees the best allocation of resources and professionals, and veterans' safety.

The comprehensive care that VHA aims to provide includes hospital and non-hospital services. Community Living Centers are nursing homes which serve chronic patients who need a non-acute continuum of care or those who need a short-term intervention. In these centers, a multidisciplinary team cooperates to provide the best care. Geriatricians keep continuous track of patient status; emergency physicians react to adverse events; nurses provide continuous support to physicians; psychologists and psychiatrists evaluate, diagnose and treat patients with mental and emotional problems; physiotherapists, pharmacists and nutritionists look after patients' functional status, etc. This multidisciplinary care model requires the clear establishment of tasks and steps in the disease management process. The VHA has done this, creating standards and educating its professionals. These standards are not, however, publicly available.

The VHA measures veterans' levels of overall satisfaction, as a key indicator of the quality of its performance and whether it meets their expectations in both inpatient and outpatient care units. Every year, the VHA publishes the Hospital Report Card, a comprehensive report of quality and safety data for each facility. Hospital Report Cards in the VHA began in 2008, and the most recent issue (which presents the results for Fiscal Year 2012) was released in December 2013.

Last but not least, the total veteran population in 2014 was 21.61 million, and the veterans enrolled, 9.11 million. The total veteran population decreased by 17% from 2001 to 2014. However, the VA-enrolled veteran population increased by 78% from 2001 to 2014 (Bagalman, 2014). This may be an indicator of the change in veterans' perceptions of the VHA system, which has led them to use the service more.

2.5 Information and Communication Technologies

The VA has adopted the use of Information and Communication Technologies (ICT) to support healthcare provision. Back in 1982, the VA legitimated the work of a group of programmers and clinicians who had been working behind the scenes to create a mainframe-based system that would eventually become the Decentralized Hospital Computer Program (DHCP). In 1996, the name was changed to Veterans Information system technology Architecture (VistA).

VistA is the VA's Health Information System that supports and manages every aspect of the healthcare provided to US veterans. VistA comprises over 150 tightly-integrated applications, including a Computerized Patient Record System (CPRS), an imaging application (VistA imaging), the Bar Code Medication Administration and the Personal Health Record – My HealtheVet, among others. The CPRS is a fully integrated Electronic Health Record that provides physicians with a single interface to review and update the patient's medical information. VistA Imaging manages multimedia from medical specialties such as radiology, cardiology and pathology that are available to the physician via a secure desktop. My HealtheVet is a secure, web-based personal health record linked with VistA CPRS that allows veterans to refill their prescriptions and keep track of health readings, among other functionalities.

The VA's IT Strategic Plan, currently under development, will establish the IT strategic framework for guiding IT organisational transformation, strategic planning, and courses of action from 2014 to 2020. The goals and strategies to be described in the Plan will reflect the critical IT priorities of the Assistant Secretary for Information and Technology and the Department. They will be aligned with and driven by the Department's major initiatives and strategic objectives as defined in the Strategic Plan. The Strategic Plan will be available online after review and approval. Moreover, the VA has embarked on an initiative named VistA evolution, which will create a new generation of their EHR that will be known as VistA4. Other future directions include home tele-health technologies, innovative partnerships, the Nationwide Health Information Network or the Virtual Lifetime Electronic Record.

In addition, the VA's tele-health programmes continue to expand and are a priority in the Department's commitment to increasing access to care for Veterans, especially in rural and remote locations. The VA's "Connected Health" initiative embraces virtual care modalities that include MyHealth*e*Vet, Secure Messaging, Mobile Health Tele-health and Patient Kiosks. VA-specific tele-health applications comprise clinical video

tele-health (CVT), home tele-health (HT) and store and forward tele-health (SFT). CVT refers to the use of real-time interactive video conferencing to assess, treat and provide care to a patient remotely. HT provides coordinated care by the use of health informatics, disease management and technologies such as in-home and mobile monitoring, messaging and/or video technologies. Finally, SFT refers to the use of technologies to acquire and store clinical information (e.g. data, image, sound and video) that is then forwarded to or retrieved by a provider at another location for clinical evaluation. As of June 30, 2014, 10.07% of Veterans (570,336 unique Veterans) received tele-health-based care. For instance, 1,551,832 tele-health visits for Home Tele-health (HT), Clinical Video Tele-health (CVT), and Store and Forward Tele-health (SFT) took place at national level during the same period (VA, 2014).

In 2013, the VA enlarged by 20% its HT services in support of non-institutional care, chronic care management, acute care management, and health promotion/disease prevention services, which were delivered to 143,281 veterans with medical and mental health conditions. These services enabled veterans to live independently in their own homes and local communities. In 2013, the VA saw a 24% expansion in the number of veteran patients receiving mental health care via tele-health services (Veterans Affairs Department, 2013). This reduced the need for both patients and clinicians to travel, with travel-associated cost savings of $34.45 per consultation. The VA's tele-health services continue to expand in size and scope and now include new services such as TeleDermatology, TelePathology, TeleAudiology, Tele-Intensive Care, and Women's tele-health services. In addition, clinical consultations are carried by VA providers with 2,077 veterans in their own homes via video tele-health connections. The VA also completed 8,948 TeleAudiology encounters in 2013 (80% more than in 2012).

VA Mobile Health allows the transformation of the disease management process and improves communication between veterans and their care teams. The Veterans Affairs Department has launched a number of mHealth applications in order to give veterans easier and quicker access to important information. VA Mobile Health releases new apps for veterans regularly through the VA App store, which offers apps across several platforms, including iOS, Android, Windows Mobile and BlackBerry.

2.6 Governance and policy setting

During its recent history, the VHA has experienced some organisational changes and reforms of its structure and processes that have significantly improved the system. This reorganisation of the VHA's principles, structures and processes has been crucial in turning the system into the largest integrated health care organisation in the US that successfully delivers integrated health care.

In 1993, under the Clinton Administration, there was an attempt to reform healthcare which did not succeed. The analysis carried out prior to this attempt, however, revealed a high demand for primary care throughout the VA system. One year later, in 1994, President Clinton appointed Dr. Kenneth W. Kizer as Director of the VHA to update and modernise the VA health system and that same year the VA Primary Care Directive was approved. This required all VA facilities to offer primary care services within two years. In 1995, the VHA initiated the most far-reaching transformation of the veterans' healthcare system since the system was formally established. In

October 1995, the VHA restructured its operations both in the field and at headquarters, taking a major step towards a new vision for the system.

Dr. Kizer implemented the Integrated Change Strategy to achieve five strategic goals: (1) increase accountability, (2) integrate and coordinate care, (3) improve quality, making a superior level standard, (4) modernise information management, and (5) align finances with desired outcomes. Above all, the reform was based on one basic principle: the patient should be at the centre of the overall healthcare process (Kizer, 2012).

The reform included several actions involving care delivery, financial aspects and management issues. First, the implementation of universal primary care reduced the importance of hospitals as reference points for care. The VHA promoted the construction of ambulatory clinics, to enable the transfer of services to smaller facilities closer to the patient. The reform also put more emphasis on population health management, health promotion and disease deterrence. In addition, it created a system-wide EHR and other HIT as virtual health/ tele-health strategies.

VHA established a new performance management system that included system-wide standardised performance measurement and performance contracts to clarify task division and the role of each board, tier of care and professional. Moreover, a self-assessment process was defined.

A capitation-based global payment method was designed (VERA, Veterans Equity Resources Allocation), to ensure the efficient allocation of resources, taking into account that veteran population density is highly heterogeneous. Before the reform, funds were distributed between centres on the basis of historical costs, which was not efficient. As a solution, it was decided that funds for each VISN should be distributed according to the number of veterans treated in each network.

Care delivery infrastructures, and headquarters were also restructured, aiming at less hospital and greater ambulatory and virtual care capacity. The VHA reorganised its offices and their functions, creating new offices (i.e. Policy, Planning and Performance, Chief Information Officer, Employee Education).

Another major change was the creation of Veterans Integrated Service Networks (VISN) which are the territorial organisations of the VHA. After their creation in 1995, they became the focus for the decentralisation of the budgetary, planning, and decision-making functions in an effort to promote accountability and improve the day-to-day management of facility operations. The number of VISNs has changed over the years. Prior to 1995, the VHA was loosely structured into 4 regions, and individual VA medical centres reported directly to the VHA for budgeting and programme management purposes. After the reengineering process that started in 1994, the Veterans Health Administration was restructured and the decision-making process on how to provide care and integrate the facilities was decentralised to the VISNs. The VISNs became the basic budgetary and planning units of the veterans' healthcare system.

In addition, every year the Federal Administration receives reports and additional funding demands from all the Hospitals and Centres in every VISN. After analysing how innovative these demands are, the possible outcomes and patient needs, the Department of VA defines a list of initiatives according to priorities and allocates funds to launch them. This bidirectional communication path between the Federal

level and each centre -channelled through the commitment of the directors of each VISN- makes it possible to review each centre's specific improvement needs and to modify those programmes that are not working properly, and provides the means to implement the measures requested.

2.7 Organisation and processes

The VHA is the only organisation involved. Although it ultimately depends on the United States Government, the VHA works as a self-governing body that acts both as provider and payer. VHA top managers can make their own decisions without the intervention of the Federal Government. Nevertheless, they must comply with the law, which is set and monitored by the Congress.

The VHA is led by the Under Secretary of Veterans Affairs for Health, and is elected every four years. He or she is the main coordinator of the different administrative bodies and offices in the VHA. These offices were specifically created to manage important fields in veterans' health assistance and the correct operation of a huge healthcare system. Office chiefs, designated by the Under Secretary are responsible for the organisation and good functioning of each board. Also, the VHA organisation chart is modified every 4 years.

There are two kinds of offices in VHA. First, administrative offices deal with resource allocation, facilities management, organisational processes and administrative issues. Table 4 presents some of the most relevant administrative and business offices of the VHA:

Table 4: VHA Main administrative and business offices.

VHA Main administrative and business offices	
Office of Academic Affiliations,	Non-VA Care
Chief Business Office	Patient Advocate
Office of Emergency Management,	Office of Policy & Planning,
Health Administration Center	Office of Procurement and Logistics
Health Benefits / Health Eligibility Center	Office of Research Oversight
Health Resource Center	Returning Service Members
Informatics / eHealth unit	Voluntary Service
National Center for Organizational Development, (NCOD)	

Source: VHA

In addition, VHA has a number of clinical organisations. Their aim is to improve and guarantee excellence in all medical specialties.

One of the basic strategies of Kizer's reform was the transition from a hospital bed-based care model to a more local, closer and ambulatory approach. VHA addressed this organisational process by the creation of Community Living Centers and Outpatient Clinics and the closure of 8.7% of total hospital beds in FY 1995. Under this new system, outpatient visits increased by 2.44 million or 9.2%. The VHA encouraged each VISN to establish or review criteria for hospital admission, utilization and length of stay and to create pre-admission screening and discharge plan

standards to prevent patients from suddenly getting worse and to avoid hospitalisation and rehospitalisation.

All these organisational changes set outpatient primary care as the central focus of patient treatment, and aimed to find more cost-effective care procedures. Initiatives were launched, such as residential support for those extended-care patients who are undergoing evaluation or diagnosing processes and do not need acute hospital care; the expansion of non-institutionalized long-term care when clinically appropriate; an increase in ambulatory surgical procedures and the provision of primary care by VHA's caregiver workforce; the implementation of a telemedicine strategic plan to attend to patients remotely, etc.

As a consequence of this transition, the proportion of professionals working in the hospitals and primary care changed. Training programs were launched to educate professionals in primary care practices and new standards and guidelines defined the new Disease Management Processes and patient pathways within the system. The laws governing eligibility for care in the VHA were reviewed to ensure the allocation of patients to the most cost-efficient facility, depending on their profile and condition.

The transition also required the recruitment of management personnel with the skills or expertise needed to operationalize the vision of the new VHA. Finally, the VHA restructured some positions in its organisational chart to ensure the correct operation of the new approach. The VHA reduced its staff in headquarters by 25% to promote efficiency, and created new jobs to support the initiative: Chief Information Officer, Chief for Policy, Planning and Performance, Employee Education Officer. Moreover the VHA empowered the Chief Network Officer, who became part of the integrated Office of the Undersecretary for Health (Kizer, 1996).

In addition, the VHA was divided into 23 VISNs. The typical VISN assets are: 7-10 hospitals; 25-30 clinics; 5-7 long-term care facilities; 10-15 counselling centres and 1-2 residential care facilities (Kizer, 2012). Each VISN is managed by a 'Network Director', who oversees and is responsible for the delivery of healthcare to veterans in his area of influence. The network director must also designate 'Chiefs' and 'Officers' for different issues. These positions are not the same in all VISNs. Network Directors have the freedom to manage executive leadership as needed, to create new chief positions and to remodel the governance system. Nevertheless, many VISNs share similar models and have Chief Medical Officers, Chief Financial Officers, Chief Management Officers, etc.

2.8 Reimbursement model and economic flow

VHA is a single-payer healthcare system administered by the government through the department of Veterans Affairs (VA). The healthcare provided is financed by a single public body from a single fund controlled by an agency, organised and overseen by the government. The physicians, nurses, administrators and other health professionals are all employees of the federal government, which also owns the hospitals and other facilities. As an exception to this single-payer approach, the VHA may outsource a minor part of the services, such as the primary care providers in areas without a nearby VHA facility.

The funds allocated by the VA to each VISN are calculated according to a complex capitation criteria. This system, called VERA (Veterans Equitable Resource Allocation)

has been in place since 1997 to adjust to changes in the geographical distribution of veterans, in order to achieve fairer resource provision. Resources are not allocated according to the number of patients in a geographical area, but according to the workload in each VISN. This workload is determined by the type of patient: complex patients, vested (non-complex high users) patients and non-vested patients (occasional outpatient users). The VA establishes a national budget item for each kind of patient and divides it among the number of patients in each VISN and for each type of patient. This system guarantees the fairest allocation according to the condition of the patients treated, rather than the size of the target population. This is crucial as each group of patients demands very different investments. For instance in FY 2001, the cost allocated to basic non-vested care patients was $121 per patient, while for basic-vested patients and complex patients it was $3,126 and $42,765 per patient respectively.

VERA has two major components: General Purpose Funds (90% of total), which include basic and complex care, research and education support, and equipment; and Specific Purpose Funds (10% of total), which include the provision of prosthetic devices, quality improvement initiatives and database development. Part of the Specific Purpose Funds is kept to cover contingencies that may arise during the year (Wasserman, 2001).

Since it is an integrated health system, VHA can choose the most accurate combination of care among physicians, pharmacists, hospitals and health centres etc. which results in higher cost-effectiveness. In addition, as the relationship that VHA establishes with patients is usually very long-term, almost lifelong, the VHA puts a special emphasis on preventive care and invests more in this kind of programme. Moreover, another benefit of the single-payer scheme is purchasing power which results in lower costs for VHA acquisitions. The VA can negotiate programme-wide prices directly with drug manufacturers, resulting in lower drug prices. Similarly, the VHA can purchase equipment at lower prices based on changing health needs. VHA purchasing power is based on the large volume involved and on the fact that purchases are carried out through a *National Acquisition Centre* (NAC), hence achieving economies of scale. On the other hand, there are cases where a centre needs specific devices to address specific medical issues which have not been purchased by the NAC. As a result, the centralised purchasing process may limit the capacity of professionals to decide how to treat their patients. However, in general terms; this purchasing power is positively appraised by professionals.

As a result of the above, average per-capita expenditures within the VHA are significantly lower than the national average (Book, 2014). However, this should not be taken at face value as the VHA's user profiles are different from Medicare's user profiles (generally older in Medicare), and patients covered by the VHA normally do not make full use of VHA services, as Veterans usually use VHA coverage with some other types of insurance, like Medicare, Medicaid or a private health plan, mostly depending on convenience (i.e. patients use the medical centres closest to their homes).

In terms of incentives, the salary paid to VHA doctors contains a performance-based component related to the fulfilment of specific goals and performance objectives assigned to them.

VHA physicians' salaries are made up of base pay and incentives, as summarised below:

- Base Pay is determined under the Physician Base and Longevity Pay Schedule, and the total number of years of service in VHA.
- Market Pay consists of pay intended to reflect the recruitment and retention needs for the specialty or assignment of a particular physician or dentist in an applicable VA facility.
- Performance Pay is based on each physician's achievement of specific goals and performance objectives prescribed to him or her.
- Premium Pay is additional pay due for work during the evening or at night, at weekends, or when the physician is on holiday; overtime and compensatory time; and for scheduled availability for work as needed.

Special rates for some professional and technical health care positions are used at many VA locations to ensure competitive salaries. VA also uses incentives to retain selected employees who are likely to leave Federal service for higher salaries. Typically, such employees possess unusually high or unique qualifications, meet special VA needs, or hold hard-to-fill positions. For FY 2010, VA paid nearly $111 million in retention incentives to 16,487 employees (VA Office of General Inspector. Office of Audits and Evaluation, 2011).

3 Transferability

The VHA model could be exported more easily to countries or regions with "single-payer" health systems. In the European context, it would be closer to systems inspired by the Beveridge model, which are financed by the Government through taxes collected from the entire population. These systems aim to provide universal health care through a wide network of their own health centres, and do not usually require co-payment for health services. Thus, the VA system could be more easily implemented in countries like the United Kingdom, Spain, Portugal, Italy, Sweden, Finland or Denmark.

However, the remarkable peculiarities of the US health care system and the specific features of the VA system, make it hard to envision the system as a whole being transferred. Nevertheless, VHA contains several elements that could be implemented in other European regions and countries. Some of the most relevant ones are listed below:

- Patient-centred focus: This means making the patient as the focus and involving patients and their relatives actively in the design of new care models. Thus the integration of all services and professionals to ensure a continuum of high quality, patient-centred care is promoted. Moreover, the patient is not only considered as an individual, but also in connection with the community and his or her relatives.
- The intensive use of health information technologies, such as tele-health programmes, the implementation of an electronic health record and the regular issue of new mobile applications, enable a more efficient use of resources and a more detailed patient monitoring.
- The high level of coordination between regional bodies (VISNs in this case), between different centres and settings, between physicians, nurses, pharmacists, psychologists and social workers, between primary and specialty care, between inpatient, outpatient and in-home care.
- Regular communication between centres and between professionals. Frequent meetings or teleconferences between professionals from different centres and different VISNs.
- The accountability, the assessment of outcomes and the regular review and evaluation of programmes. This allows managers to clearly identify both the successful aspects and the areas for improvement, in order to establish priorities for future action.
- Incentive policies, such as payments for professionals linked to performance, and flexible budget allocation schemes, in which the funding allocations for the centres are linked to the number of patients treated at each of them.
- The GRECCs, as centres of excellence for clinical geriatric research and education, are examples of infrastructure models that might be exported to other systems.

4 Conclusions

The Veterans Health Administration is the biggest integrated care system in the US and one of the largest in the world. The system covers nearly 9 million veterans across the United States.

VHA provides care at its medical centres, but also in the community through its Community Nursing Programme, at homes and residences. The transfer of patients between different tiers of care is very well addressed. Home care, home-based primary care and tele-health services allow physicians to assess the patient's health status outside the hospital and to reduce rehospitalisation through early detection. There is a high level of communication and cooperation among the different services and tiers of care that promotes better handling of the Disease Management Process (DMP) and patient wellness.

Highly coordinated interdisciplinary teams ensure the care continuum. These teams include doctors, nurses, social workers, psychologists, physiotherapists and pharmacists. This high level of coordination and integration enables better monitoring of the patient, resulting in the reduction of hospital stays. This not only benefits the patient, but also reduces costs, since outpatient therapy is cheaper than hospital care. High levels of commitment and pursuit of excellence are reinforced by the internal working procedures which include calls between professionals from different schools and different VISNs to discuss and share views on different aspects of care. The GRECCs hold monthly meetings with geriatricians from other VISNs. This way, professionals learn from each other. This level of integration allows professionals to spread information to lower levels of the system. This high degree of communication, in which the procedures and programmes are continuously evaluated, is another element that explains the success of the system.

Until the 90s, VHA was far from being an example of a successful health system. In fact, it was perceived as a low quality health provider. The performance of VHA was not satisfactory, with huge waiting lists and –in general terms- low quality care. This situation changed radically in the 90s, under President Clinton's administration, when the system underwent a radical reform in which new processes and schemes were adopted, increasing efficiency and improving quality of care. The system's structure, processes, and accountability were significantly improved.

Nevertheless, the VHA scheme and the health system in general remain very controversial in the US. This is a highly politicised issue in which two main opposing philosophies (alongside many other views) hold radically different views on this system: the State as sole provider of health services versus the provision of health coverage under market mechanisms. This debate has not provided unequivocal evidence that the cost per patient in VHA is higher or lower than in other healthcare systems in the US, as it has for other examples of integrated care.

As noted earlier, this difficulty is not only related to the obvious bias of many of the studies on this topic, but also to the fact that VHA overlaps with other health systems, such as Medicare. For this reason, it is difficult to determine the exact extent of coverage that this system provides, since users often use both systems interchangeably.

A key element of the success of the veterans' health system is the high commitment of the Administration, which is also reflected in the sharp increase in recent years of the budget allocated to VHA by the US Government. Moreover, managers and professionals also show a high level of commitment. Professionals are very committed to the philosophy, mission,

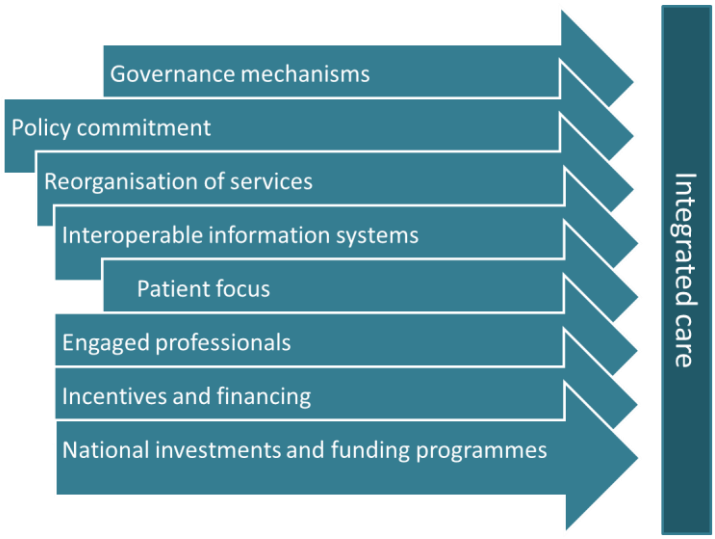
vision and values of “caring for those who have served us”; summarised with the slogan "I Care" with which professionals fully identify. This commitment is reinforced through various incentive policies. Budget allocations for each centre are reviewed according to the number of patients treated at the centre. In addition, the payment for professionals also includes, among other items, performance pay, according to specific goals and performance objectives.

Another key element that helps ensure the continuum of patient care, improving the quality and economic efficiency of the system, is the intensive use of technologies and the growing number of programmes promoting their use, such as the online personal health record, telehealth programmes and more recently, an increasing number of mobile apps.

As a result of the continuous evaluation of the system, the high degree of communication and the participation of all stakeholders, new programmes and initiatives are continuously being launched. They are evaluated to ensure their suitability and effective implementation. The clinical and economic impact of these programmes and of the system in general, is well documented.

As a final conclusion, as discussed throughout this document, the VHA has achieved a high level of integration which ensures high quality care to patients. This is reflected in the index of VHA patients’ satisfaction, which is very high, and above the country’s other systems. To sum up, Figure 7 shows the main facilitators (Villalba, 2013) that characterise this case. All the facilitators are in place since VHA represents a unique healthcare system where the commitment amongst politicians, managers, professionals and patients is high. Moreover, the reform carried out focused on integration.

Figure 5: Facilitators towards Integrated Care in the VHA case



References

Administration for Community Living, US Department of Health and Human Services. http://www.acl.gov/

American Customer Satisfaction Index (2014). *Veterans Health Administration. Veterans Affairs 2013 Customer Satisfaction Inpatient Survey. Final Report.* Available at: http://www.va.gov/health/docs/VA2013InpatientACSI.pdf

Auerbach, D. I., Weeks, W. B., & Brantley, I. (2013). *Health Care Spending and Efficiency in the US Department of Veterans Affairs*. RAND Corporation. Available at: http://www.rand.org/content/dam/rand/pubs/research_reports/RR200/RR285/RAND_RR285.pdf

Bagalman, Erin (2014). *The Number of Veterans That Use VA Health Care Services: A Fact Shee*t. Congressional Research Service. Available at: http://www.fas.org/sgp/crs/misc/R43579.pdf

Book, Robert (2014). *Veterans Health Administration: A Preview of Single-Payer Health Care.* Available at: http://americanactionforum.org/research/veterans-health-administration-a-preview-of-single-payer-health-care

Center for Medicare and Medicaid Services (CMS). http://www.cms.gov/

Darkins, Adam (2013). *Telehealth Services in the United States.* Department of Veterans Affairs (VA). Available at: http://c.ymcdn.com/sites/www.hisa.org.au/resource/resmgr/telehealth2014/Adam-Darkins.pdf

Department of Veterans Affairs (2014) *FY 2015 Budget Submission. Volume II. Medical Programs and Information Technology Programs. Congressional Submission FY 2015 Funding and FY 2016 Advance Appropriations*. Available at: http://www.va.gov/budget/docs/summary/Fy2015-VolumeII-MedicalProgramsAndInformationTechnology.pdf

Department of Veterans Affairs.(2010). *Strategic Plan FY 2010-2014.* Available at: http://www.va.gov/op3/Docs/StrategicPlanning/VA_2010_2014_Strategic_Plan.pdf

Department of Veterans Affairs.(2014) *Strategic Plan FY 2014-2020.* Available at: http://www.va.gov/op3/docs/StrategicPlanning/VA2014-2020strategicPlan.pdf

Jha, A. K., Perlin, J. B., Kizer, K. W., & Dudley, R. A. (2003). E*ffect of the transformation of the Veterans Affairs Health Care System on the quality of care.* New England Journal of Medicine, 348(22), 2218-2227. Available at: http://www.ualberta.ca/~dcl3/ABCDreview/papers/2003_Jha_8117.pdf

Kizer, K.W. (1996) *Prescription for Change. The Guiding Principles and Strategic Objectives Underlying the Transformation of the Veterans Healthcare System.* Available at: http://www.va.gov/HEALTHPOLICYPLANNING/rxweb.pdf

Kizer, K.W. (April. 2014) *Achieving integrated care: key lessons in the transformation of the Veterans Health Administration in the USA*. 14th International Conference of Integrated Care. Brussels.

Kizer, K.W. (May 1, 2012) *Achieving Integrated Care: Observations from the VA.* King's Fund Integrating Care Symposium. London, UK. Available at: http://www.kingsfund.org.uk/sites/files/kf/ken-kizer-achieving-integrated-care-veterans-affairs-kings-fund-may12.pdf

OECD (2013), *Health at a Glance 2013: OECD Indicators,* OECD Publishing. Available at http://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2013_health_glance-2013-en

Office of Public Affairs Media Relations (2011). *VA Announces Budget Request for 2012*. Available at http://www.va.gov/opa/pressrel/pressrelease.cfm?id=2054

Office of Public affairs of the Veterans Administration Department (2014). *Care and Benefits for* Veterans *Strengthened by $164 Billion VA Budget.* Available at: http://www.va.gov/opa/pressrel/pressrelease.cfm?id=2528

Ortman, J. M., Velkoff, V. A., & Hogan, H. (2014). An aging nation: the older population in the United States. Proc. Economics and Statistics Administration, US Department of Commerce. Available at: http://www.census.gov/prod/2014pubs/p25-1140.pdf

Rice, Thomas; Rosenau, Pauline; Unruh Lynn Y.; Barnes, Andrew J. (2013). *Health Systems in Transition. Vol 15 Nº3 2013. United States of America. Health system review*. European Observatory on Health Systems and Policies. Available at: http://www.euro.who.int/__data/assets/pdf_file/0019/215155/HiT-United-States-of-America.pdf?ua=1

Smith J. C. and Medalia C., U.S. Census Bureau, Current Population Reports, P60-250, Health Insurance Coverage in the United States: 2013, U.S. Government Printing Office, Washington, DC, 2014.

Supiano, M. A., Alessi, C., Chernoff, R., Goldberg, A., Morley, J. E., Schmader, K. E., & Shay, K. (2012). *Department of Veterans Affairs Geriatric Research, Education and Clinical Centers: translating aging research into clinical geriatrics*. Journal of the American Geriatrics Society, 60(7), 1347-1356.

US Department of Commerce, Bureau of Economic Analysis. http://www.bea.gov/

VA Office of General Inspector. Office of Audits and Evaluation (2011). *Audit of Retention Incentives for Veterans Health Administration and VA Central Office Employees*. Department of Veterans Affairs. Available at: http://www.va.gov/oig/pubs/VAOIG-10-02887-30.pdf

Veterans Affairs Department (2013). *Performance and Accountability Report*. Available at: http://www.va.gov/budget/docs/report/2013-VAPAR_FullWeb.pdf

Veterans Affairs Department (2014). *Performance and Accountability Report*. Available at: http://www.va.gov/budget/docs/report/2014-VAparPartI.pdf

Villalba, E., Casas, I., Abadie, F., & Lluch, M. (2013). Integrated personal health and care services deployment: experiences in eight European countries. International journal of medical informatics, 82(7), 626-635.

Westat (2010). *National Survey of Veterans,Active Duty Service Members, Demobilized National Guard and Reserve Members, Family Members, and* Surviving Spouses. Final Report. Deliverable 27. Submitted to: Department of Veterans affairs. Available at http://www.va.gov/SURVIVORS/docs/NVSSurveyFinalWeightedReport.pdf

Wasserman, J., Ringel, J., Wynn, B., Zwanziger, J., & Ricci, K. (2001). An Analysis of the Veterans Equitable Resource Allocation (VERA) System (No. RAND/MR-1419-DVA). RAND NATIONAL DEFENSE RESEARCH INST SANTA MONICA CA

Annex

VHA Performance

Table 5 below shows results from a study conducted on 800 patients over 55, with an average age of 65.5, who had access to diagnostic services. This table presents the evolution of some of the most relevant quality of care indicators during the timeframe of the study.

Table 5: Performance of VHA, percentage of veterans undergoing medical tests

Setting and type of care	1995	1997	1998	1999	2000
Preventive Care					
Mammography	64	87	89	91	90
Influenza Vaccination	28	61	67	75	78
Pneumococcal Vaccination	27	60	71	77	81
Colorectal Cancer Screening	33	62	72	72	68
Cervical-cancer Screening	62	90	93	94	93
Outpatient Care					
Diabetes					
Measurement of Glycosylated	51	84	90	94	94
Eye Examination	48	69	72	73	67
Lipid Screening	NM[7]	NM	64	71	89
Hypertension					
Good Blood Pressure Values	25	NM	NM	41	46
Depression					
Screening	NM	NM	44	62	73
Inpatient Care					
Acute Myocardial Infarction					
Aspirin within 24 hours after infarct	NM	NM	92	92	93
Aspirin at discharge	89	92	95	97	98
ß-blocker at discharge	70	83	93	94	95
ACE inhibitor if EF<40%	NM	NM	NM	NM	90
Smoking Cessation	NM	NM	NM	NM	62
Congestive Heart Failure					
EF checked	NM	NM	NM	92	94
ACE inhibitor if EF<40%	NM	NM	NM	94	93

Source: Ashish K. Jha, 2003

[7] *Not measured*

Comparison of the access to diagnostic procedures both in the VHA and Medicare. Medicare data are from the Center for Medicare Services billing system except data on influenza and pneumococcal vaccination, which are from the Behavioral Risk Factor Surveillance System.

Table 6: Comparison between VHA and Medicare

Setting and Clinical Topic	VA, 1997-1999	Medicare, 1997-1999	VA, 2000	Medicare, 2000
Preventive Care				
Mammography	89	56	90	77
Influenza Vacc.	71	66	78	71
Pneumococ. Vacc	73	46	81	64
Outpatient Care				
Diabetes				
Measurement of Glycosylated	91	71	94	70
Eye Examination	72	69	67	74
Lipid Screening	68	57	89	60
Inpatient Care				
Acute Myocardial Infarction				
Aspirin within 24 hours after infarct	92	84	93	84
Aspirin at discharge	95	85	98	84
ß-blocker at discharge	91	72	95	78
ACE inhibitor if EF<40%	NM	69	90	71
Smoking Cessation	NM	39	62	38
Congestive Heart Failure				
EF checked	92	65	94	71
ACE inhibitor if EF<40%	94	69	93	66

Source: Ashish K. Jha, 2003

European Commission
EUR 27265 EN – Joint Research Centre – Institute for Prospective Technological Studies

Title: Strategic Intelligence Monitor on Personal Health Systems Phase 3 (SIMPHS3) – Veterans Health Administration (USA) Case Study Report

Authors: Francisco Mansoa, Alberto Sánchez, Elena Villalba, Ignacio Peinado

Luxembourg: Publications Office of the European Union
2015 – 35 pp. – 21.0 x 29.7 cm

EUR – Scientific and Technical Research series – ISSN 1831-9424 (online)
ISBN 978-92-79-48392-9 (PDF)
doi:10.2791/542626

LF-NA-27265-EN-N

JRC Mission

As the Commission's in-house science service, the Joint Research Centre's mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

Working in close cooperation with policy Directorates-General, the JRC addresses key societal challenges while stimulating innovation through developing new methods, tools and standards, and sharing its know-how with the Member States, the scientific community and international partners.

Serving society
Stimulating innovation
Supporting legislation

doi:10.2791/542626
ISBN 978-92-79-48392-9

Publications Office