HIT and Mobility: How Technology is Changing the Way we Work

CIO SUMMIT Hi mss Europe
Roma October 6th

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About us
Global Burden of hypertension

- hypertension is responsible for most of the disease burden in the world
- the prevalence of hypertension is increasing, and in particular patients with uncontrolled pressure values
- 54% of strokes and 47% of coronary heart disease are attributable to hypertension
- 7.6 million deaths / year (13.5% of total mortality) attributable to hypertension
- 6.3 million years of disability (4.4% of total) 1.3

1. From “Global Burden of Disease study, updated in 2008”
Reduction in the incidence of coronary events and stroke with a reduction in SBP of 10 mmHg and DBP of 5 mmHg

Law, MR et al. BMJ 2009; 338: b1665
Survival in treated Hypertension: follow up studies after two decades

N = 686
BP at start up: 185/114 mmHg
BP at the end: 145/80 mmHg
Follow up : 22 yrs
Prototypical management of the chronic patient

Hypertensive Patient

- General Practitioner
- Outpatient Clinic Specialist
- Specialist Cardiologist
- Hospital
- Informal referent
- Autoreference (Internet, non specialised journals)
Prototypical management of the chronic patient

Campania Salute Network

- General Practitioner
- Outpatient Clinic Specialist
- Hypertensive Patient
- Hospital
- Informal referent
- Cardiologist
- Autoreference (Internet, non specialised journals)
Physical architecture of the network: The Campania Salute @ Federico II University, Napoli. Scaled up @ AOU San Giovanni e Ruggi, Salerno University.
PAZIENTE: A N

ECOCAROTIDI - 15/02/2005

Ultima esecuzione 15/02/2005 15.39.45 nel centro n.

Data 15/02/2005

SEZIONE IMMAGINI

[Ultrasound image]

Spazio per Documento

Sequenze video

Lista Filmati: Visualizza Filmato
The use of a telematic connection for the follow-up of hypertensive patients improves the cardiovascular prognosis
Nicola De Luca\textsuperscript{a}, Raffaele Izzo\textsuperscript{a}, Guido Iaccarino\textsuperscript{a}, Pier Luigi Malini\textsuperscript{b}, Carmine Morisco\textsuperscript{a}, Francesco Rozza\textsuperscript{a}, Gianni Luigi Iovino\textsuperscript{a}, Maria Assunta Elena Rao\textsuperscript{a}, Clara Bodenizza\textsuperscript{a}, Francesca Lanni\textsuperscript{a}, Luigi Guerrera\textsuperscript{a}, Oreste Arcucci\textsuperscript{c} and Bruno Trimarco\textsuperscript{a,c}

\textbf{Background} Inadequate blood pressure (BP) control could be due to incorrect management of hypertensives caused by the lack of interaction between general practitioners (GP) and hypertension specialists.

\textbf{Objectives} To test the effectiveness on BP and total cardiovascular risk (TCVR) control of an internet-based digital network connecting specialists and GPs.

\textbf{Methods} We created a network among the Hypertension Clinic, Federico II University (Naples, Italy), 23 hospital-based hypertension clinics and 60 GPs from the area (CampaniaSalute Network, CS). Randomized GPs enrolled in CS could update online records of patients \((n = 1979)\). As a control, we included 2045 patients referred to the specialist clinics by GPs from outside the network. All patients completed a 2-year follow-up.

\textbf{Results} CS provided a larger reduction in BP \((\text{systolic/diastolic BP (SBP/DBP): } 7.3 \pm 0.4/5.4 \pm 0.3 \text{ versus } 4.1 \pm 0.4/3.1 \pm 0.26 \text{ mmHg, CS versus control; } P < 0.001 \text{ for both})\) and percentage of patients with BP < 140/90 mmHg \((\text{CS versus control: baseline, } 33 \text{ versus } 34\%, \text{ NS; end of follow-up, } 51 \text{ versus } 47\%, \chi^2 = 13.371; \ P < 0.001)\). A European Society of Hypertension–European Society of Cardiology (ESH/ESC) TCVR score was calculated \(\text{[from } 1 \text{ (average) to } 5 \text{ (very high TCVR)]}\). The CS group showed a reduction in the mean TCVR score \((\text{CS: from } 3.5 \pm 0.02 \text{ to } 3.2 \pm 0, \ P < 0.01, \ ANOVA; \text{control group: } 3.5 \pm 0.03 \text{ to } 3.4 \pm 0.03, \ NS)\) and, accordingly, fatal and non-fatal major cardiovascular events (MACE) were less frequent \((2.9 \text{ versus } 4.3\%; \chi^2 = 5.047, \ P < 0.02)\). CS predicts fewer MACE in multiple binary regression analysis \((3: -7.27, \ P < 0.008)\) reducing the risk for MACE compared to control \((\text{odds ratio (OR): } 0.838; 95\% \text{ confidence interval (CI): } 0.73-0.96)\).

\textbf{Conclusion} Our results support the idea that telemedicine can achieve better control of BP and TCVR. \textit{J Hypertens} 23:1417–1423 © 2005 Lippincott Williams & Wilkins.

\textit{Journal of Hypertension} 2005, 23:1417–1423

Keywords: hypertension, therapy, hospitalization, telemedicine

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Blood Pressure Control

Office

Home

Campania Salute Follow-up

Traditional Follow-up

Campania Salute Follow-up

Traditional Follow-up

- >160/95
- ≥140/90 ≤160/95
- <140/90

Follow-up (%)
Event Free Survival

Follow-up Campania Salute

Follow-up tradizionale

RR: 0.548 da 0.35 a 0.86, W: 6.694, p<0.01
Inserire pressione

120/70

Paziente

SMS

Invio valori rilevati autonomamente dal Paziente a domicilio

Ricezione dei dati via SMS

Invio di un SMS di ritorno a conferma della ricezione

Validazione del dato

Analisi del dato

Eventuale SMS c/o e-mail di allarme

Inserimento nella rete CampaniaSalute

Rete CampaniaSalute
GUIDA SINTETICA ALL’INVIO DEI MESSAGGI SMS
al network CAMPANIASALUTE

MISURE COMUNICABILI via SMS

<table>
<thead>
<tr>
<th>Misura</th>
<th>Simbolo</th>
<th>Esempio</th>
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<tbody>
<tr>
<td>PRESSIONE</td>
<td>P</td>
<td>p 120 80</td>
</tr>
<tr>
<td>COLESTEROLE</td>
<td>C</td>
<td>c 220</td>
</tr>
<tr>
<td>KG PESO</td>
<td>K</td>
<td>k 82</td>
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<tr>
<td>GLICEMIA</td>
<td>G</td>
<td>g 110</td>
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<tr>
<td>FUMO</td>
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</tbody>
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ESEMPI DI MESSAGGI

Per trasmettere Pressione 120 80, Glicemia 110, Colesterolo 220:

P 120 80 g 110 c 220

Per trasmettere Colesterolo 180, Pressione 130 75, Fumo Sì:

c 180 p 130 75 f s

Per trasmettere Glicemia 110:

g 110

NUMERO di CELLULARE a cui inviare il messaggio SMS:

+39 389 4007007

Per qualunque informazione, contattare il Centro di Riferimento allo 081 – 7462211
94% regularly sent TXT and 3% made errors that did not compromise the interpretation of data.

No response (3%)

Sending a remind resulted in a response in 98% of cases.

In 18% of cases patients were re-scheduled, based on the alarms received.
Blood Pressure Control

Traditional

Campania Salute
(Centro Specialistico – MMG)

Campania Salute
(Centro Specialistico – MMG – TXT)
Beyond Silos: Project mission

Beyond Silos will spread ICT-enabled, joint-up health and social care for older people by developing, piloting and evaluating integrated services based on common pathways in a multi-centric approach, making extensive use of knowledge and experience gained among early adopters of integrated eCare in Europe.
BeyondSilos is ambitious
BeyondSilos is ambitious

It mobilises all the players involved in elderly care

**BeyondSilos integrated service models**
- collaborative
- safety enhancing
- efficient
- inclusive
- responsive
- empowering

**BeyondSilos integrated pathways**
- Integrated data access
- Coordination
- Real-time communication
- Joint response

**ICT integration infrastructure building blocks**
- Access to homebased systems: Telemonitoring/Telecare

**BeyondSilos**

**Social care**
- Cared for person
- Self-care

**Health care**
- Informal/family carer
European Project
PERSSILAA:
(PERsonalised ICT Supported Service for Independent by Living and Active Ageing)

Design and Activities

ICT – FP7-610 359 research project
PERSSILAA
CORE STRUCTURE

- AIM: screening & prevention of frailty and pre-frailty

- Shift from a reactive management of diseases to a proactive approach focused on prevention, health promotion and personalized intervention.

PERSSILAA aims to develop and validate a new service model to screen for, and prevent frailty and functional decline in community dwelling adults. We will focus on the cognitive, nutritional, and physical domain. PERSSILAA service model uses internet technology whenever possible during the screening and prevention of frailty and functional decline.