DIGITAL HEALTH SCENARIO IN ITALY

PROF. SERGIO PILLON

Ph.:+39 335 660 4240

Twitter: sergiopi

Skype: sergio.pillon

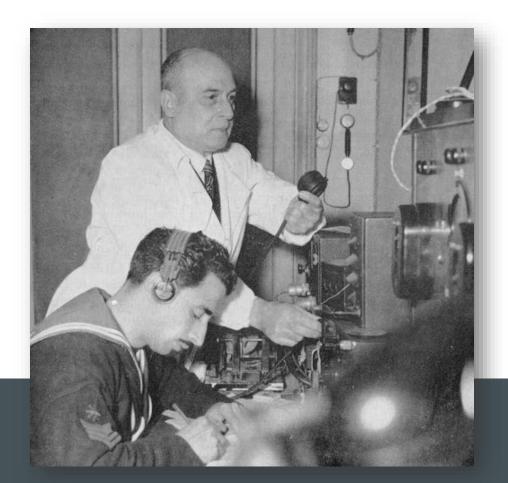
LinkedIn: www.linkedin.com/in/pillon

IAM...

- MD specialist in Vascular Medicine, II level University Master degree in eHealth, working at San Camillo Hospital in Rome
- Member of EPHA, Digital Health WG, European Public Health Alliance
- Past Vice President of the Board and now Medical director of CIRM, the oldest and biggest Telemedicine Maritime Center in the World
- Director of Telemedicine Unit of San Camillo-Forlanini Hospital for 10 years
- Co author of Italian National Telemedicine Guidelines, appointed from Ministry of Health as National coordinator of Telemedicine guidelines governance committee, from 2015 to 2019
- Associate Researcher of Italian National Research Council (CNR ICAR)



RADIOMEDICINE AGE





Circulare allegata al Foglio d'Ordini n. 16 del 16 febbraio 1935-XIII.

Roma, addl 8 febbraio 1935-XIII.

Ministero delle Comunicazioni

DIREZIONE GENERALE DELLA MARINA MERCANTILE

> Divisione I:* - Sez. II* Prot. N. 1970

DIREZIONE GENERALE
DELLE POSTE E DEI TELEGRAFI
Ispettorato Generale del Traffico Telegrafico
e Radiotelegrafico — Div. IIⁿ Radio

- Ai Comandi delle RR, Capitanerie di porto;
- At Comandi delle Navi Mercantili nazionali munite di R. T., sprovviste di medico, e per vonoscenza.
- Alla Direzione del Centro di Coltano Radio (Pisa).
- Alla Società Italiana Radio Marittima Roma,

OGGETTO: Centro internazionale di radiocomunicazioni mediche.

È stato organizzato un servizio di consultazioni radiomediche facente capo al "Centro Internazionale di radio-comunicazioni mediche, (C.I.R.M.) con sede in Roma, Via Torino 122.

Scopo del C.I.R.M. è quello di forniro ai Comandi delle navi mercantili sprovviste di medico, consigli e indicazioni di carattere sanitario, che potranno essere richiesto in caso di malattie od infortuni occorsi a persone imbarcate sulle navi stesse.

L'istituzione del servizio di cui trattasi è intesa ad integrare e non già a sostituire l'opera che, con risultati sotto ogni aspetto lodevoli, è stata finora prestata da medici di navi richiesti di consiglio da navi sprovviste di sanitario.

I Comandi di bordo che intendessero avvalorsi dell'opera del Centro radio-medico, potranno usare il Codice internazionale dei Segnali - Ediz. 1931 (Volume II Radio - parte V - capitolo medico-sanitario) entrato in vigore il 1 gennaio 1934.

Qualora i segnali del Codice non fossero ritenuti sufficienti per fornire con ogni esattezza al "Contro, le necessarie notizie, i Comandi delle navi potranno anche compilare "in chiaro, i marconigrammi relativi. I marconigrammi in linguaggio chiaro concernenti richieste di consigli medici da parte di navi estere potranno essere redatti in italiano oppure in francese od inglese.

Dovrà, in ogni caso, essere indicato anche il tipo di cassetta medicinale di cui la nave è munita.

Il "Centro, risponderà usando il Codice dei segnali, oppure, se necessario, "in chiaro...

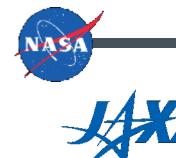
I marconigrammi provenienti o diretti a navi nazionali sono esenti dal pagamento delle tasse radiotelegrafiche e telegrafiche.

Sono pure esenti da tale pagamento i messaggi medici provenienti o diretti a navi estere appartenenti ai seguenti Paesi che hanno apposita organizzazione radiomedica e forniscono gratuitamente consigli medici alle navi di qualsiasi nazionalità: Australia, Belgio, Danimarca, Finlandia, Guatemala, Honduras, Nicaragua, Norvegia, Paesi Bassi, Panama, Stati Uniti d'America, Svezia.

TELEMEDICINE AGE











Antarctic Stations can be used as space analog environments. These stations offer remote locations in extreme environments, and the environment encountered at each station is somewhat unique. Stations have been used for telemedicine research for more than 40 years. The mission control studies allow for group and multi-cultural experiences. The Scientific Committee on Antarctic Research (SCAR) is committed to helping investigators utilize all the available Antarctic stations. They assist in the coordination of research between various collaborators.

By coordinating multiple studies, it allows several individual projects with small sample sizes to be combined for a larger study set. Each of the sites has distinct features. McMurdo station is the largest location. The European station, Concordia, is a year-round research station at a high elevation and is one of the coldest places on Earth. The SCAR website, www.scar.org, contains more information about these analogs.

P	а	n	el	5

Oliver Angerer, European Space Agency Barbara Corbin, NASA JSC

Roni Cr<mark>om</mark>well, USRA Division of Space Life Sciences

Dennis Grounds, NASA JSC

Pascal Lee, Mars Institute

Sergio Pillon, San Camillo-Forlanini Hospital

Igor Savalev, National Space Biomedical Research

Institute

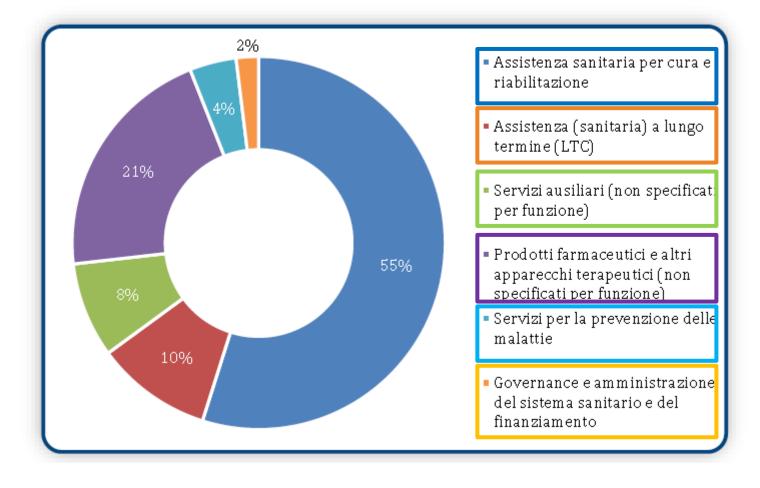
Bill Todd, USRA Division of Space Life Sciences

International Collaboration on Analog Utilization Workshop Organizing Committee

Barbara Corbin	NASA
Christian Otto	USRA
Lauren Leveton	NASA
Ronita Cromwell	USRA
Kathryn Keeton	Wyle
Oliver Anger	ESA

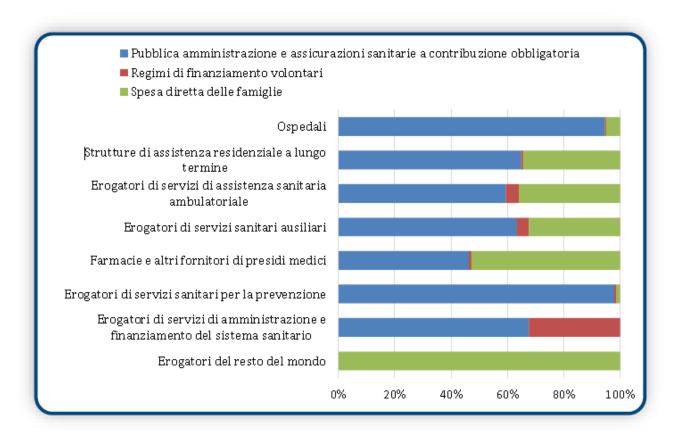
DRIVING FORCES...

SPENDING 2016...



According to ISTAT-SHA data, health care for treatment and rehabilitation absorbs € 82,032 billion, pharmaceuticals and other therapeutic appliances € 31,106 billion, the long-term care € 15,067 billion, ancillary services € 12,342 billion, services for the prevention of sicknesses € 6,057 million, while € 2,896 go to governance and administration of the NHS

SPENDING 2016, WHO AND WHERE..



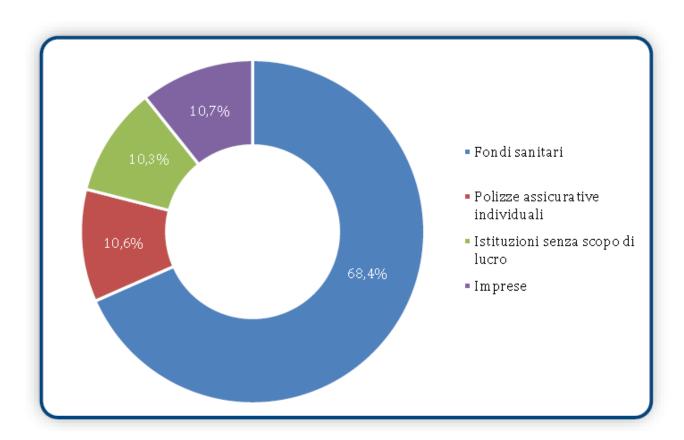
Direct Household expenditure 2016, € 39,830 billion, from a maximum of € 859 per person in the Aosta Valley to a minimum of € 303 in the Campania, compared to a national average of € 560

- From patients
- NHS
- Professional funds

INSURANCE...

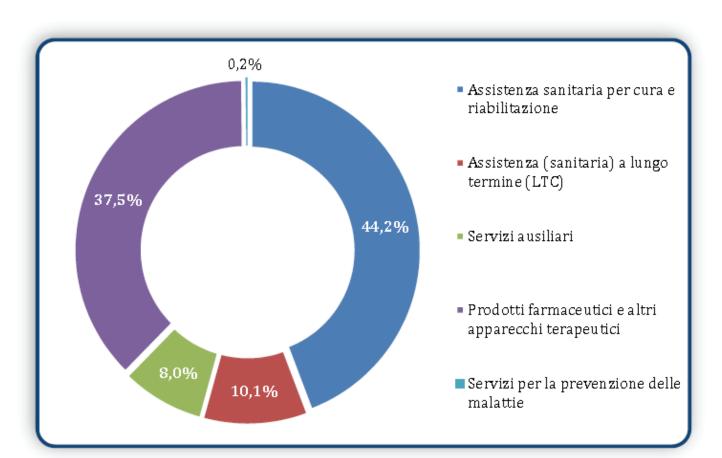
According to ANIA, around 1.7 million Italian families are covered by private insurance, to which are added about 3 million people who join supplementary funds (we call "integrative"). In 2016 the money collected for insurance policies relating to the health sector (damages + life) amounted to € 2,493 billion, of which € 593 million for individual policies and € 1,900 billion for collective ones which, as already stated, are estimated to be entirely intended for the "reinsurance" of healthcare funds.

INSURANCE (INTERMEDIATE EXPENSE)



Intermediate expense of € 5,601billion (12.3% of private expenditure), supported by various types of "paying third parties" € 3,831 billion from healthcare funds and collective policies, € 593 million from individual insurance, € 576 million from non-profit institutions and € 601 million from company's funds.

OUT OF POCKET..



Direct Household expenditure 2016, € 39,830 billion

health care for treatment and rehabilitation, pharmaceuticals and other therapeutic appliances,

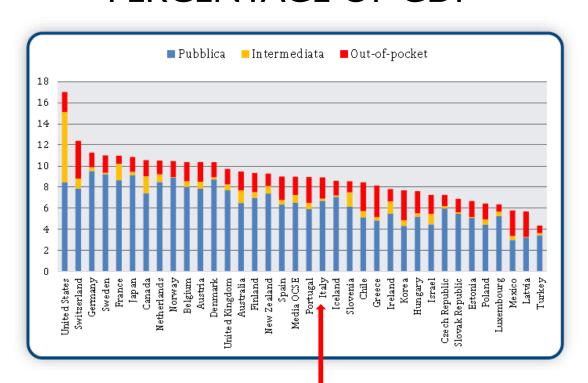
the long-term care,

ancillary services,

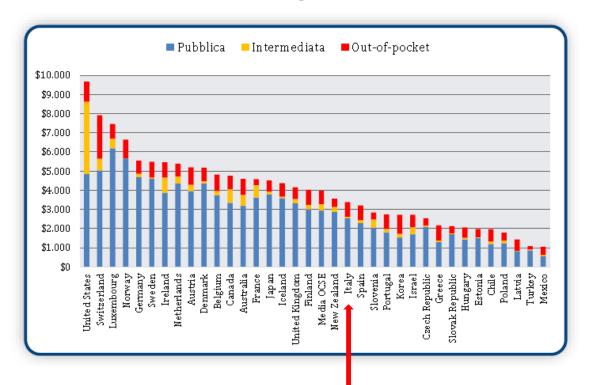
services for the prevention of sicknesses

COMPARISON:

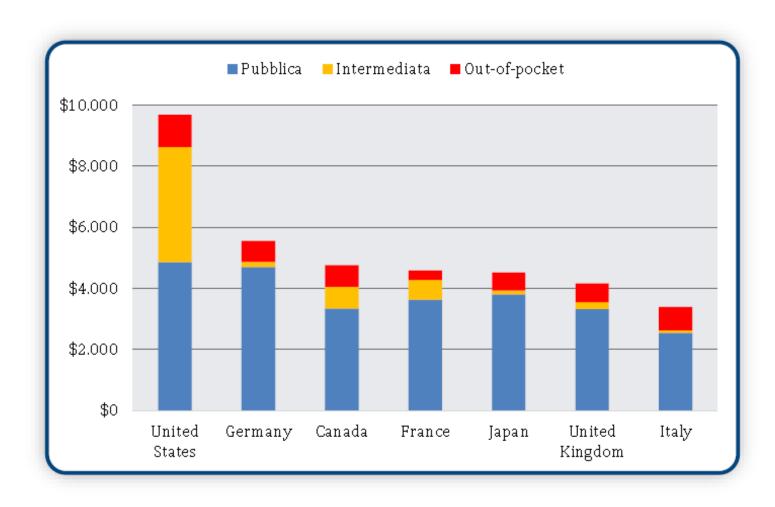
PERCENTAGE OF GDP



VALUE



G7 COMPARISON



FARMACIA DEI SERVIZI 2020

- (Regioni.it 3706 21/10/2019) On 17 October the State-Regions Agreement on "Guidelines for testing new services in the community pharmacy" was ratified.
- The provision for pharmacies to provide new health services to citizens was born with Law no. 69 of 18 June 2009, containing provisions for economic development in different strategic sectors for the economy and commerce. Within this Law, specifically in article 11, the regulation for the definition of a new model of Pharmacy of Services has been defined. But only with the enactment of Legislative Decree 153 of 2009, the Government defined the "new tasks and assistance functions of the Pharmacies". The services identified by the decree do not differ from those established by Law 69/2009, however, going to integrate their definition and adding some important elements.
- The new services insured by Pharmacies within the National Health Service they concern, inter alia:
- a) the collaboration of Pharmacies in initiatives aimed at guaranteeing the correct use of the prescribed medicines and their monitoring, promoting the patient's adherence to medical therapies, also through participation in specific pharmacovigilance;
- b) the provision of first level services, through which the Pharmacies participate in the implementation of health education programs and prevention campaigns for the main diseases with a strong social impact, aimed at the general population and at risk groups and implemented at national level and regional, using modalities of information appropriate to the type of facility and, where necessary, after training the pharmacists who work there;
- c) the provision of second-level services aimed at individual patients, in accordance with the Diagnostic and Therapeutic Guidelines and Paths provided for the specific pathologies, on the prescription of general practitioners and free-choice pediatricians, also using staff nursing, also providing for the inclusion of Pharmacies among the points equipped with semiautomatic defibrillators;
- d) carrying out, at the Pharmacies, within the second level services referred to in letter c), first instance analytical services falling within the scope of self-control, within the limits and under the conditions established by decree of a non-nature nature regulations of the Minister of Labor, Health and Social Policies, in agreement with the Permanent Conference for relations between the State, the Regions and the Autonomous Provinces of Trento and Bolzano, while in any case excluding the prescription and diagnosis, as well as taking blood or plasma using syringes or equivalent devices



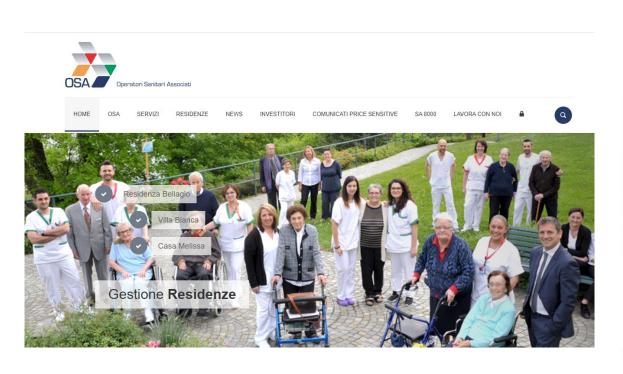


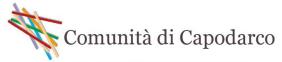


First level diagnostics by the family doctor. Here's how it will work and how the 235 million will be divided

For family doctors who work alone in their own office (about 13 thousand) the financial endowment for the purchase of diagnostic devices will be 10.000 euros while for the aggregate studies (about 8.000) of family doctors (more than 32.000 professionals) will have a financial endowment of 12 thousand euros. Here is what the technical report attached to the Budget Law provides.

HOME CARE... CHURCH SERVICES AND COOPERATIVE SERVICES







I.R.C.S.S. a scientific hospitalization and care institute (IRCCS) is a hospital of excellence that pursues research purposes, mainly clinical and translational, in the biomedical field and in the organization and management of health services.





LAVORATORI DOMESTICI IN ITALIA

864.526

Lavoratori domestici regolari (INPS, 2017)

> COLF 54,4% **BADANTI 45,6%**

MASCHI 11,7% **FEMMINE 88,3%**

STRANIERI 73,1% ITALIANI 26,9% **PROVENIENZA**

43,8% Est Europa

26.9% Italia

5.8% Africa

0,4% Europa Ovest

LA SPESA DELLE FAMIGLIE

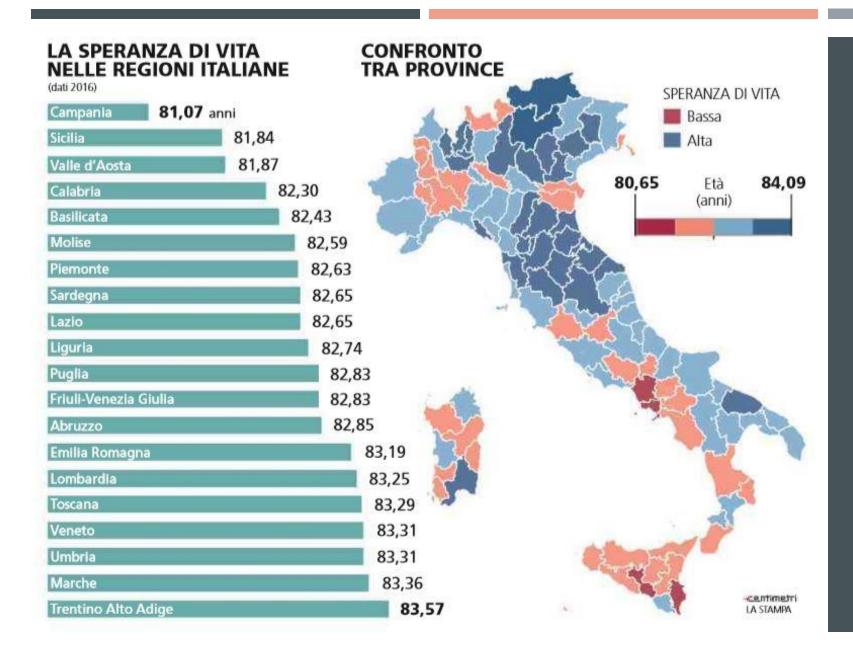


√ 5,6 MLD € RETRIBUZIONE

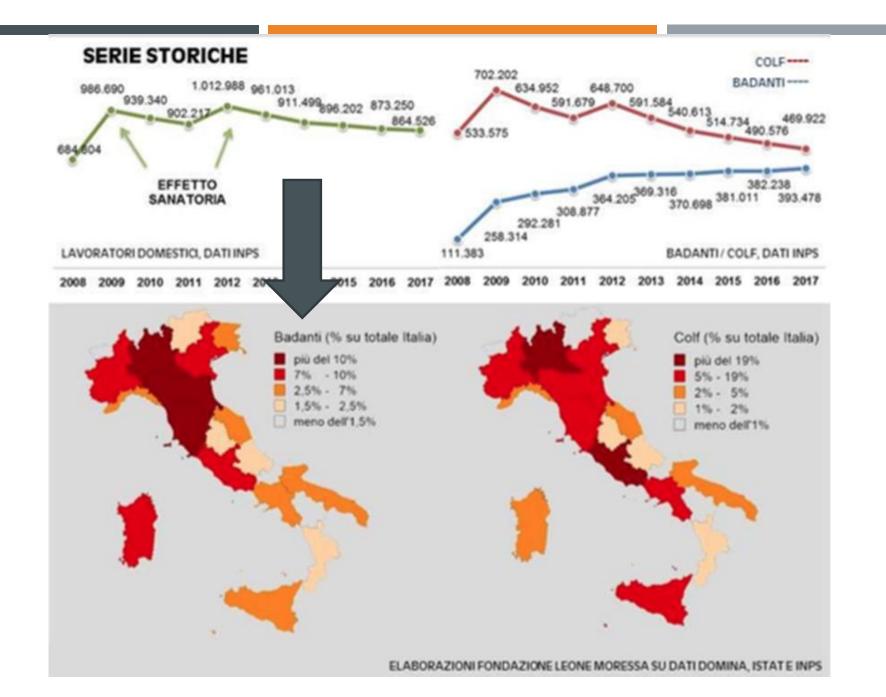
0,9 MLD € CONTRIBUTI TOTALI

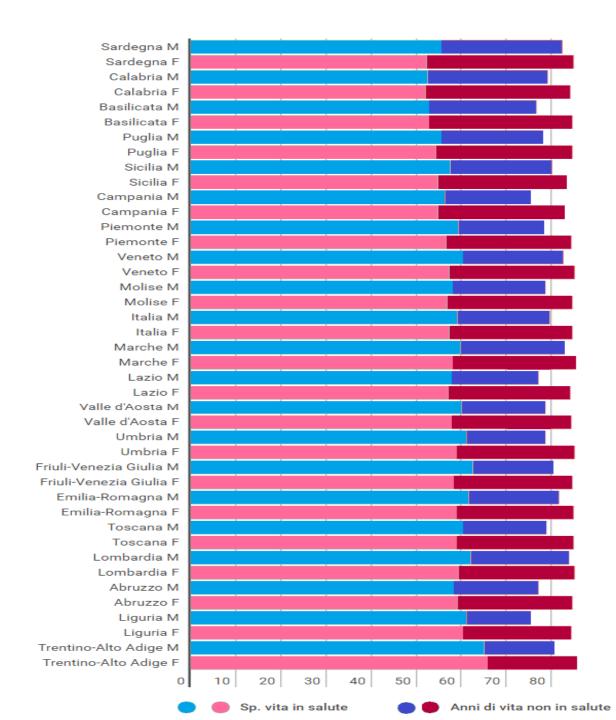
0,4 MLD € TFR

6,9 MLD € COSTO PER LE **FAMIGLIE**



LIFE EXPECTANCY IN ITALY





A MALE LIVES IN HEALTH ONLY 59.2 YEARS, A WOMAN 57.3. LESS THAN THE EUROPEAN AVERAGE

The good news is that the life expectancy of Italians at birth is 80.3 years for men (the highest in Europe) and 84.62 years for women, only lower than the Spanish, 86.1 years, and French (85.6 years).

THE BAD NEWS ...

The bad news is that life expectancy in good health, i.e. the number of years a person can expect to live before becoming chronically ill or disabled, in Italy, is 59.2 years for men and 57.3 years for women. They are lower than the European average of 61.4 years for men and 61.5 years for women.

This means that the average European can expect to live healty 79% of his life if is a man and 74% if is a woman. For Italians these percentages are 74.1% for men and 67.1% for women

SUMMARY OF DRIVING FORCES AND DIGITAL HEALTH OPPORTUNITIES

- Sistema Sanitario Nazionale (NHS) for all, lowering expenses
- Insurance (professional funds, private) expenditures low, but they are moving toward digital health to improve their services.
- Out of pocket expenditures high (elderly)
- Out of hospital expenditures high (wellness)
- Elderly expenditures are growing fast
- Old and sick with non professional caregivers
- Pharmacy and GPs are moving

NATIONAL PARTNER



Istituto Superiore di Sanità (NIH)

From Art. 1

The Istituto Superiore di Sanità is a technicalscientific body of the National Health Service and pursues the protection of public health, in particular through the performance of research, control, consultancy, regulation and training functions.





WHAT AND WHO

laboratory

Notified body

Departments

Cardiovascular, dysmetabolic and ageing-associated diseases Environment and health

Food safety, nutrition and veterinary public health

Infectious diseases

Neurosciences

Oncology and molecular medicine

Reference Centres

Behavioural sciences and mental health Gender medicine

Technical-scientific services

Biological Service

FAST Core facilities

Grant office and technology transfer
Research coordination and support
Statistics

National Centres

Addiction and doping
Animal research and welfare
Chemicals, cosmetics and consumer protection
Clinical excellence, healthcare quality and safety
Control and evaluation of medicines
Drug research and evaluation

Drug research and evaluation
Global health

Health technology assessment HIV/AIDS research

TISP Innovative technologies in public health

PRORA Radiation protection and computational physics

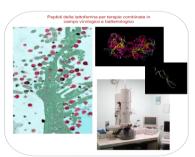
Hare diseases

Telemedicine and new health care technologies

Blood Transplants



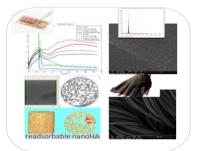
TECNOLOGIE INNOVATIVE IN SANITA' PUBBLICA



Terapie innovative



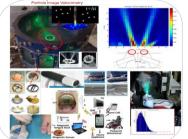




Nanotecnologie



Dispositivi medici



Ingegneria Biomedica





TISP SCIENTIFIC RESPONSIBLE IN EU-FUNDED PROJECTS

- Smart-PIV, "Development Of An Interactive Integrated P.I.V. System Based On Miniaturised Optical Sensor Technology For Implantable Biomedical Devices Design" (Project ID: IST-2001-37548, Funded under: FP5-IST), http://cordis.europa.eu/project/rcn/63039 en.html
- Coherent, "Collaborative Holographic Environments for Networked Tasks" (Project ID: 510166, Funded under: <u>FP6-IS</u>T), http://cordis.europa.eu/project/rcn/71166_en.html
- HelloDoc, "Healthcare service linking tele-rehabilitation to disabled people and clinicians". Funded under European Community programme eTEN (2005-2007)
- CLEAR, "Clinical Leading Environment for the Assessment and validation of Rehabilitation Protocols for home care" (Project ID: 224985, Funded under: <u>CIP</u>)
 http://cordis.europa.eu/project/rcn/191697 en.html (HTA)
- MindWalker (Project ID: 247959, Funded under: FP7-ICT FP7) (Exoscheleton in Rehab) http://cordis.europa.eu/project/rcn/93837 en.html
- MEDDICA, "Medical Devices Design in Cardiovascular Applications" (Project ID: 238113, Funded under: FP7-PEOPLE), FP7-PEOPLE-ITN-2008 Marie Curie Action: "Networks for Initial Training" http://cordis.europa.eu/project/rcn/92473 en.html
- **OPERRA**, "Open Project for the European Radiation Research Area" (Project ID: 604984, Funded under: FP7-EURATOM-FISSION http://cordis.europa.eu/project/rcn/109481_en.html 2016-2018
- "CONCERT-European Joint Programme for the Integration of Radiation Protection Research" (Funded under: Horizon 2020), http://www.concert-h2020.eu/ 2017-2020
- **EUCLID** European Society of Radiology European Study on Clinical Diagnostic Reference Levels for X-ray Medical Imaging. Il progetto della Commissione europea della durata di 33 mesi EUCLID fornirà DRL clinici aggiornati per le attività di imaging radiografico più importanti, dal punto di vista radiologico, in Europa.
- ICPerMed (International Consortium on Personalised Medicine), www.icpermed.eu, progetto FP7 EU "PerMed«, Partecipazione all'Action Item Group 2 (AIG 2) "Data and ICT -Improving Health Care" di ICPerMed 2019
- piattaforma EURAMED, Consortium In Medical Radiology, 2019
- INFN-EIC-NET / eRD14 (PID Consortium), DOE Contract, Iniziative Electro Ion Collider, Brookhaven Science Associates, LLC (USA) 2019
- INFN-JLab12 Thomas Jefferson National Laboratory / Virginia / USA Sviluppo apparati di rivelazione radiazione ionizzante 2019



NATIONAL STARTING PROJECTS

- **BD4Life**: BigData4LifeScience: una soluzione integrata per le Scienze della Vita applicata al miglioramento diagnostico del tumore al seno; (*Project Consulting s.r.l.- ISS*) POR FESR 2014-2020 Bando Life2020 Regione Lazio
- **BD4NanoT:** BigData4NanoTechnology: una soluzione BigData per l'analisi integrata dei dati provenienti da microscopia dal nano al micro. (*Project Consulting s.r.l.- ISS*) POR FESR Lazio 2014-2020 KETs TECNOLOGIE ABILITANTI
- ASI Biomedicina: Approccio Multidisciplinare per l'ottimizzazione e il Monitoraggio delle Terapie nello Spazio Bando di Ricerca per Missioni Future di Esplorazione Umana dello Spazio Area Tematica Biomedicina
- (Project Consulting s.r.l.- Centro Fermi ISS)
- XAIBrain- Explainable Artificial Intelligence applied to Brain Research (Project Consulting s.r.l.- Centro Fermi ISS)





- "Instruments and methods for the functional evaluation of the hand in transplantation of retrieved organ from cadaver". 2001-2003. Project funded by Ministry of Health.
- "e.R.ME.TE. Regions for Telematic Medicine. Inter-regional reference models for products and services of Telemedicine". 2003-2004. Project funded by Ministry of Health.
- "Tele-ecocardiography over the Italian territory: study on feasibility, diagnostical accuracy and cost/effectiveness rate". 2005. Project funded by Ministry of Health. Partnership with IRCCS S. Maugeri Foundation and ISS Operative Unit for Technology Innovation.
- "Treatment of persons with Parkinson's disease: the integration of diagnostical, evaluative and terapeutical issues for the optimization of global rehabilitative effectiveness". 2005-2006. Project funded by Ministry of Health. Partnership with IRCCS S. Maugeri Foundation and ISS Operative Unit for Technology Innovation.
- "Environmental neurotoxicity and risk of Parkinson's Disease" 2007. Project funded by Italian MoH.
 Partnership with IRCCS S. Maugeri Foundation and ISS Operative Unit for Technology Innovation.
- "Strategies for intervention and prevention in populations with cardiovascular high risk". 2007-2008. Funded by Italian MoH. Partnership with IRCCS S. Maugeri Foundation and ISS Operative Unit for Technology Innovation.



TISP SCIENTIFIC RESPONSIBLE IN NATIONAL PROJECTS

- Project "Modelli di gestione delle tecnologie sanitarie orientati alla sicurezza" relative to the Strategic Program "Sicurezza e tecnologie sanitarie" (Call "Attività di ricerca finalizzata in materia di tutela della salute nei luoghi di lavoro", funded by Italian MoH, Bando del Ministero della Salute Finalizzato 2008).
- "Homecare model for patients with respiratory failure in OLT or Home Mechanical Ventilation". 2010-2013. Funded by the Italian Ministry of Health with special resources by Italian Law 289/2002.
- "High-end and Low-End Virtual Reality Systems for the Evaluation, Training and Rehabilitation of Frailty in the Elderly" (funded by Italian MoH, Bando del Ministero della Salute Finalizzato 2013).
- Progetto Italia USA Accordo ISS NIH "Methodology for Setting up CHRONIC CARE MODELS for the territorial care of cancer and stroke survivors" (ISS AUSL Empoli NIH Maryland USA)
- **ROBOVIR** "Development and validation of a robotic platform for motor rehabilitation and visuomotor coordination of the upper limbs with virtual reality scenarios related to daily life activities", funded by INAIL, Bando BRIC 2016.
- TELEMECRON "Valutazione delle strategie di implementazione delle innovazioni digitali per la continuità delle cure" (ISS TISP Regione Lombardia, Regione Toscana, Regione Friuli Venezia Giulia) Progetto di Rete del Ministero della Salute 2019
- OSSERVATORIO SaMD "Convenzione Ministero della Salute per la ricognizione dei Software Dispositivo Medico e non" 2019

SOFTWARE AS MEDICAL DEVICE OBSERVATORY WITH MINISTRY OF HEALTH



- APP as Medical Device
- Aritificial Intelligence Software (not always medical devices)
- Digital Therapy (App, according to MDR)
- Robot Surgery
- Cyber Security
- • • •



Contacts:

Mauro Grigioni, TISP Director

mauro.grigioni@iss.it

SCIENTIFIC SOCIETIES AS PARTNERS...



Founding Members of ASSD

Associazione Italiana Amministratori di Sistema e Telemedicina









Fernando Capuano



Coordinamento Nazionale Associazioni Professioni Sanitarie

Co.N.A.P.S.



In 2018 they joined:

•ANTEL, Associazione Italiana Tecnici Sanitari di Laboratorio Biomedico •AISIS, Associazione Italiana Sistemi Informativi in Sanità.



The Scientific Association for Digital Health **ASSD** was established in a multiprofessional and multidisciplinary context, having among its founding members the Executive Nurses Committee, the National Coordination of Associations of Health Professions, the National Federation of Professional Medical Technical Colleges of Medical Radiology, the Italian Association of Biomedical Laboratory Health Technicians, and the Italian Association of Health Information Systems.

Working in a multi-professional association context aimed at developing digital skills - in particular after the Lorenzin law on the reform of professional orders - is a great opportunity for all healthcare professions for membership and professional growth.



One of the main objectives of **ASSD** is to promote the culture of e-health, with specific training programs to be implemented both within the course of university studies and university masters, and within the Continuing Education in ECM Medicine. To this end, in carrying out its activities, the Association, in order to achieve its social aims, intends to support high quality professional training by organizing conferences, conferences, symposia, refresher courses, training courses, etc.; among other things, carrying out collaboration activities with the Ministry of Health, Regions and public health institutions for the promotion of digital innovation in Healthcare.



Contacts:

Gregorio Cosentino, ASSD President

cosentino.gregorio@gmail.com - segreteria@assd.it

www.assd.it



AiSDeT (Italian Association of Digital Health and Telemedicine) brings together an extensive national network of professionals and enthusiasts of digital innovation in Health.

The Association includes internally professionals who, transversally, within the public and private health companies and the regions themselves, face the challenges launched by the platforms and innovative solutions on a daily basis, to improve the governance of health and the efficiency and care effectiveness, because the impact of digital systems stimulates new organizational models of services, supports the appropriateness of care, allows to reduce response times, allows domiciliary processes, supports strategic choices in health and sustainability policy.



AiSDeT promotes the construction of ecosystems and digital environments, which involve all the health actors (from doctors to top management, administrative, IT engineering, up to the health and socal-health professions) - not least also the industry segment - committed to redesigning the processes of governance and care and assistance and to introduce new ways of relating between the Healthcare System and citizen / patient.

AiSDeT thus wants to accompany this process, presenting itself as a laboratory for reflection, study and proposals, which can be a reference to the entire healthcare, institutional and industrial world, with a view to promoting new skills, inter and trans-disciplinary, and to orient information on digital health and telemedicine issues in a broader, more founded and systemic way.



Contacts:

Massimo Caruso, AiSDEeT Secretary

info@aisdet.it - segreteria@aisdet.it

www.aisdet.it



THANKS!
TO DOWNLOAD
THE PRESENTATION
JUST SCAN THE QR
CODE