Board of examiners

Prof. dr. Ronald Cornet
Department of Medical Informatics
University of Amsterdam (the Netherlands)

Prof. dr. Pascal Coorevits
Department of Public Health
Ghent University

Prof. dr. Eline Tommelein
Department of Pharmaceutical and Pharmacological Sciences
Vrije Universiteit Brussel

Dr. Iris Steenhout
Department of Public Health
Vrije Universiteit Brussel

Prof. dr. Stephane Steurbaut
Centre for Pharmaceutical Research
Vrije Universiteit Brussel

Prof. dr. Kurt Barbé, Chair
Department of Public Health
Vrije Universiteit Brussel

Prof. dr. Ronald Buyl, Promoter
Department of Public Health
Vrije Universiteit Brussel

Prof. dr. em. Marc Nyssen, Promoter
Department of Public Health
Vrije Universiteit Brussel

Prof. dr. Pieter Cornu, Co-promoter
Centre for Pharmaceutical Research
Vrije Universiteit Brussel

VRIJE UNIVERSITEIT BRUSSEL

PhD in Medical Sciences
2019-2020

INVITATION to the Public defence of

Sven VAN LAERE

To obtain the academic degree of **'DOCTOR OF MEDICAL SCIENCES'**

An end-to-end flow analysis of the Belgian ePrescription.

The defense will take place digitally on

Monday, 22 June 2020 at 5 p.m.

via Zoom meeting, accessible through the following link:
https://gf.vub.ac.be/redirects/Doctoraat_Sven_Van_Laere_VUB.php

Summary of the dissertation

In Belgium, the electronic prescription (ePrescription) was launched in 2014 for the general public after extensive pilot testing of both the software (of prescriber and pharmacist) and the architecture. The flow of communication between patient, prescriber and pharmacist from the start was complemented with a paper proof of the electronic prescription. Soon after the national launch, voices were raised to deal with a complete dematerialization of this flow. Dematerialization of this flow means removing all paper or paper-based proofs within this flow. In this study, an evaluation was performed of errors that are currently observed within the flow. In 2018, pharmacists showed moderate satisfaction. Major hindrances that were perceived, were the unavailability of the Belgian eHealth system due to periodic breakdowns and the use of non-authentic databases between prescribers and pharmacists which lead to problems in identifying medication products. Secondly, the still accepted trail of handling a prescription as paper-based, in continuation of the former paper prescriptions, posed a certain threat. A cross-sectional study showed that in the summer of 2018, still 2.26% of the ePrescriptions were treated as the former paper-based prescriptions. Main reasons for doing so are non-compliance to the e-standard and the avoidance of the digital nature of ePrescriptions. Thirdly, still lots of incorrect interactions and state transactions are queried by the software so that a lot of calls from the software lead to unnecessary load for the system. In the final part of this study, the researcher concluded that the solution to obtain an error-free flow is to prevent errors, rather than to detect them. Incorrect digital message construction, together with the unauthentic medication database use, lead to the majority of the errors.

Curriculum Vitae

Sven Van Laere was born on October 28, 1989 in Waregem, Belgium. He graduated from the Sint-Hendriks en Zusters Maricolen Instituut (SHZMI) in Deinze in the year 2007. He first started studying a Professional Beachelor Applied Informatics in Ghent at Hogeschool Gent in which he graduated cum laude in 2010. After doing an internship at Centrum voor Volwassenonderwijs (CVO) in Ghent, during his final year, where he was triggered to deploy a CRM system, he got intrigued in doing research. In 2010, he started following a preparatory program at VUB in Etterbeek, in order to fulfil an Academic Master of Science in Engineering: Computer Science. After this heavy preparatory program, he started his master that he successfully rounded in 2013 with the Master thesis entitled “Using Data Mining Techniques for Discovering User Profiles in Ontology Engineering”. In this thesis, he got passionate about data manipulation and data analysis techniques. In October 2013, he started his PhD trajectory at the VUB in Jette in Medical Sciences at the research group Biostatistics and Medical Informatics (BISI). Here, he worked as a teaching assistant for multiple courses involved with informatics, epidemiology and biostatistics. In close collaboration with Prof. Dr. Em. Marc Nyssen and Prof. Dr. Ronald Buyl, he started the research project analysing the end-to-end flow of the electronic prescription. Only a couple of years later - in 2016 - he came in touch with Prof. Dr. Cornu with whom he started working together intesively about medical nomenclatures into practice and how they can deliver value to the care giver. The mission of this PhD project was to evaluate where possible bottlenecks are present in the flow of the ePrescription, to investigate who was responsible for these errors and how we can remedy these errors found.