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CHOIR  



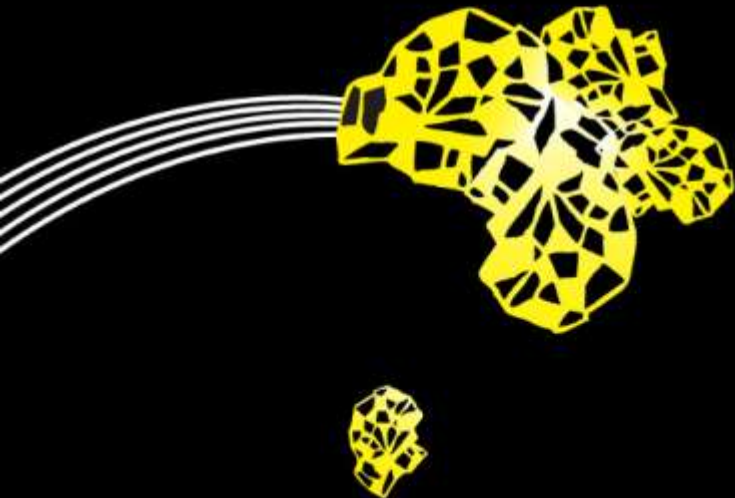

UMC Utrecht



## Multidisciplinaire poli planning

Ir. Gréanne Leeftink

Elieke van Sark BSc





# Inhoud

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- Wie zijn wij?
- Wat is multidisciplinaire poliplanning?
- Organisatie van multidisciplinaire polikliniek
- Case study: urologische oncologie
- Case study: endocriene oncologie





## Wie zijn wij?

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Gréanne Leeftink

- Promovenda zorglogistiek
- UMC Utrecht Cancer Center & CHOIR



Elieke van Sark

- Master student Industrial Engineering & Management
- Universiteit Twente





**Wat is multidisciplinaire poli planning?**





# Patient centraal, waarom?

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- Welke zorg zou jij willen krijgen?
- Zorgconcept:
  - “Volledige focus op de patient”
  - “Optimale afstemming van alles wat je doet”
  - “Continu streven naar verbetering”



# Patient centraal, wat betekent dat?

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- Duidelijkheid voor patienten
  - Herkenbare plek
  - Zorgpad afgestemd aan behoeften individu
- Hoge kwaliteit van zorg
- Meerdere zorgprofessionals onder een dak





## Huidige situatie

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- Complexe zorg
- Gepersonaliseerde zorg
- Zwaar en langdurig zorgproces voor patient
- Verschillende behandelkeuzes

→ Dit vraagt om multidisciplinaire zorg, waarbij korte lijntjes tussen de verschillende betrokken zorgprofessionals bestaan, en iedere patient krijgt wat hij of zij nodig heeft!



## Voorbeeld: Endocriene oncologie

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- Multidisciplinair team bestaat uit:
  - Internist
  - Chirurg
  - VS
  - KG
- Internist en chirurg houden combinatiesprekuren
- Patiënt heeft na het consult met de internist de mogelijkheid om aansluitend een consult bij een ondersteunde specialist in te plannen:
  - Verpleegkundig Specialist
  - Klinisch Geneticus





## Voorbeeld: Urologische oncologie (1)

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- Multidisciplinair team bestaat uit:
  - Uroloog
  - Radiotherapeut
  - Medisch oncoloog
  - VS
  
- Doelgroep: 4 zorgpaden
  - Blaas, nier, testis, prostaat
  - Verwijzingen
  - Samenwerkingsverbanden



## Voorbeeld: Urologische oncologie (2)

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- In MDO wordt patiënt besproken
- Als multidisciplinaire benadering gewenst, dan kan de patiënt langs bij:
  - Chirurg
  - Radiotherapeut
  - Medisch Oncoloog
  - *Verpleegkundig Specialist*



Commentary  
**Coordinated multidisciplinary care for Huntington's disease. An outpatient department**

Ruth B. Veenthuizen<sup>a,\*</sup>, Aad Tibben<sup>b</sup>  
<sup>a</sup>Neurodegenerative Research and Movement Center, De Boelelaan 1105 HC, The Netherlands  
<sup>b</sup>Centre for Human and Clinical Genetics, Leiden University Medical Centre, P.O. Box 3608, 2300 RC Leiden, The Netherlands

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**Keywords:**  
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**ABSTRACT**  
 Huntington's disease is characterized by a complex set of motor, neuropsychologic and psychiatric symptoms which start slowly and progress over many years to a state of complete dependency. The symptomatic treatment during the ambulatory years is diverse. In the northern part of the Netherlands, coordinated multidisciplinary care is offered to patients diagnosed with Huntington's disease. A team of a neurologist, psychologist, occupational therapist, speech and language therapist, social worker and nursing home doctor manages the patient and coordinates the care. This article describes the organization and plan of care. A case manager coordinates the care. This type of care is discussed in the context of the current literature. © 2008 Elsevier B.V. All rights reserved.

DOI: 10.1111/j.1468-3083.2011.04104.x  
**SHORT REPORT**  
**One-stop-shop treatment for basal cell carcinoma, part of a new disease management strategy**

S. van der Geer,<sup>a,\*</sup> M. Frunt,<sup>b</sup> H.L. Romero,<sup>c</sup> N.P. Dellaert,<sup>d</sup> M.H. Jansen-Vulliamis,<sup>e</sup> T.B.J. Demeijere,<sup>f</sup> H.A.M. Neumann,<sup>g</sup> G.A.M. Kneekels<sup>h</sup>

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<sup>c</sup>School of Industrial Engineering, Eindhoven University of Technology, Eindhoven, The Netherlands  
<sup>d</sup>Department of Pathology, Catharina Hospital, Eindhoven, The Netherlands  
<sup>e</sup>Department of Dermatology, Erasmus MC, Rotterdam, The Netherlands  
<sup>f</sup>Department of Dermatology, Erasmus MC, Rotterdam, The Netherlands  
<sup>g</sup>Department of Dermatology, Erasmus MC, Rotterdam, The Netherlands  
<sup>h</sup>Correspondence: S. van der Geer, E-mail: s.vandergeer@zorg.eindhoven.nl

**Abstract**  
**Background:** The number of skin cancer patients, especially patients with basal cell carcinoma (BCC), is rapidly increasing. Resources available at dermatology units have not increased proportionally, which affects the throughput time of patients.  
**Objective:** To assess the feasibility and safety of implementation of the one-stop-shop concept for the treatment of patients with BCC at a dermatology unit.  
**Methods:** A pilot study on one-stop-shop concept for BCC was performed to investigate procedure safety and patient satisfaction. Fresh frozen sections were used to diagnose the tumours, and subsequently treatment with photodynamic therapy or excision was performed on the same day. Time spent in the hospital was measured and questionnaires were used to evaluate patient satisfaction.  
**Results:** Sixteen patients, who together had 19 tumours, were included. Diagnoses were made within a mean time of 100 min (range 27–160 min). The mean throughput time was 4 hours and 7 min (range 60–420 min). No

BMJ Quality Improvement Reports  
 BMJ Quality Improvement Reports 2016; 14(1): 1-11  
**Improving patient access to a movement disorder clinic by participating in a Process Improvement Program**  
 Alan Goodridge, Douglas Woodhouse, Janet Barbour

**Abstract**  
 Our multi-disciplinary neurology team were dissatisfied with long access times for consultation for new referrals. We participated in a rapid process improvement workshop and a structured improvement process. Over a six-month period we were able to reduce our access time for initial appointment for patients with suspected movement disorders from 133 to 20 days. We implemented a 'carousel' multi-disciplinary appointment and a standardised clinic form that improved the flow of patients and that we estimate will save 150 hours of physician time and 320 hours of administrative time per year.

**Problem**  
 Our specialist team provides tertiary care services at an academic health centre for a large geographical region. Access times for consultation at a multi-disciplinary clinic for neurological patients were very long for neurology.

**Intervention**  
 We participated in a rapid process improvement workshop and a structured improvement process. Over a six-month period we were able to reduce our access time for initial appointment for patients with suspected movement disorders from 133 to 20 days. We implemented a 'carousel' multi-disciplinary appointment and a standardised clinic form that improved the flow of patients and that we estimate will save 150 hours of physician time and 320 hours of administrative time per year.

**Outcome**  
 We were able to reduce our access time for initial appointment for patients with suspected movement disorders from 133 to 20 days. We implemented a 'carousel' multi-disciplinary appointment and a standardised clinic form that improved the flow of patients and that we estimate will save 150 hours of physician time and 320 hours of administrative time per year.

**Conclusion**  
 We were able to reduce our access time for initial appointment for patients with suspected movement disorders from 133 to 20 days. We implemented a 'carousel' multi-disciplinary appointment and a standardised clinic form that improved the flow of patients and that we estimate will save 150 hours of physician time and 320 hours of administrative time per year.

**Multidisciplinary Cancer Care With a Patient and Physician Satisfaction Focus**  
 By Gregory Linton, MD, Dianne Kerr, RN, MS, Gina Clay, RN, BSN, Patricia Kroger, RN, BSN, Intermountain Healthcare, Salt Lake City, UT

**Abstract**  
**Purpose:** Cancer treatment can be a complex and overwhelming process for both the patient and the care providers. With an ever-evolving array of treatment options, a path toward personalized medicine, and a complex paper system, coordination of cancer care is essential to ensuring the process. At Intermountain Healthcare, we have developed a regional multidisciplinary cancer clinic that provides coordinated and comprehensive treatment planning in a single visit. Provider satisfaction is a key to the success of this model. Provider satisfaction is a key to the success of this model.

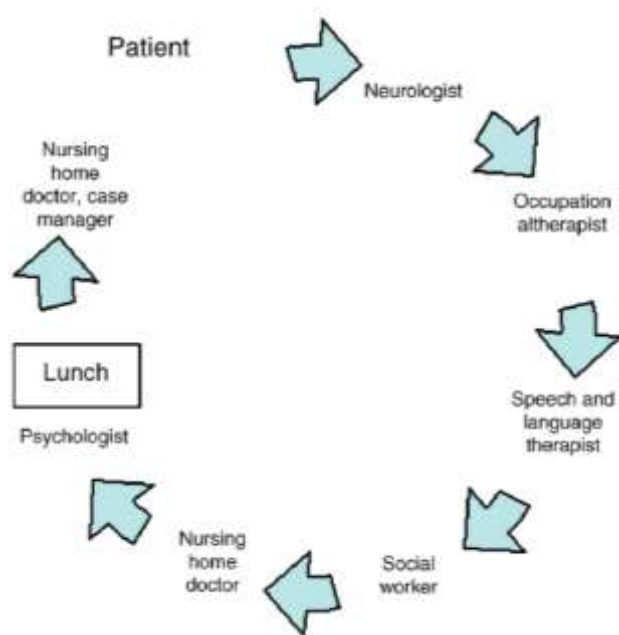
**Methods:** The first multidisciplinary clinic, which was for breast cancer, was held in 2005. Similar clinics for other tumor types (lung, colorectal, prostate, pancreatic, and thyroid cancer) have since been established. Each clinic is staffed by a surgical, medical oncologist, radiation oncologist, and other specialists as needed. Clinic throughput time is a key to the success of this model.

**Results:** Satisfaction with the clinic has been high, and 90% of patients rated their overall experience as "excellent." Physicians also give the clinic high marks, including 5 with improving coordination, leading patient confidence, and streamlining workflow.

**Conclusion:** Satisfaction with the clinic has been high, and 90% of patients rated their overall experience as "excellent." Physicians also give the clinic high marks, including 5 with improving coordination, leading patient confidence, and streamlining workflow.

**Background**  
 In early 2000, a small team of interested physicians, nurses, and administrators met to discuss the concept of a multidisciplinary cancer clinic. The meeting was presided by discussion at an AMCC, which was a cooperative market for cancer care. Intermountain Healthcare was also in a cooperative market for cancer care. Intermountain Healthcare was also in a cooperative market for cancer care. Intermountain Healthcare was also in a cooperative market for cancer care.

# Voorbeeld: Veenhuizen & Tibben (2009)



Het kan nog complexer:  
- Meerdere zorgpaden  
- Patiënt beslist mee over zorgtraject

- Veenhuizen, R. B., & Tibben, A. (2009). Coordinated multidisciplinary care for Huntington's disease. An outpatient department. Brain research bulletin, 80(4), 192-195.



# Onderzoeksvragen

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- Haalbaarheid one-stop-shop kliniek
- Kwaliteit van zorg in one-stop-shop kliniek
- Tevredenheid van patient en medewerker multidisciplinaire kliniek
- Hoe kunnen we onze toegangstijden terugdringen
- Hoe kunnen we onze capaciteit beter gebruiken

Efficiënte en effectieve organisatie van deze multidisciplinaire klinieken komt niet aan bod!



# Uitdagingen

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- Lage toegangstijd (binnen norm!)
- Lage wachttijd
- Hoge benutting zorgprofessionals
- Hoge benutting resources





## Organisatie van multidisciplinaire polikliniek



# Framework – multidisciplinaire poli-planning


	<b>Medische planning</b>	<b>Resource capaciteits planning</b>	<b>Materiaal planning</b>	<b>Financiële planning</b>
Strategisch	Capaciteitsanalyse			
Tactisch	Agenda-inrichting Planhorizon			
Offline operationeel	Patiënten toewijzen aan slots Planregels			
Online operationeel	Hoe omgaan met no-shows etc.			

- Hans, E.W., Van Houdenhoven, M., and Hulshof, P.J.H. (2011) A framework for health care planning and control. In: Handbook of Healthcare System Scheduling. International Series in Operations Research & Management Science, 168 . Springer, Berlin, Germany, pp. 303-320.



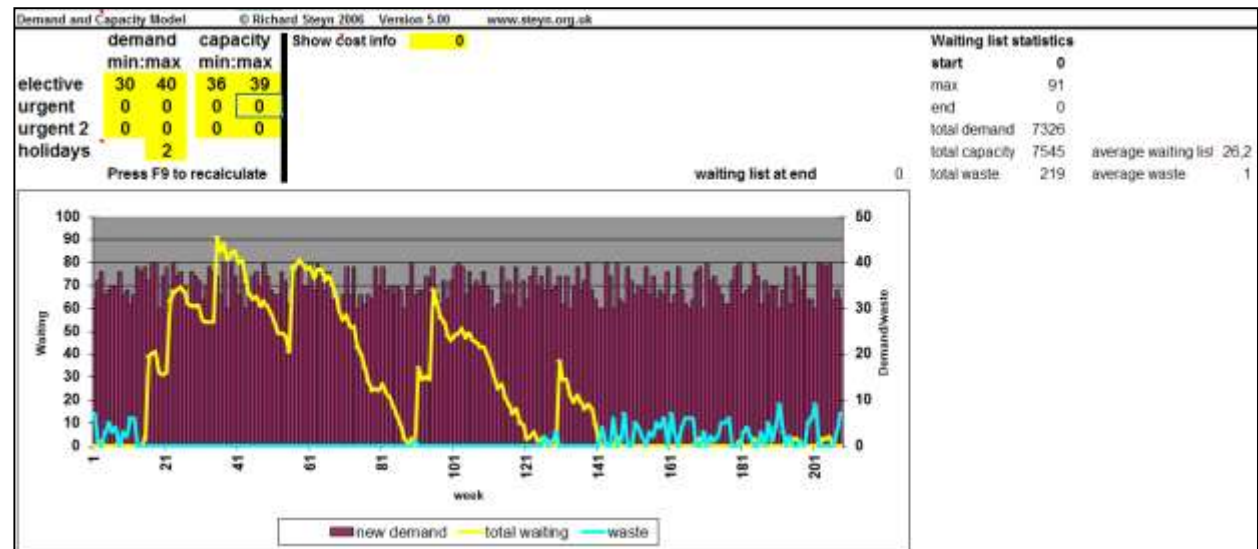
# Case study: Oncologische Urologie - capaciteitsanalyse

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- Samenwerking tussen Urologie, Radiotherapie en Medische oncologie.
  - Hoeveel poliblokken hebben we nodig om aan onze vraag te kunnen voldoen?

# Data analyse

- Aantal bezoeken per patiënttype per specialist
- Aankomst van patiënten
- Beschikbaarheid specialisten
- Volumegegevens





## En verder ...

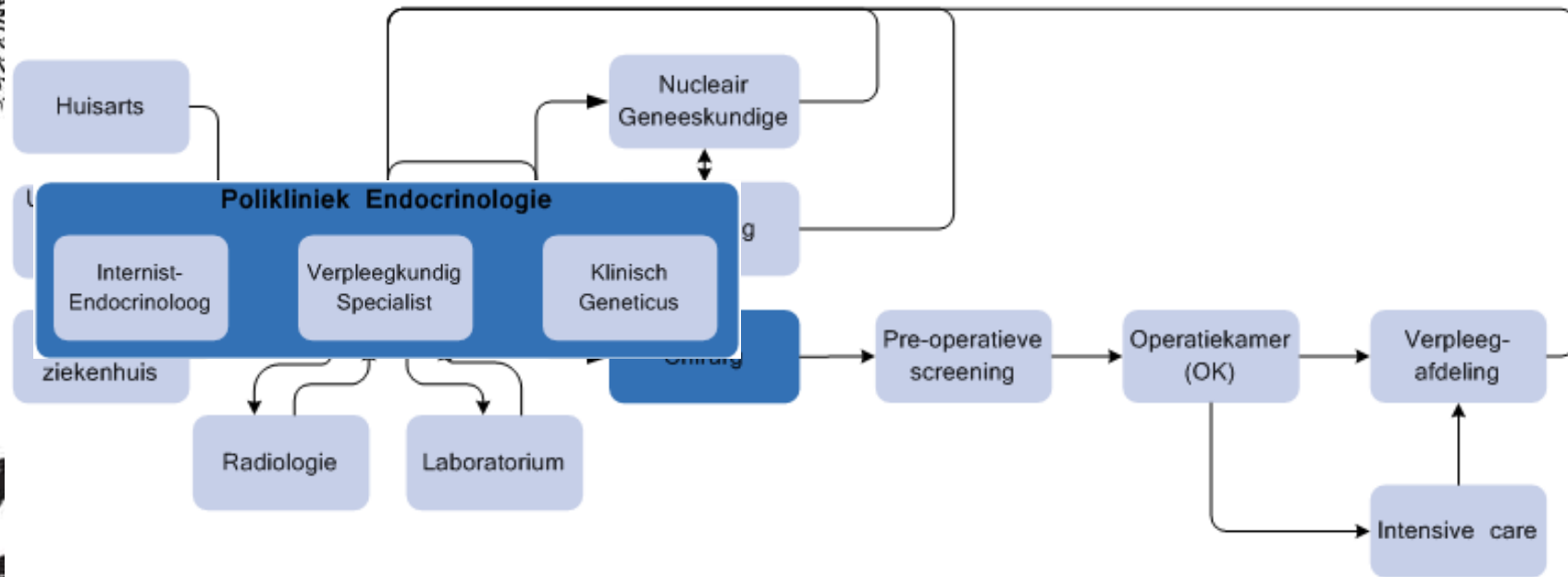
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- Planhorizon bepalen
- Afstemming van agenda's betrokken zorgprofessionals
- ...

... om uiteindelijk iedere patient de zorg te kunnen bieden die hij of zij nodig heeft!



# Case study: endocriene oncologie – agendainrichting en planregels



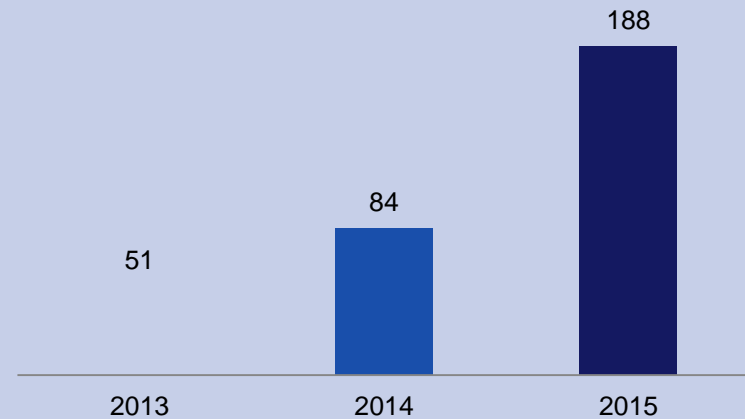




# Bevindingen

- Patiëntenaantallen
- Planningshorizon
  - No-show
  - Verplaatsingen
- Benutting
- Toegangstijden
- Wachttijden

## Aantal nieuw gediagnosticeerde patiënten



# Interventies

- Planningsysteem
  - Planningsregels
  - Volgorderegels

Volgorderegels	Representatie	Uitleg
ALTER	(CNCNCNC...)	Nieuwe en controle patiënten alternerend
NWBG	(NNN...CCCC)	Nieuwe patiënten aan het begin
RTBG	(CCCC...NNN)	Controle patiënten aan het begin
NWBND	(NN...CCC...NN)	Nieuwe patiënten aan het begin en eind
RTBND	(CC...NNN...CC)	Controle patiënten aan het begin en eind
	$t_i = (i - 1)\mu + \beta_2(i - k_1)\sigma$ for $k_1 < i < k_2$ , $t_i = (i - 1)\mu - \beta_3(i - k_2)\sigma$ for $i \geq k_2$ .	
2BEG	$t_1, t_2 = 0$ , $t_i = t_{i-1} + \mu$ for $i > 2$ .	
MBFI	$t_i = t_{i+1} = (i - 1)\mu$ for $i = 1, 3, 5, 7, \dots$	



# Simulatiemodel

- Discrete-event Simulation

EventController  
Runlength=3285  
DayNr=61  
RunNr=1  
Complete=0  
ResultsComplete

...Hospital.EventControl... ?

Navigate View Tools Help

Time ma, 2015/03/09 08:30:00.0000

Controls Settings

Slower Faster

Real time x 10

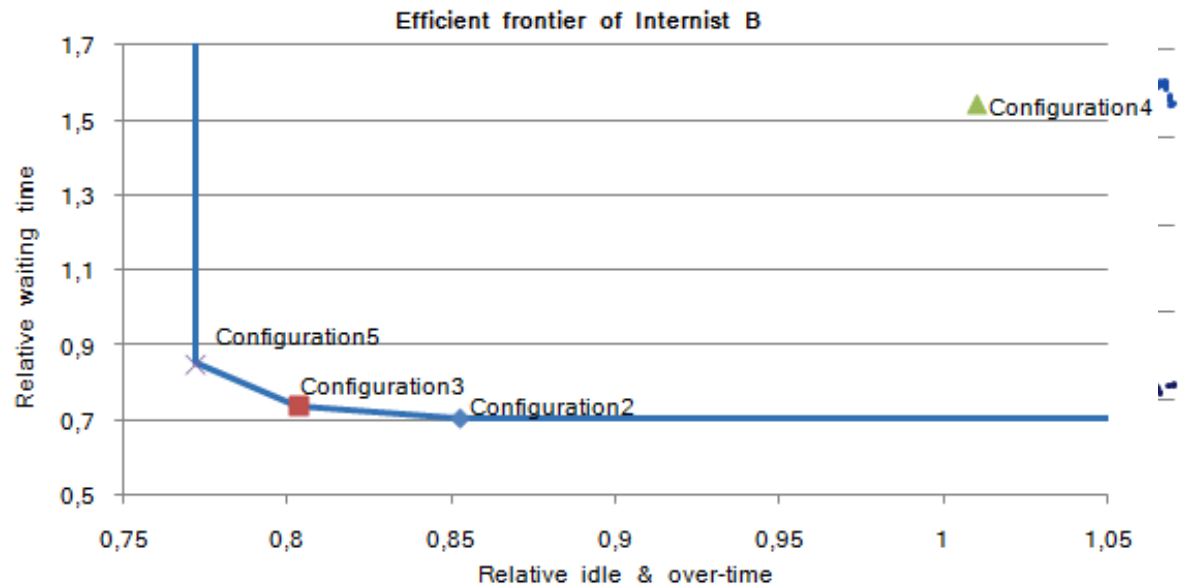
OK Cancel Apply

Endocrinology EndocrineSurgery RunReset=false



# Resultaten

- Capaciteit internist niet voldoende
- Aanpassen afspraakduur



# Conclusie

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**Dank voor uw aandacht!**

Elieke van Sark

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