

The effects of integrating an emergency department and general practitioner cooperative into one emergency post

Ingrid MH Vliegen¹, Manon A Bruens², Martijn RK Mes¹, Erwin W Hans¹, Carine JM Doggen³

¹ Department Industrial Engineering & Business Information Systems, Centre for Telematics and Information Technology, University of Twente, The Netherlands

² Ziekenhuisgroep Twente, Almelo, The Netherlands, Currently: Centre for Emergency Care Euregio (Acute Zorg Euregio), Medisch Spectrum Twente, Enschede, The Netherlands

³ Health Technology and Services Research, MIRA institute for Biomedical Technology and Technical Medicine, University of Twente, The Netherlands

Introduction

Increasingly, general practitioner cooperatives (GPCs) and Emergency Departments (EDs) in the Netherlands are merging into Integrated Emergency Posts (IEP). IEPs are intended to improve quality of care by giving patients access to the right care provider at the right time, and to increase cost-effectiveness.

Patients entering the IEP can receive a consult by a GP for less urgent problems or are sent to the ED for more complex urgent care. This reduces unnecessary self-referrals to the ED and as there is one access point to medical care it reduces confusion among patients with regard to choosing the right provider.

In 2010, the GPC and ED of a general hospital in Twente merged into one IEP with the intention to provide care to patients as effectively and efficiently as possible with optimal use of personnel and resources.

Objective

1) To assess the effects of the IEP using simulation models and 2) to generalize these results to other IEPs.

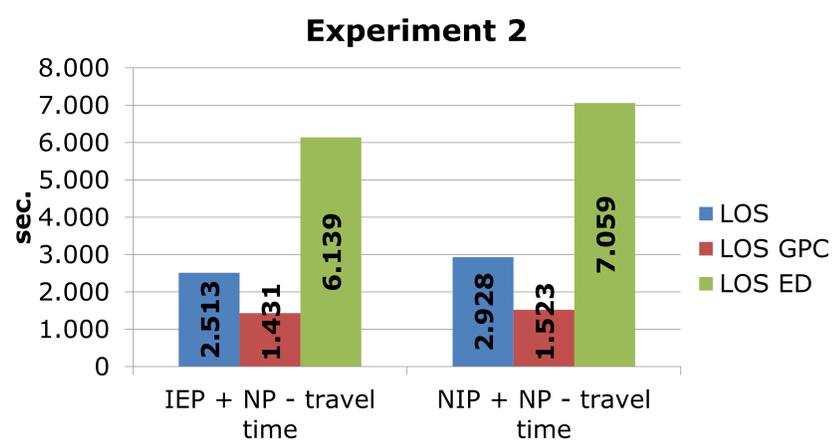
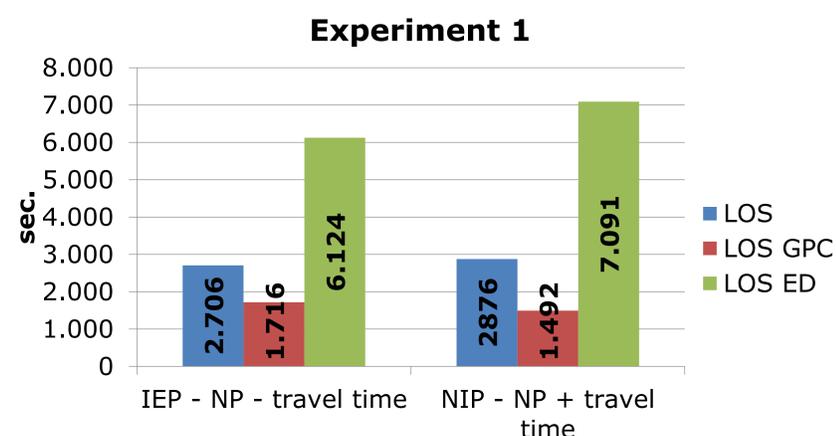
Method

- discrete event simulation model (Mes, Bruens, Proceedings of the Winter Simulation Conference 2012)
- before integration (non-integrated post (NIP)) versus after (IEP)
- with one or more changes:
 - i) self-referrals go to GPC
 - ii) no travel time from GPC to ED
 - iii) extra nurse practitioner (NP)
- same data
- sensitivity analysis number of patients and number of self-referrals

This research is part of a research project sponsored by the Netherlands Organisation for Health Research and Development.  ZonMw

Results

Experiments show the average length of stay (LOS) for all patients (blue), only GPC patients (red) and only ED patients (green).



Conclusion

The integration of the GPC and the ED into one IEP, as in Twente, has had a positive effect on the LOS. Especially the lower LOS in the ED is important as the ED receives the more complex urgent care patients. Also, in a more general setting, especially when the number of self-referrals increases, it is beneficial for the organizations to collaborate.

More information

Carine Doggen, PhD
c.j.m.doggen@utwente.nl



Manon Bruens
m.bruens@acuteczorgeregio.nl

