Telefónica

Gestión Remota de Pacientes

Proyecto Valcronic_

eHealth Telefónica
Soluciones para una nueva Sanidad

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Gerente Marketing y Desarrollo de Negocio
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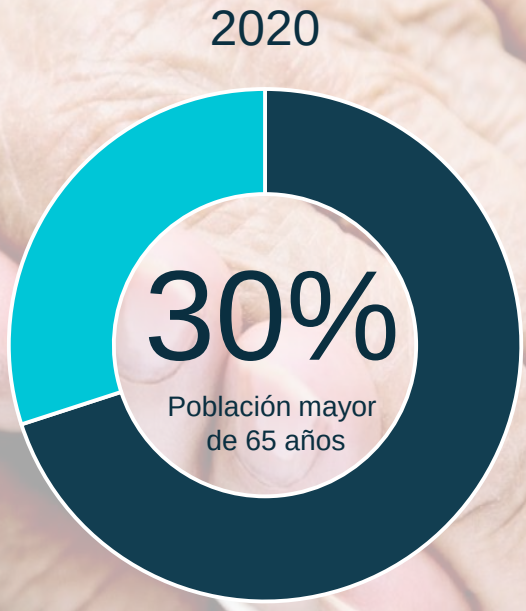
eSalud ASTURIAS

Estamos viviendo la revolución tecnológica más profunda de la historia


El modo de relacionarnos con los usuarios ha cambiado totalmente…

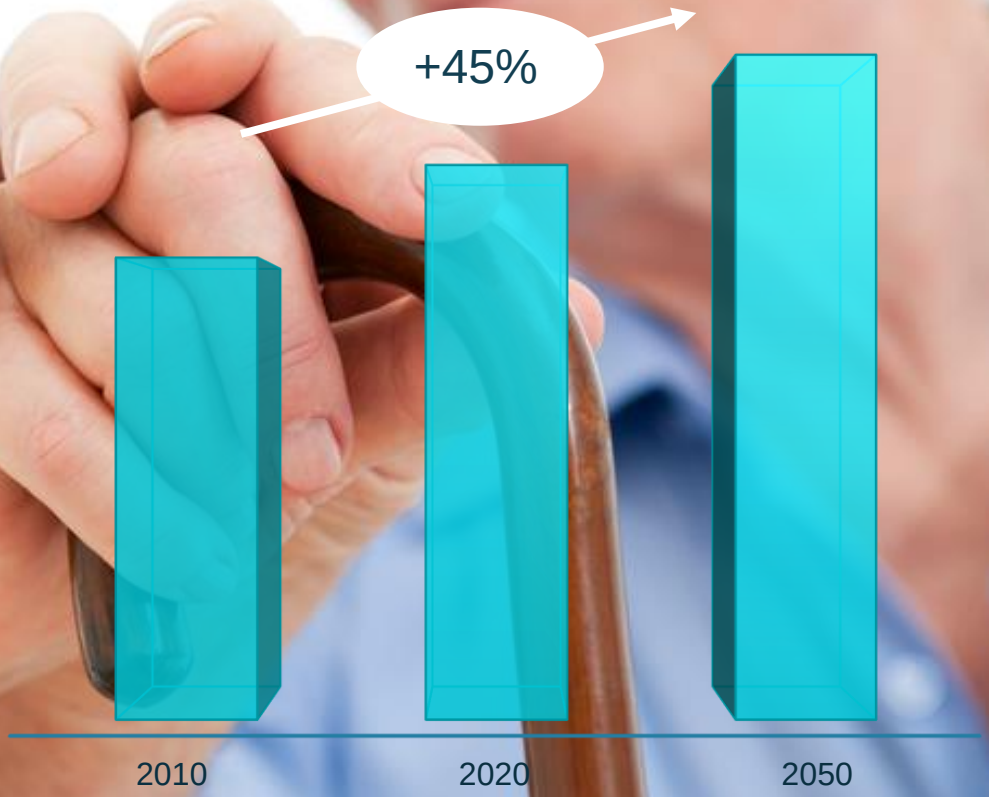

SOLUCIONES TECNOLÓGICAS
NUEVOS PROCESOS CLÍNICOS
NUEVO MODELO ASISTENCIAL
El sector sanitario debe sumarse a esta transformación tecnológica

La población Española está envejeciendo drásticamente



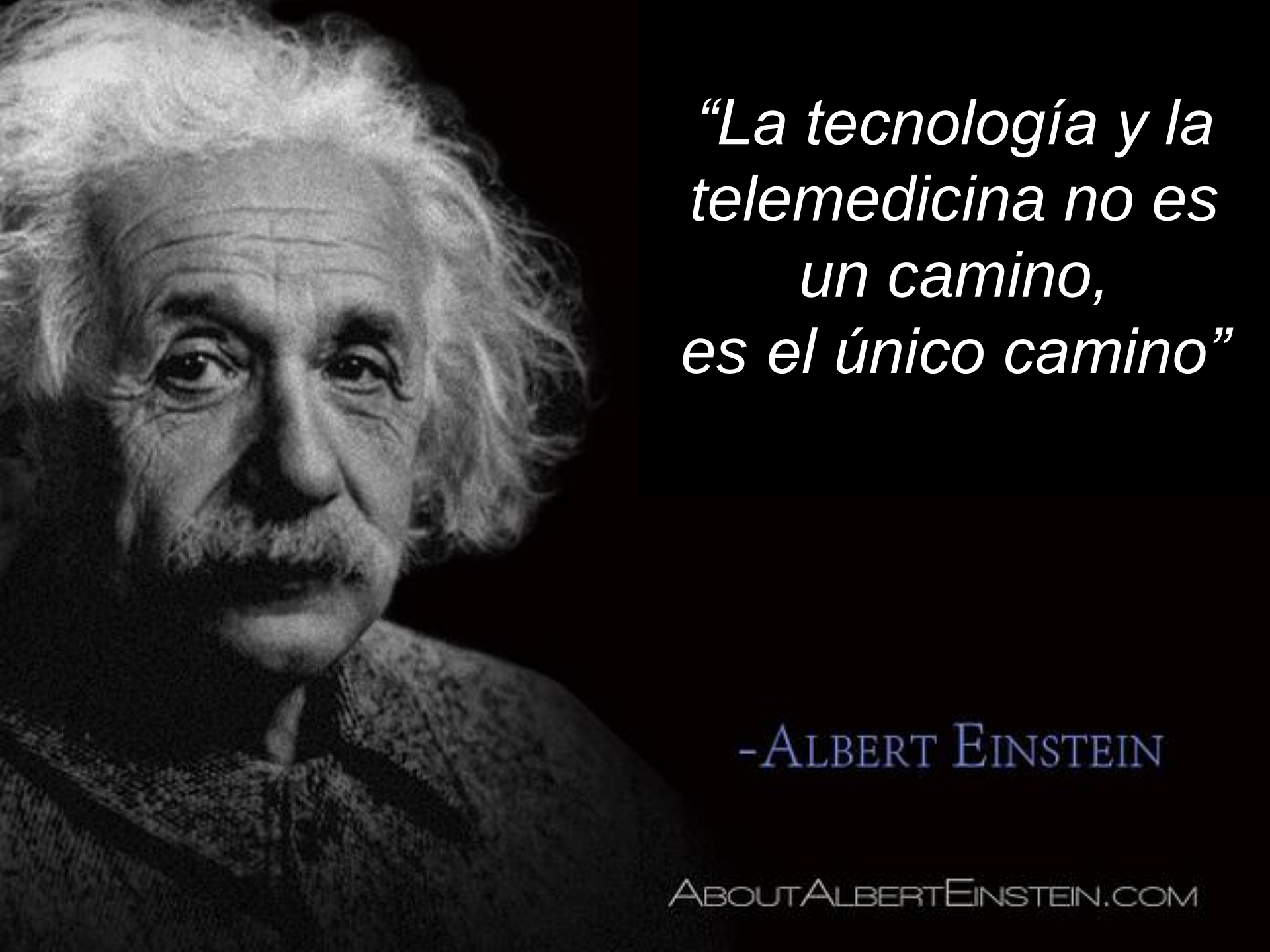
Datos población y previsión de envejecimiento del INE

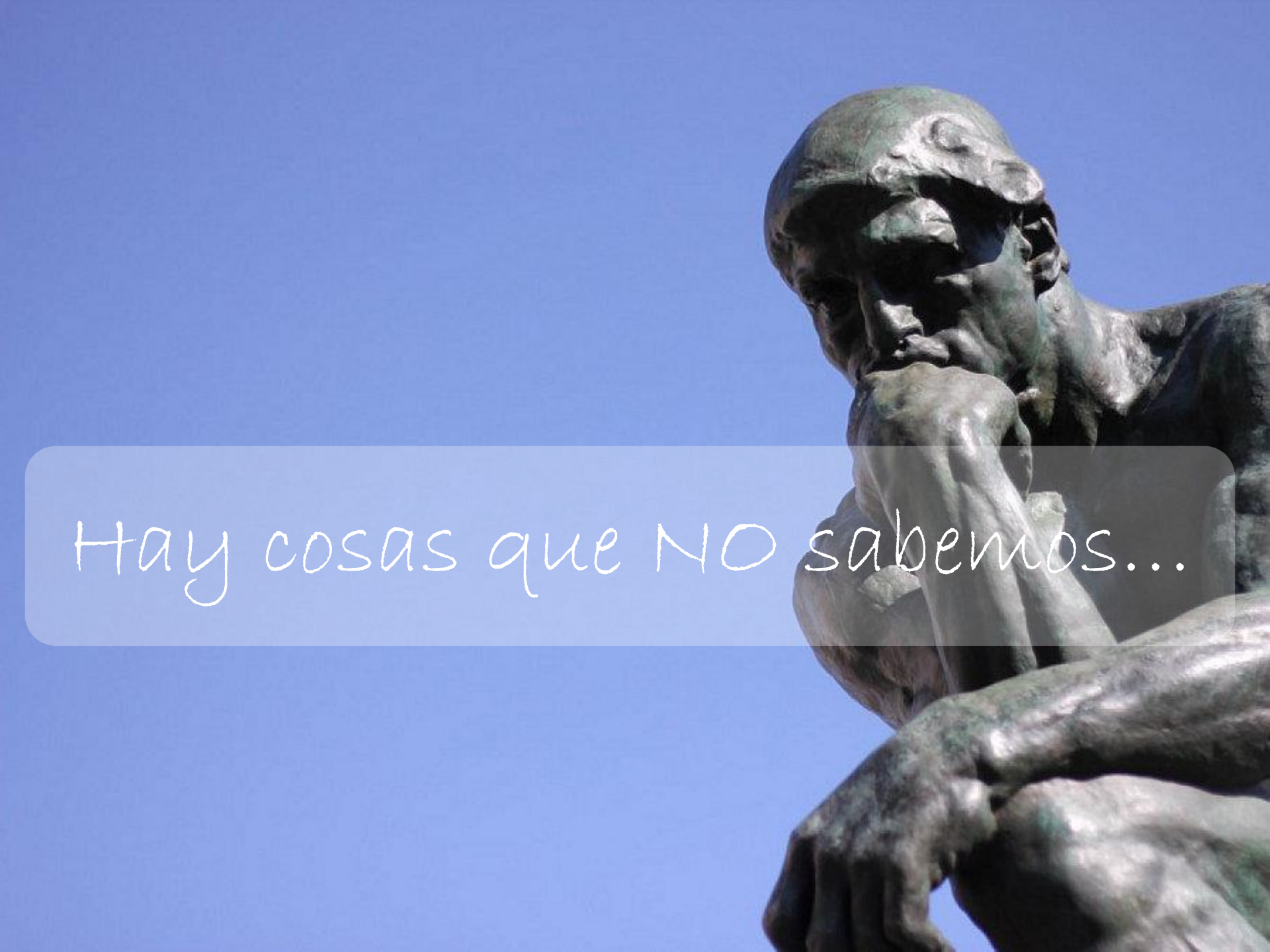
Lo que impacta directamente en la cronicidad y en el gasto sanitario

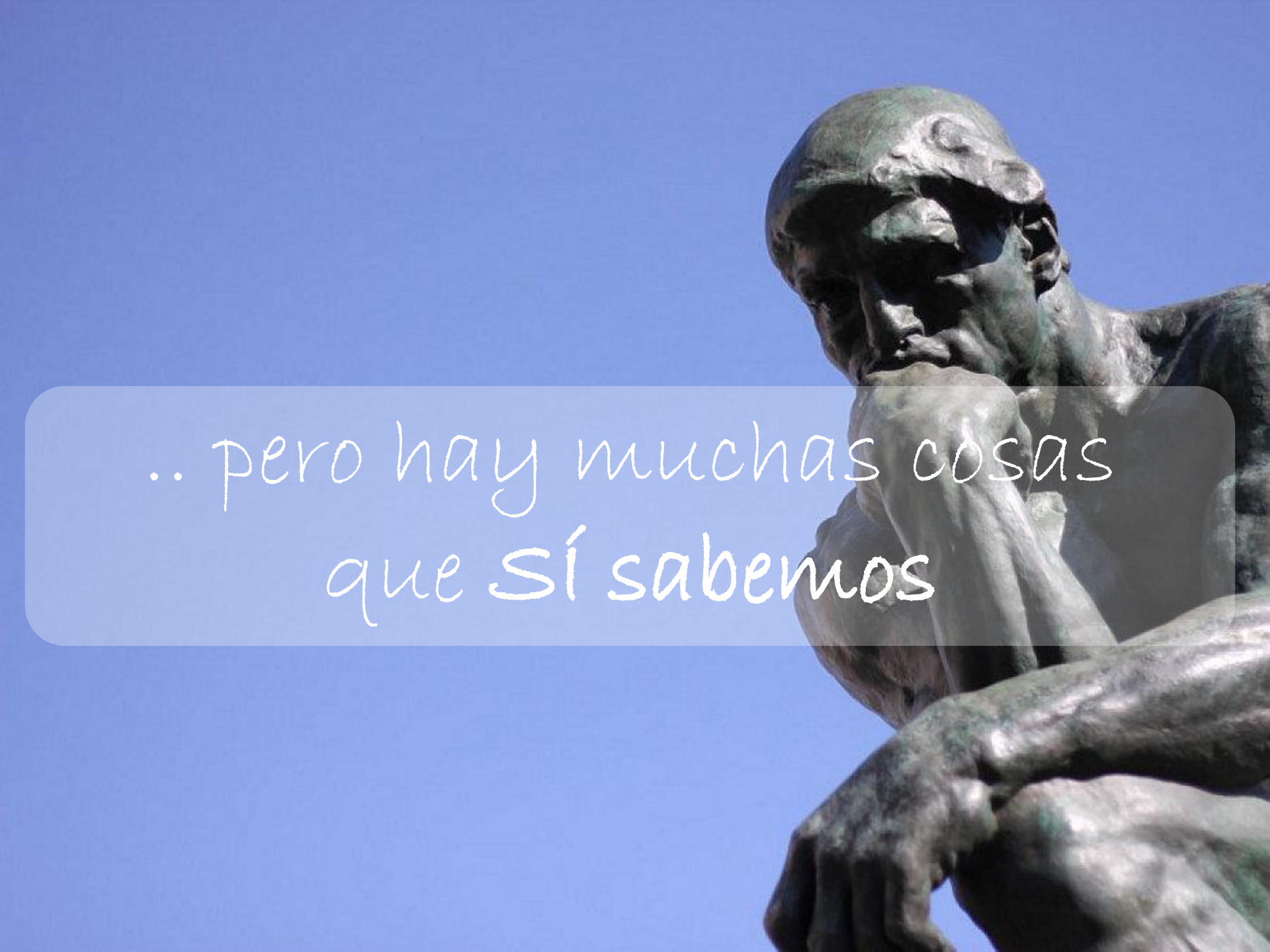


Y hay consenso en que es necesario cambiar el modelo asistencial


¿Cómo?


“La tecnología y la telemedicina no es un camino, es el único camino”
-Albert Einstein
AboutAlbertEinstein.com


Hay cosas que NO sabemos...


.. pero hay muchas cosas
que sí sabemos

Hay muchas cosas que sí sabemos

- ✓ Hospitalizaciones y urgencias son el principal coste de los pacientes crónicos
- ✓ Debido a las descompensaciones de los pacientes
- ✓ El seguimiento y la monitorización intensiva reducen dichas descompensaciones
- ✓ Ese seguimiento no puede ser sólo con recurso humano, porque no es escalable
- ✓ Sólo un nuevo modelo asistencial basado en la tecnología y la telemedicina puede conseguir resultados y ser escalable
- ✓ Hay evidencias más que de sobra que así lo demuestran

Hay factores críticos de éxito

Involucrar a los profesionales

Seleccionar el target de pacientes

Esto NO es "Café para todos"

Implementar un nuevo modelo de atención

Criterios de inclusión

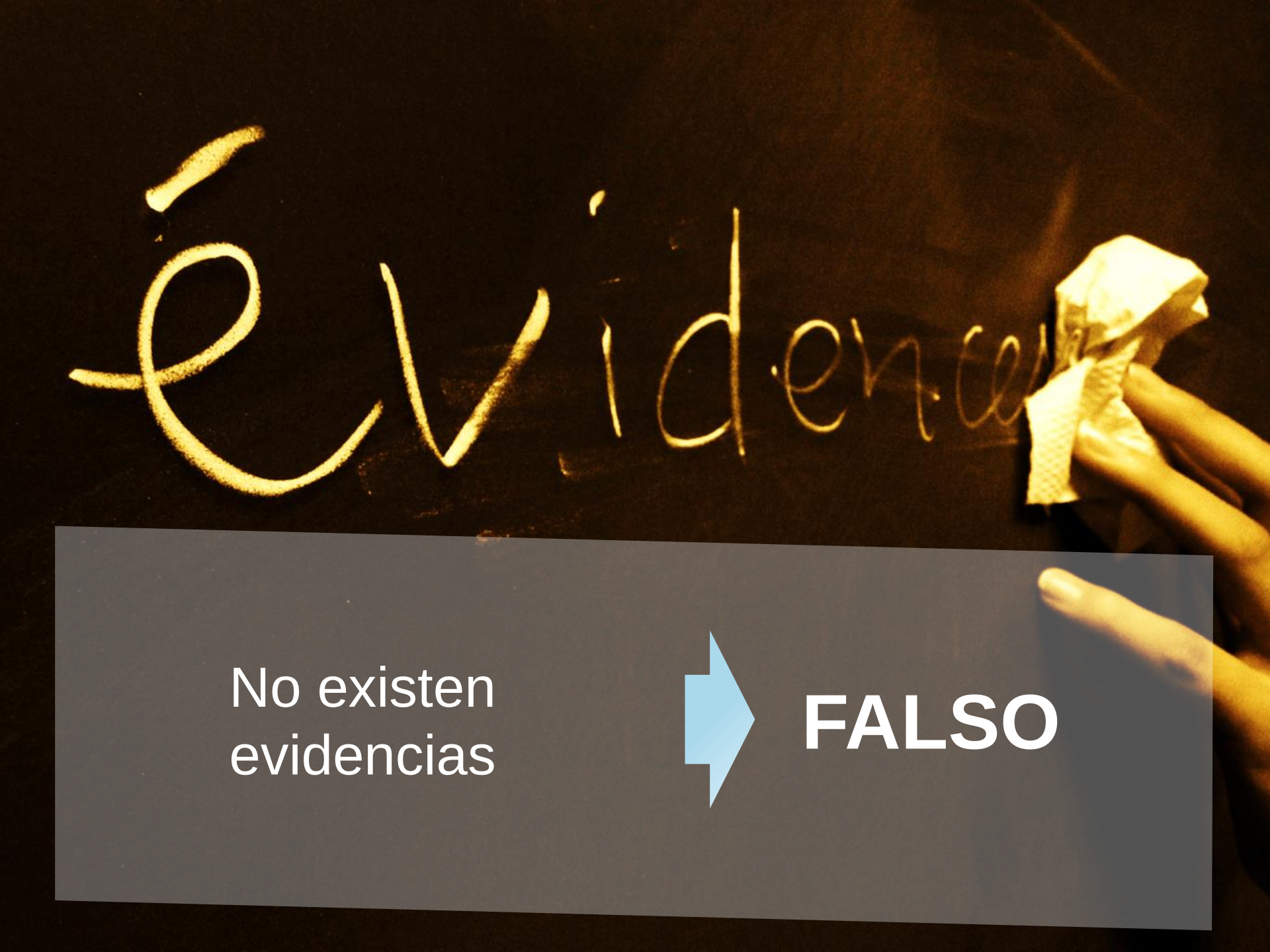
Gobernanza del proyecto

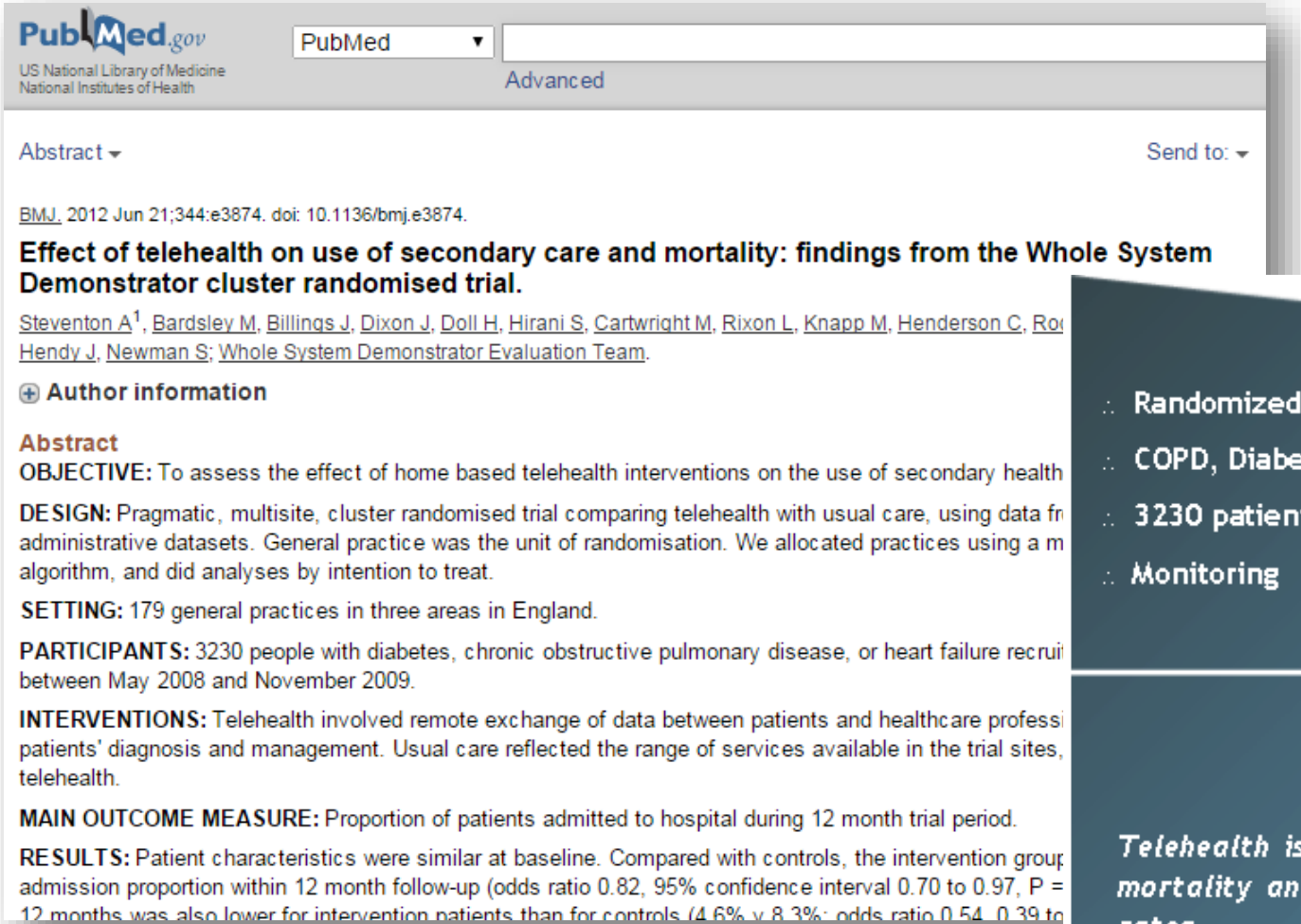
…y hay resistencias y barreras
que vencer….


La gente mayor no es capaz de usar las nuevas tecnologías
FALSO

La telemedicina no es eficiente

FALSO


No existen
evidencias
FALSO



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BMJ. 2012 Jun 21;344:e3874. doi: 10.1136/bmj.e3874.

Effect of telehealth on use of secondary care and mortality: findings from the Whole System Demonstrator cluster randomised trial.

Steventon A[1], Bardsley M, Billings J, Dixon J, Doll H, Hirani S, Cartwright M, Rixon L, Knapp M, Henderson C, Ro
Hendy J, Newman S; Whole System Demonstrator Evaluation Team.

⊕ **Author information**

Abstract

OBJECTIVE: To assess the effect of home based telehealth interventions on the use of secondary health

DESIGN: Pragmatic, multisite, cluster randomised trial comparing telehealth with usual care, using data fr
administrative datasets. General practice was the unit of randomisation. We allocated practices using a m
algorithm, and did analyses by intention to treat.

SETTING: 179 general practices in three areas in England.

PARTICIPANTS: 3230 people with diabetes, chronic obstructive pulmonary disease, or heart failure recrui
between May 2008 and November 2009.

INTERVENTIONS: Telehealth involved remote exchange of data between patients and healthcare profess
patients' diagnosis and management. Usual care reflected the range of services available in the trial sites,
telehealth.

MAIN OUTCOME MEASURE: Proportion of patients admitted to hospital during 12 month trial period.

RESULTS: Patient characteristics were similar at baseline. Compared with controls, the intervention grou
admission proportion within 12 month follow-up (odds ratio 0.82, 95% confidence interval 0.70 to 0.97, P =
12 months was also lower for intervention patients than for controls (4.6% v 8.3%; odds ratio 0.54, 0.39 to

- Randomized trial
- COPD, Diabetes and heart failure
- 3230 patients—19 months
- Monitoring

Telehealth is associated with lower mortality and emergency admission rates.

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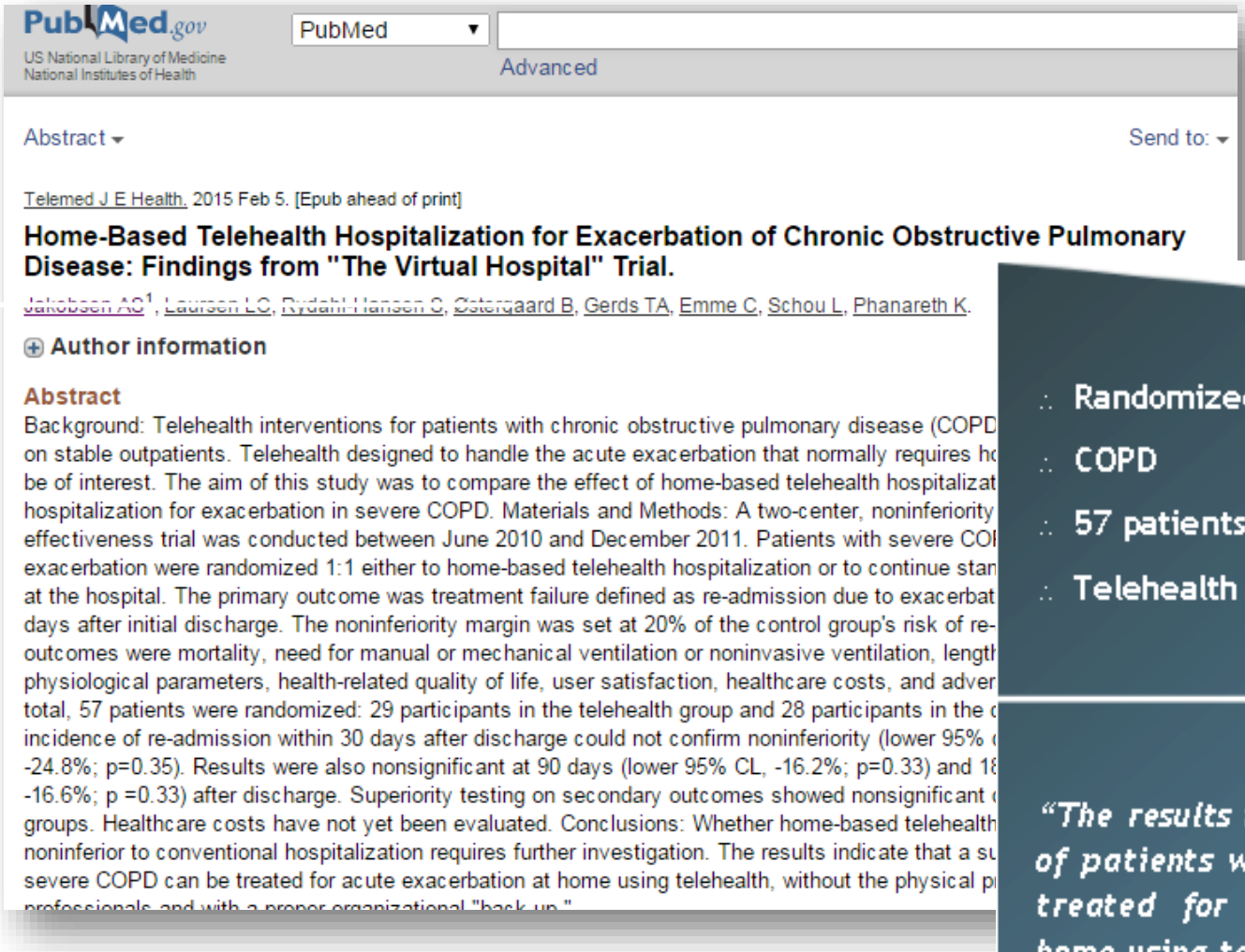

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Telemed J E Health. 2015 Feb 5. [Epub ahead of print]

Home-Based Telehealth Hospitalization for Exacerbation of Chronic Obstructive Pulmonary Disease: Findings from "The Virtual Hospital" Trial.

Jakobsen AS[1], Laursen LC, Rydahl-Hansen S, Østergaard B, Gerds TA, Emme C, Schou L, Phanareth K.

⊕ **Author information**

Abstract

Background: Telehealth interventions for patients with chronic obstructive pulmonary disease (COPD
on stable outpatients. Telehealth designed to handle the acute exacerbation that normally requires h
be of interest. The aim of this study was to compare the effect of home-based telehealth hospitalizat
hospitalization for exacerbation in severe COPD. Materials and Methods: A two-center, noninferiority
effectiveness trial was conducted between June 2010 and December 2011. Patients with severe CO
exacerbation were randomized 1:1 either to home-based telehealth hospitalization or to continue stan
at the hospital. The primary outcome was treatment failure defined as re-admission due to exacerbat
days after initial discharge. The noninferiority margin was set at 20% of the control group's risk of re-
outcomes were mortality, need for manual or mechanical ventilation or noninvasive ventilation, lengt
physiological parameters, health-related quality of life, user satisfaction, healthcare costs, and adver
total, 57 patients were randomized: 29 participants in the telehealth group and 28 participants in the
incidence of re-admission within 30 days after discharge could not confirm noninferiority (lower 95%
-24.8%; p=0.35). Results were also nonsignificant at 90 days (lower 95% CL, -16.2%; p=0.33) and 1
-16.6%; p =0.33) after discharge. Superiority testing on secondary outcomes showed nonsignificant
groups. Healthcare costs have not yet been evaluated. Conclusions: Whether home-based telehealth
noninferior to conventional hospitalization requires further investigation. The results indicate that a su
severe COPD can be treated for acute exacerbation at home using telehealth, without the physical p
professionals and with a proper organizational "back-up."

- Randomized controlled trial
- COPD
- 57 patients– 180 days
- Telehealth home hospitalization

"The results indicate that a subgroup of patients with severe COPD can be treated for acute exacerbation at home using telehealth"

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National Institutes of Health

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Abstract

Send to:

Ann Am Thorac Soc. 2015 Mar;12(3):323-31. doi: 10.1513/AnnalsATS.201501-042OC.

Impact of a telehealth and care management program for patients with chronic obstructive pulmonary disease.

Au DH[1], Macaulay DS, Jarvis JL, Desai US, Birnbaum HG.

Author information

Abstract

RATIONALE: Improving outcomes and health resource use for patients with chronic obstructive pulmona care is a priority for health systems. The Health Buddy Program, a content-driven telehealth system cou management, is designed to enhance patient education, self-management, and timely access to care.

OBJECTIVES: To examine the effects of the Health Buddy Program on resource use among Medicare p who participated in a Centers for Medicare and Medicaid Services demonstration project from 2006 to 20

METHODS: Medicare fee-for-service beneficiaries with COPD who enrolled in the intervention at two par propensity-score matched to similar patients with COPD identified from a 5% random sample of Medica Difference-in-difference analyses descriptively compared the program's effect on quarterly healthcare res year study period compared with baseline. Negative binomial models estimated the association of the pr resource outcomes adjusting for significant ($P < 0.05$) baseline differences post matching.

MEASUREMENTS AND MAIN RESULTS: The effect of the Health Buddy Program on quarterly all-caus related hospital admissions, hospital admissions for COPD exacerbations, and all-cause emergency dep assessed after matching. Intervention (n = 619) and matched control subjects (n = 619) had similar base after matching. The Health Buddy Program was associated with 23% lower quarterly all-cause hospital a lower quarterly respiratory-related hospital admissions compared with baseline for intervention beneficiar

- Randomized trial
- COPD
- 1238 patients—4 years
- Monitoring

In subgroup analyses, patients who engaged in the intervention during the study period (n=247) demonstrated significantly lower quarterly hospital admissions for chronic obstructive pulmonary disease exacerbations.

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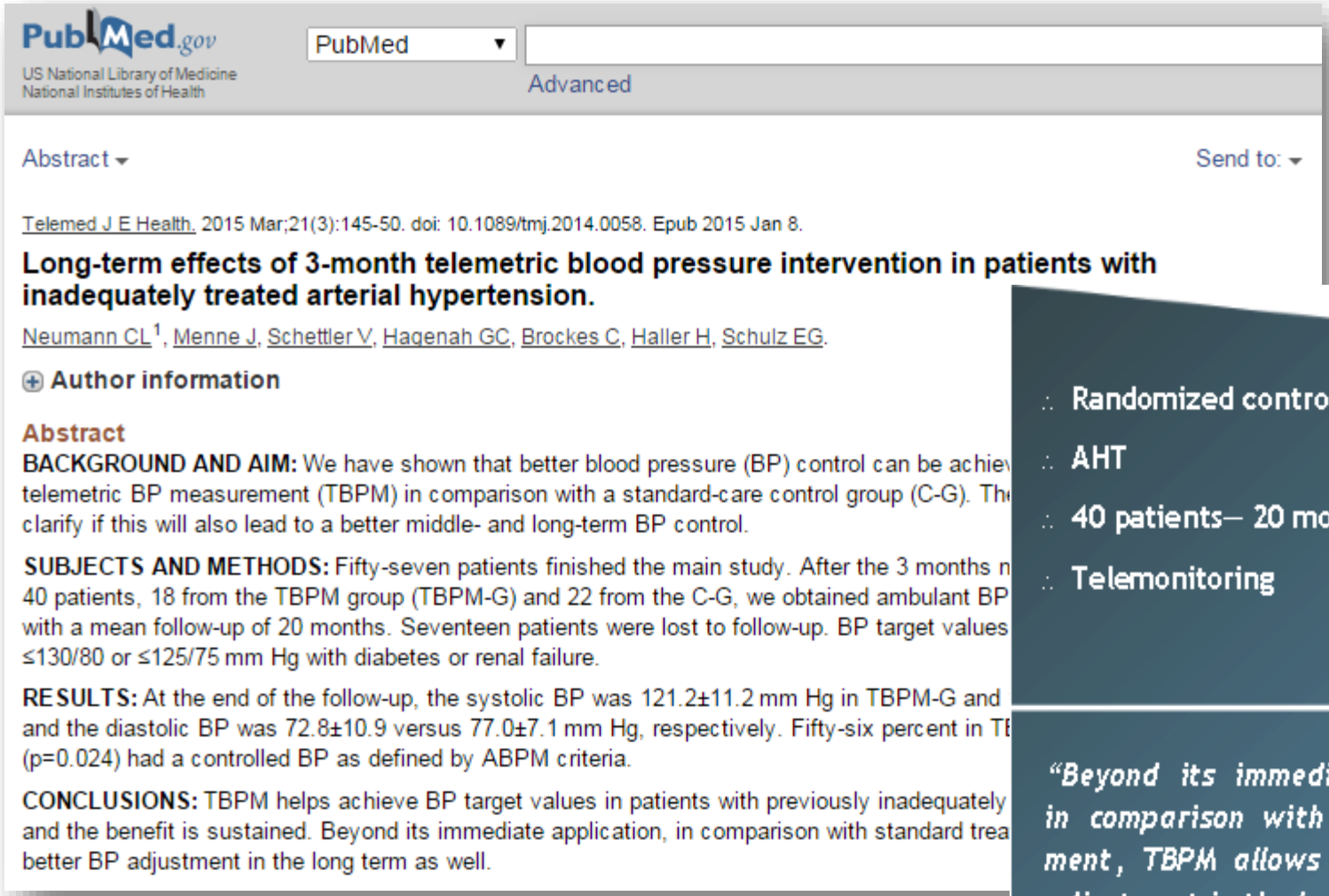

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Telemed J E Health. 2015 Mar;21(3):145-50. doi: 10.1089/tmj.2014.0058. Epub 2015 Jan 8.

Long-term effects of 3-month telemetric blood pressure intervention in patients with inadequately treated arterial hypertension.

Neumann CL[1], Menne J, Schettler V, Hagenah GC, Brockes C, Haller H, Schulz EG.

⊕ Author information

Abstract

BACKGROUND AND AIM: We have shown that better blood pressure (BP) control can be achiev
telemetric BP measurement (TBPM) in comparison with a standard-care control group (C-G). Th
clarify if this will also lead to a better middle- and long-term BP control.

SUBJECTS AND METHODS: Fifty-seven patients finished the main study. After the 3 months n
40 patients, 18 from the TBPM group (TBPM-G) and 22 from the C-G, we obtained ambulant BP
with a mean follow-up of 20 months. Seventeen patients were lost to follow-up. BP target values
≤130/80 or ≤125/75 mm Hg with diabetes or renal failure.

RESULTS: At the end of the follow-up, the systolic BP was 121.2±11.2 mm Hg in TBPM-G and
and the diastolic BP was 72.8±10.9 versus 77.0±7.1 mm Hg, respectively. Fifty-six percent in TB
(p=0.024) had a controlled BP as defined by ABPM criteria.

CONCLUSIONS: TBPM helps achieve BP target values in patients with previously inadequately
and the benefit is sustained. Beyond its immediate application, in comparison with standard trea
better BP adjustment in the long term as well.

- Randomized controlled trial
- AHT
- 40 patients– 20 months
- Telemonitoring

"Beyond its immediate application, in comparison with standard treatment, TBPM allows for a better BP adjustment in the long term as well."

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Telemed J E Health. 2015 Jan;21(1):3-8. doi: 10.1089/tmj.2014.0021. Epub 2014 Dec 2.

Cost comparison between home telemonitoring and usual care of older adults: a randomized trial (Tele-ERA).

Upatising B[1], Wood DL, Kremers WK, Christ SL, Yih Y, Hanson GJ, Takahashi PY.

⊕ Author information

Abstract

BACKGROUND: From 1992 to 2008, older adults in the United States incurred more healthcare other age group. Home telemonitoring has emerged as a potential solution to reduce these cos primary aim of the study was to evaluate whether the mean difference in total direct medical c adults receiving additional home telemonitoring care (TELE) (n=102) and those receiving usual were significant. Inpatient, outpatient, emergency department, decedents, survivors, and 30-da evaluated as secondary aim.

MATERIALS AND METHODS: Multivariate generalized linear models (GLMs) and parametric used to model cost and to determine significance of the cost differences. We also compared t mean costs.

RESULTS: From the conditional GLMs, the estimated mean cost differences (TELE versus U outpatient, and ED were -$9,537 (p=0.068), -$8,482 (p =0.098), -$1,160 (p=0.177), and $106 (p postenrollment cost was 11% lower than the prior year for TELE versus 22% higher for UC. Th decedents to survivors was 2.1:1 (TELE) versus 12.7:1 (UC).

CONCLUSIONS: There were no significant differences in the mean total cost between the two group had less variability in cost of care, lower decedents to survivors cost ratio, and lower tot

- Randomized trial
- Various pathologies
- 205 patients
- Telemonitoring

"The TELE group had less variability in cost of care, lower decedents to survivors cost ratio, and lower total 30-day readmission cost than the UC group"

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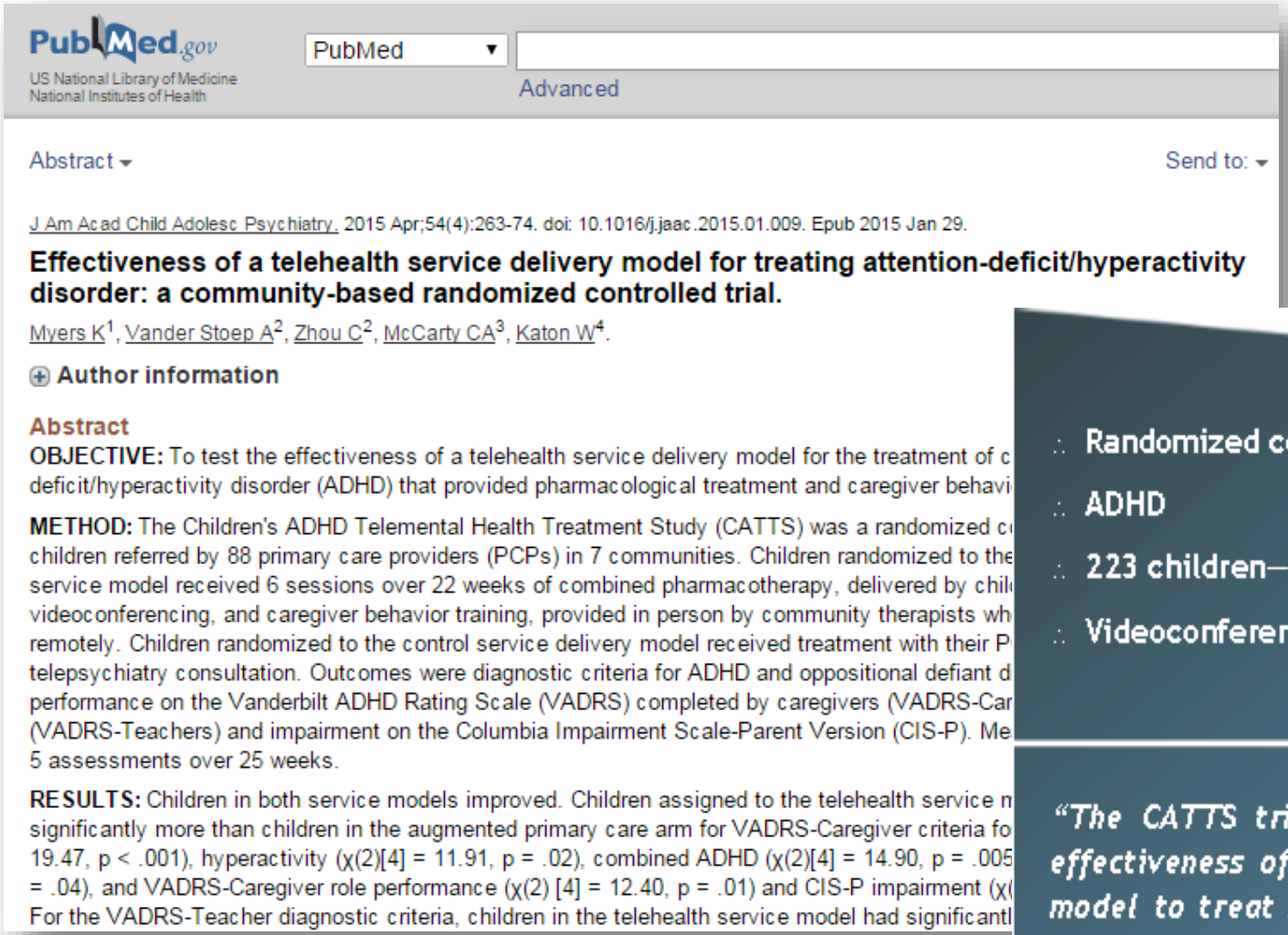

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J Am Acad Child Adolesc Psychiatry. 2015 Apr;54(4):263-74. doi: 10.1016/j.jaac.2015.01.009. Epub 2015 Jan 29.

Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial.

Myers K[1], Vander Stoep A[2], Zhou C[2], McCarty CA[3], Katon W[4].

⊕ **Author information**

Abstract

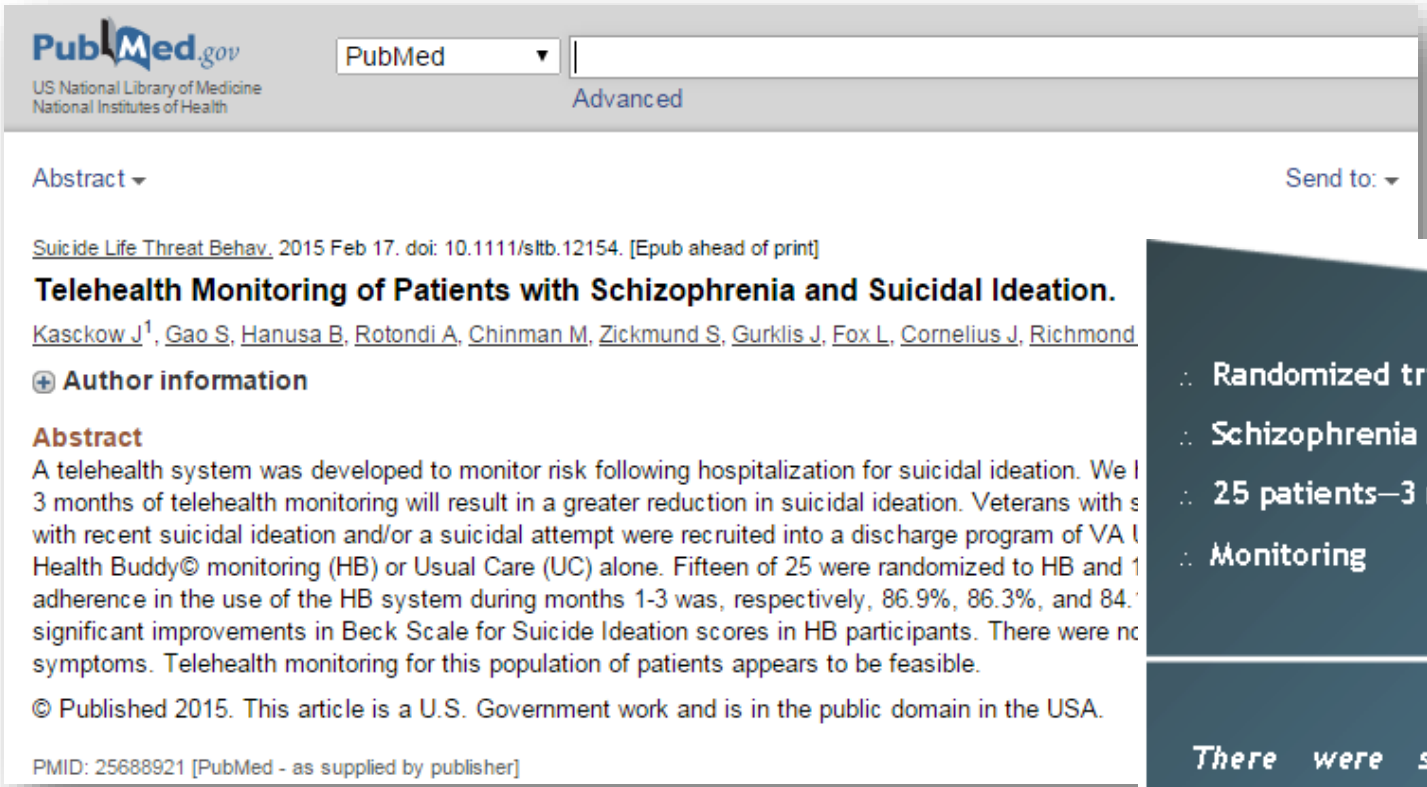
OBJECTIVE: To test the effectiveness of a telehealth service delivery model for the treatment of c
deficit/hyperactivity disorder (ADHD) that provided pharmacological treatment and caregiver behavi

METHOD: The Children's ADHD Telemental Health Treatment Study (CATTS) was a randomized c
children referred by 88 primary care providers (PCPs) in 7 communities. Children randomized to the
service model received 6 sessions over 22 weeks of combined pharmacotherapy, delivered by chil
videoconferencing, and caregiver behavior training, provided in person by community therapists wh
remotely. Children randomized to the control service delivery model received treatment with their P
telepsychiatry consultation. Outcomes were diagnostic criteria for ADHD and oppositional defiant d
performance on the Vanderbilt ADHD Rating Scale (VADRS) completed by caregivers (VADRS-Car
(VADRS-Teachers) and impairment on the Columbia Impairment Scale-Parent Version (CIS-P). Me
5 assessments over 25 weeks.

RESULTS: Children in both service models improved. Children assigned to the telehealth service n
significantly more than children in the augmented primary care arm for VADRS-Caregiver criteria fo
19.47, p < .001), hyperactivity (χ(2)[4] = 11.91, p = .02), combined ADHD (χ(2)[4] = 14.90, p = .005
= .04), and VADRS-Caregiver role performance (χ(2) [4] = 12.40, p = .01) and CIS-P impairment (χ(
For the VADRS-Teacher diagnostic criteria, children in the telehealth service model had significantl

- Randomized controlled trial
- ADHD
- 223 children—22 weeks
- Videoconference

"The CATTS trial demonstrated the effectiveness of a telehealth service model to treat ADHD in communities with limited access to specialty mental health services."



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Suicide Life Threat Behav. 2015 Feb 17. doi: 10.1111/sltb.12154. [Epub ahead of print]

Telehealth Monitoring of Patients with Schizophrenia and Suicidal Ideation.

Kasckow J[1], Gao S, Hanusa B, Rotondi A, Chinman M, Zickmund S, Gurklis J, Fox L, Cornelius J, Richmond

⊕ **Author information**

Abstract

A telehealth system was developed to monitor risk following hospitalization for suicidal ideation. We l
3 months of telehealth monitoring will result in a greater reduction in suicidal ideation. Veterans with s
with recent suicidal ideation and/or a suicidal attempt were recruited into a discharge program of VA U
Health Buddy© monitoring (HB) or Usual Care (UC) alone. Fifteen of 25 were randomized to HB and 1
adherence in the use of the HB system during months 1-3 was, respectively, 86.9%, 86.3%, and 84.
significant improvements in Beck Scale for Suicide Ideation scores in HB participants. There were nc
symptoms. Telehealth monitoring for this population of patients appears to be feasible.

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PMID: 25688921 [PubMed - as supplied by publisher]

- Randomized trial
- Schizophrenia
- 25 patients—3 months
- Monitoring

There were significant improvements in Beck Scale for Suicide Ideation scores in HB participants. There were no changes in depressive symptoms. Telehealth monitoring for this population of patients appears to be feasible.

Original Research

Cost-Utility and Cost-Effectiveness Studies of Telemedicine, Electronic, and Mobile Health Systems in the Literature: A Systematic Review

Isabel de la Torre-Díez, PhD,[1] Miguel López-Coronado, PhD,[1] Cesar Vaca, MS,[2,3] Jesús Saez Aguado, PhD,[2,3] and Carlos de Castro, PhD[4]

Departments of [1]Signal Theory and Communications, and Telematics Engineering, [2]Informatics, and [3]Statistics, University of Valladolid, Valladolid, Spain.
[4]Department of Informatics and Numeric Analysis, University of Cordoba, Cordoba, Spain.

Abstract

Objective: A systematic review of cost-utility and cost-effectiveness research works of telemedicine, electronic health (e-health), and mobile health (m-health) systems in the literature is presented. Materials and Methods: Academic databases and systems such as PubMed, Scopus, ISI Web of Science, and IEEE Xplore were searched, using different combinations of terms such as "cost-utility" OR "cost utility" AND "telemedicine," "cost-effectiveness" OR "cost effectiveness" AND "mobile health," etc. In the articles searched, there were no limitations in the publication date. Results: The search identified 35 relevant works. Many of the articles were reviews of different studies. Seventy-nine percent concerned the cost-effectiveness of telemedicine systems in different specialties such as telophthalmology, telecardiology, teledermatology, etc. More articles were found between 2000 and 2013. Cost-utility studies were done only for telemedicine systems. Conclusions: There are few cost-utility and cost-effectiveness studies for e-health and m-health systems in the literature. Some cost-effectiveness studies demon-

consultation between professional groups. Howeve
current telemedicine applications do not use the
World Health Organization defines e-health as the tr
resources and healthcare by electronic means.[2]
(m-health) can be defined simply as the use of wireles
deliver health services and information in mobile
devices such as mobile phones, tablet computers, mon
smartphones, etc.

A review of the literature suggests that there is a l
evidence with which to fully assess the economic
medicine, e-health, and m-health systems.[3] There are
costs associated with the development and implem
systems. Some of the costs, among others, are equipme
costs, and communications costs. Two of the most co
evaluation methods are cost-utility analysis (CUA) an
ness analysis (CEA). CUA is used especially in health
sessment. The main objective of CUA is to estimate the r
cost of a health-related intervention and the benefit it p
of the number of years lived in full health by the
technology assessments, the benefits are usually expr
adjusted life years.[4] The National Institute for Health
cellence defines quality-adjusted life years as a "meas
length of life weighted by a valuation of their health-r
life." The weights for quality-adjusted life years are der
individuals' preferences for different states of health.[5]

CEA, which is similar to CUA, is typically expressed i
where the denominator is a gain in health from a measu
years of life) and the numerator is the cost associated
gain.[6,7] Nowadays, the introduction of new e-healt

- Systematic Review
- Various pathologies
- Various methods

Among the main limitations of the economic evaluations of telemedicine systems are the lack of randomized control trials, small sample sizes, and the absence of quality data and appropriate measures.


Hay que afrontar un cambio!!!!


O2 health
Measurements history
Health at Home
Weight
Blood pressure
Heart rate
Blood oxygen
Glucose
Peak flow
Blood coagulation
Physical activity
18 – 25 May 2012
Telefónica
Servicio de gestión de pacientes crónicos
movistar
Pedro Sánchez García
Martes, 25 Jun. 2011 8:23
Tareas
Toma de glucosa
pendiente: antes de comer
¿Cómo está tu corazón?
ahora
Toma de glucosa
después de comer
Consulta con cardiólogo
14:30
página 1 de 2
Proximas tareas
Chequeo médico
Carpeta de salud
Mis mensajes
Opciones
SONY
Checkup
Tasks
Messages
More
Tasks for now:
Weigh yourself
How do you feel today?
Weight
Take
89,7 Kg
Blood pressure
126 / 70 mmHg
Heart rate
OMRON

Envío de biomedidas

Mensajería

Agenda

Acceso a contenidos educativos

Histórico de biomedidas y dashboard

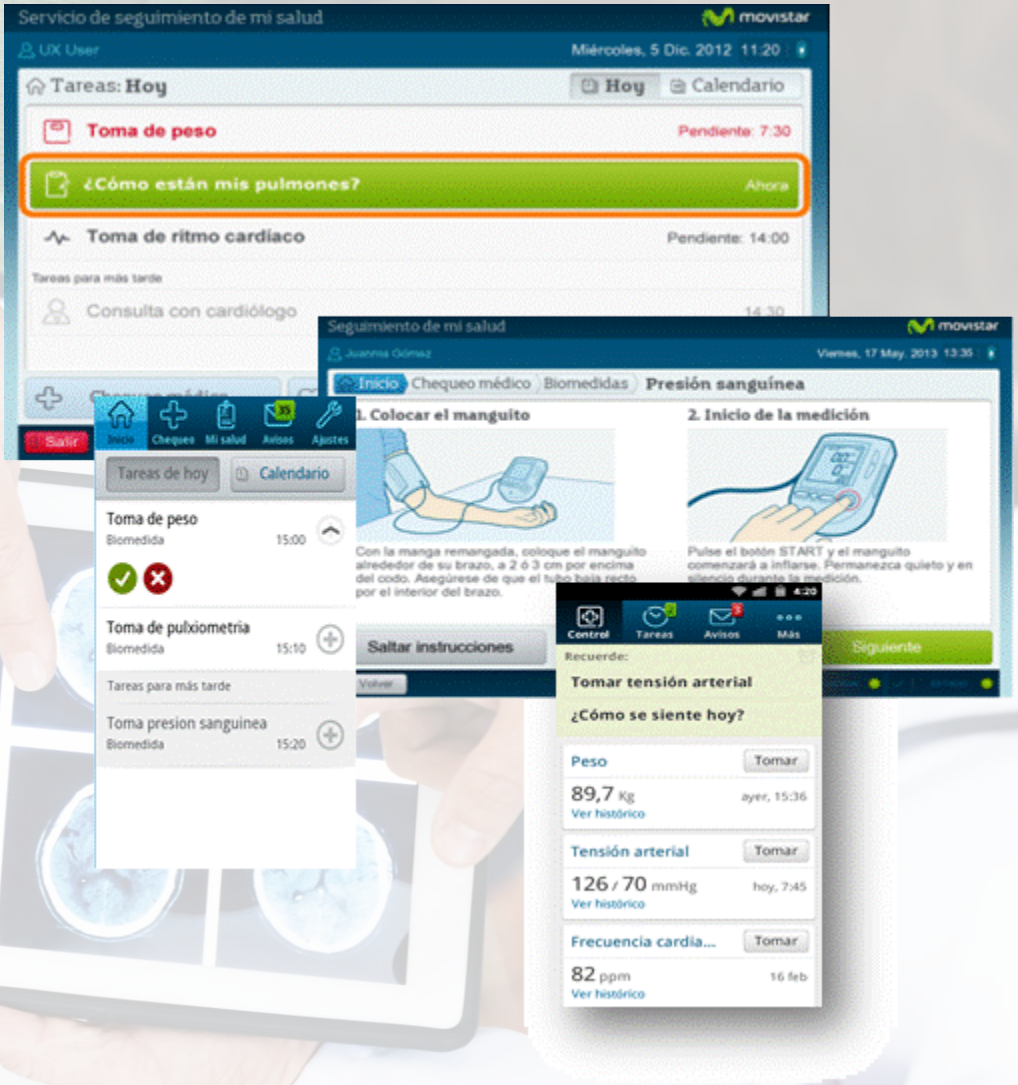
Botón de Contáctame

Envío de fotos

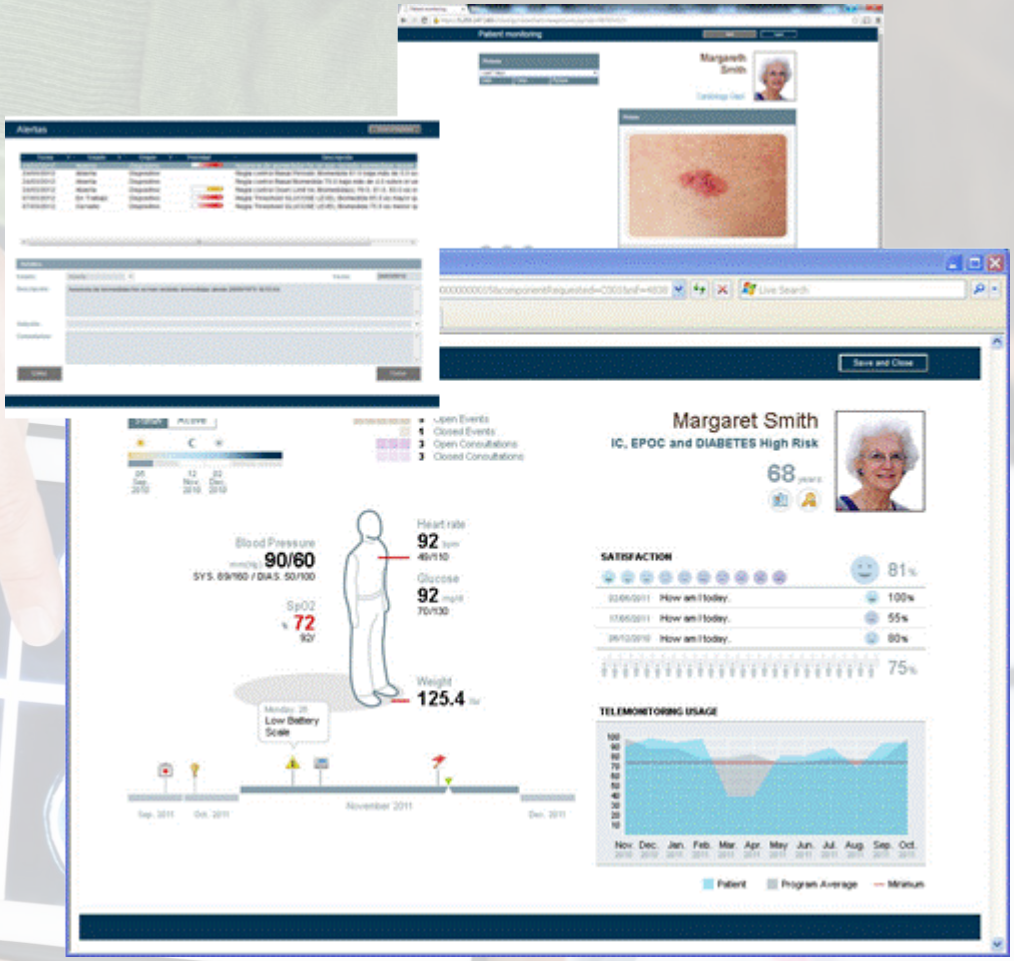
Video Conferencia

Mi tratamiento

Reminders

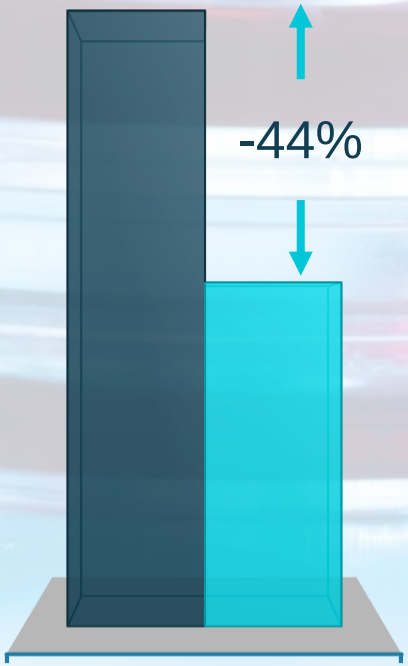


- Gestión del paciente (inclusión / exclusión)
- Control de la adherencia del paciente al tratamiento
- Monitoramiento del paciente
- Gestión de alertas clínicos
- Visualizacion de las informaciones
- Customización del programa
- Servicio de mensajería al paciente
- Video Conferencia
- Definición del Programa (dosis y horario)
- Monitorizacion de adherencia y compliance

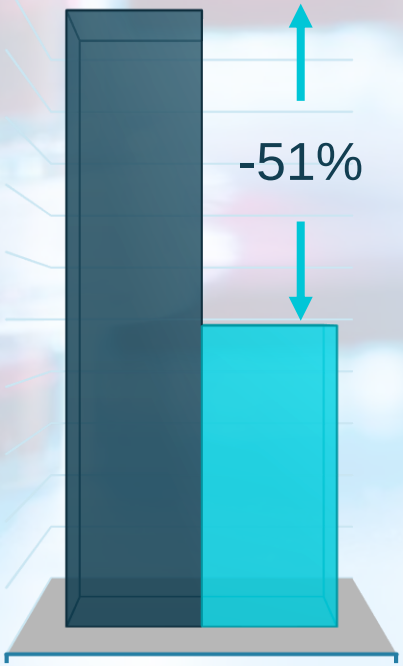


Resultados PROYECTO Valcronic (Comunidad Valenciana)

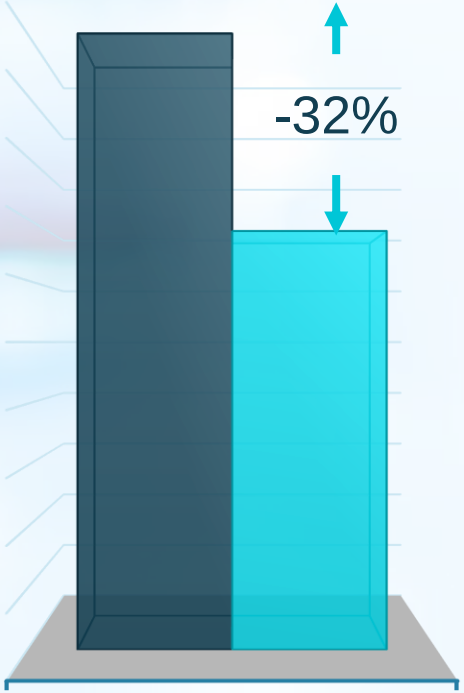
- Más de 500 pacientes
- Pluripatológicos de alto riesgo
- 2 años de pilotaje
- Evaluación pre-post
- Gestionados desde AP



PACIENTES NO CONTROLADOS

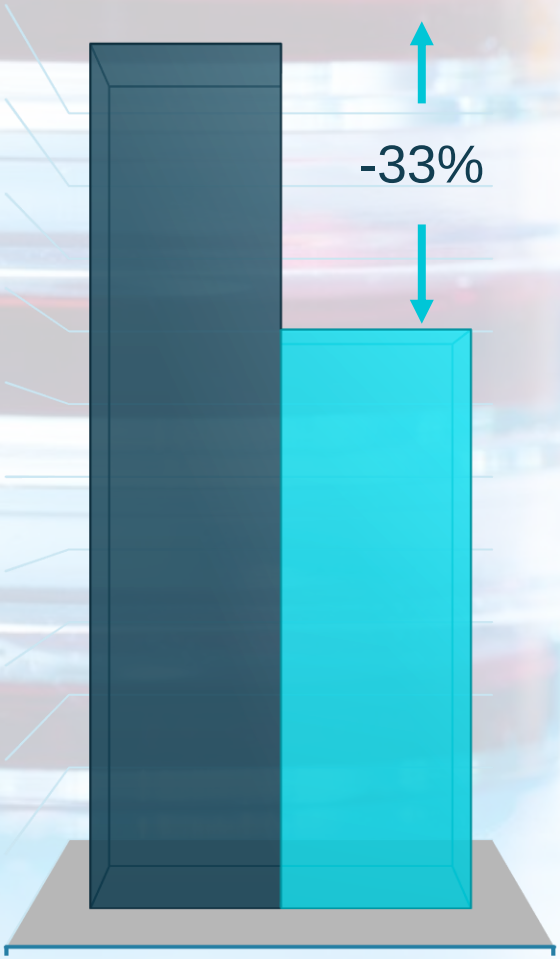


URGENCIAS PRIMARIA

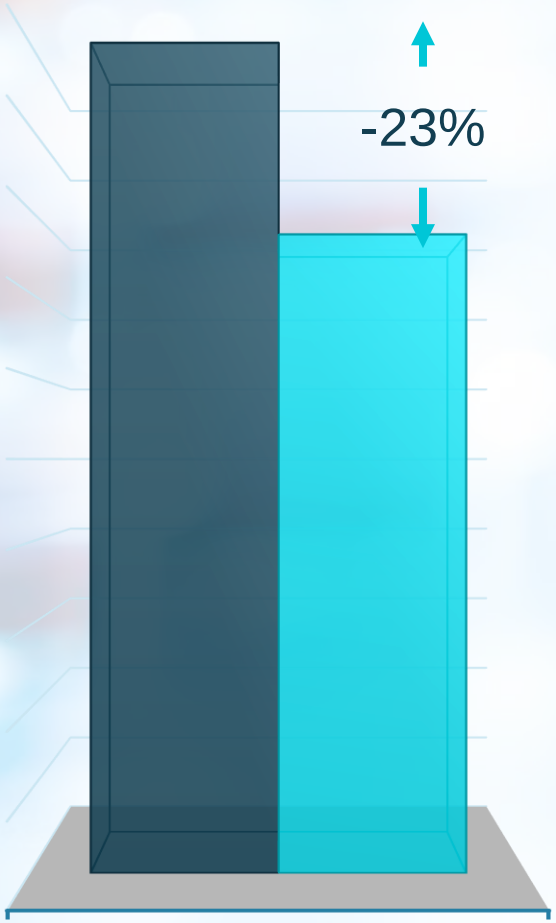


URGENCIAS HOSPITALARIAS

Resultados PROYECTO Valcronic (Comunidad Valenciana)



INGRESOS HOSPITALARIOS



INGRESOS POR DESCOMPENSACIÓN

Conclusiones

- La opinión del paciente es excelente. El uso de los dispositivos de telemedicina en personas mayores es adecuado. La visión de los profesionales es positiva.

- Se mejoró el grado de control del peso, la presión arterial y la diabetes. Se redujeron un 51.9% las urgencias en AP y un 32,3 % en el Hospital.

- Se redujeron un 33.2% los ingresos por causa urgente y un 23,8% los ingresos por descompensación de las patologías de Valcronic.


NO HAY EXCUSAS
PONGÁMONOS EN MARCHA


Telefónica