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PhD in Social Health Sciences
2017-2018

INVITATION to the Public defence of

Alexis VALENZUELA ESPINOZA

To obtain the academic degree of '**DOCTOR IN SOCIAL HEALTH SCIENCES**'

Telemedicine in stroke – Advancing acute and chronic care

Friday 14 September 2018

Auditorium **Piet Brouwer**, 17:00
Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

How to reach the campus Jette:
<http://www.vub.ac.be/english/infoabout/campuses>

Summary of the dissertation

Stroke is a disease with a devastating human and economic impact. In-hospital telestroke is one of the most successful applications of telemedicine. In-ambulance telemedicine has the potential to further improve the management of acute stroke patients and has proven to be feasible in a general emergency population.

We start with exploring the opinions and beliefs on in-ambulance telemedicine in 607 respondents from the general public, professional caregivers and stroke patients.

Next, we provide an overview of the multiple steps our research group has gone through to develop and implement in-ambulance telemedicine. We report on the first-ever 24/7 in-ambulance telemedicine pilot study for suspected stroke patients (PreSSUB-I study).

Until now, data about the (potential) cost-effectiveness of in-ambulance telemedicine were nonexistent. We present a cost-utility model, combining a decision tree with a lifetime Markov model. Our model suggests that in-ambulance telemedicine can be cost-effective starting from 6 minutes and becomes a dominant strategy after 15 minutes of realized time gains. By linking hospital billing information to patients of the UZ Brussel Stroke Registry we could accurately model costs for each treatment arm and perform additional analyses.

Stroke patients have a high risk of suffering from a recurrent stroke or other cardiovascular events. This makes stroke patients ideal candidates for secondary prevention using Digital Health Interventions. Our systematic review shows that there is a knowledge gap in the health economics of DHIs for secondary stroke prevention.

Curriculum Vitae

Alexis Emilio Valenzuela Espinoza was born on November the 22th 1987 in Jette, Belgium. He graduated from the Sint-Jan Berghmanscollege in 2005 and that same year he started studying at the Solvay Business School (Vrije Universiteit Brussel - VUB). During his master years he developed a passion for entrepreneurship and valorisation of research. In 2011 he graduated Cum Laude, with the thesis entitled "Analysis of valorisation in the Belgian steel industry based on IWT-projects". After his graduation and in close collaboration with Prof. Dr. Raf Brouns, he was able to secure a personal grant from Innoviris (LAUNCH), allowing him to develop and valorize in-ambulance telemedicine solutions for stroke patients. His work led among other results to the creation of a spin-off company: 'Zebra Academy'. In 2015 he started to coordinate the OPTIMUS consortium – a collaboration between Center for Neurosciences (C4N), Interuniversity Center for Health Economic Research (I-CHER) and Clinical Pharmacology and Clinical Pharmacy (KFAR) at the VUB. The mission of OPTIMUS was the further advancement of telemedicine solutions for stroke care. In 2015 he also started his PhD thesis under the guidance of Prof. Koen Putman and Prof. Dr. Raf Brouns.

Beginning May 2018 he is responsible for the creation and management of an incubator for entrepreneurial students at the VUB.