



# ***Reorganizing and resizing clinical wards***

Anja Stunnenberg

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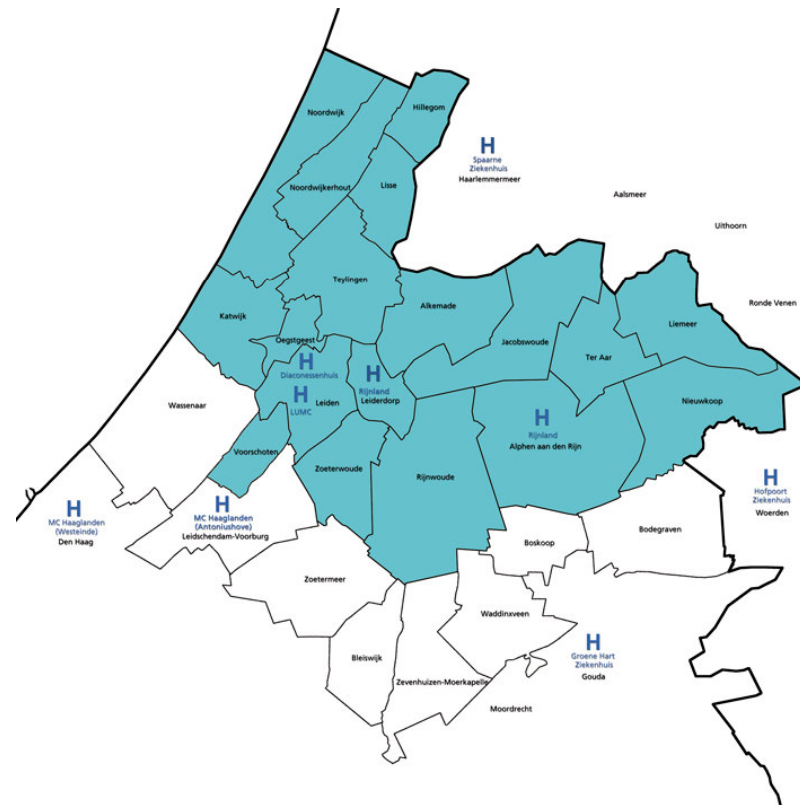
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# Introduction Rijnland Ziekenhuis (1)

- General hospital in Leiderdorp
  - Activite, Rijnlands Revalidatiecentrum, NOK
- 470 acknowledged beds
  - 384 beds in use
  - New ward started in 2008 (emergency admission)
- 125 doctors
- 1320 fte employees

# Introduction Rijnland Ziekenhuis (2)

- EUR 125 million revenues in 2008
  - Nearly 117.000 outpatient visits
  - More than 21.000 outpatients (day care)
  - More than 17.000 clinical admissions
- Area covered by Rijnland Ziekenhuis is Zuid-Holland Noord



# Background Managing Variability Programme (1)

- Increasing pressure on financial results
- Big issues in hospital
  - Permanent shortage in beds
  - At beginning of 2009 several stops in clinical admissions for emergency patients and several planned operations cancelled
  - Due to shortage of staff limited admission capacity
  - Optimal use of beds via flexible approach
  - OT central and decentralized planning
  - Quality of nursing care?

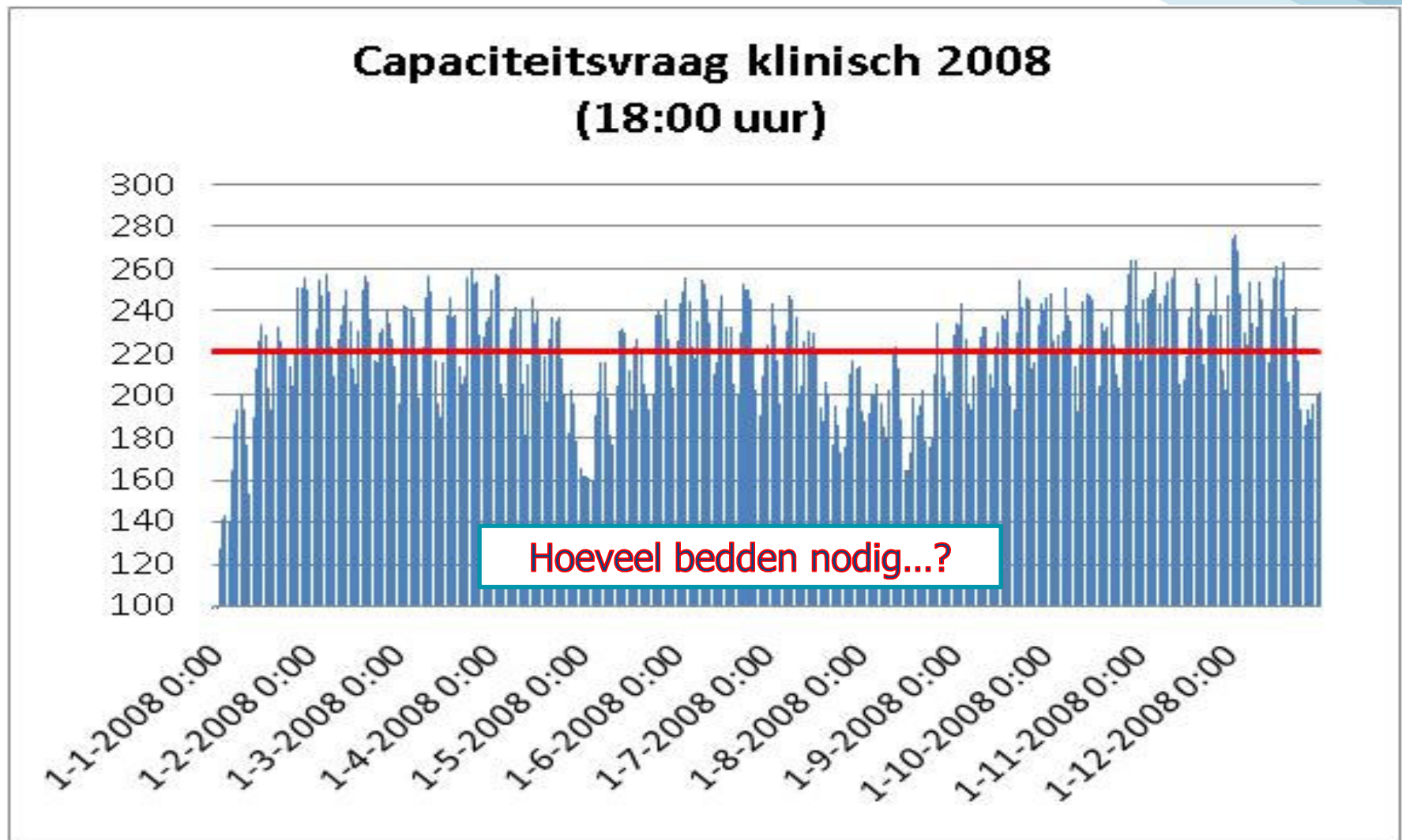
# Background Managing Variability Programme (2)

- Data analysis included 2008
- Number of outpatients and pediatric ward excluded

## Analysis – Degree of variability Rijnland

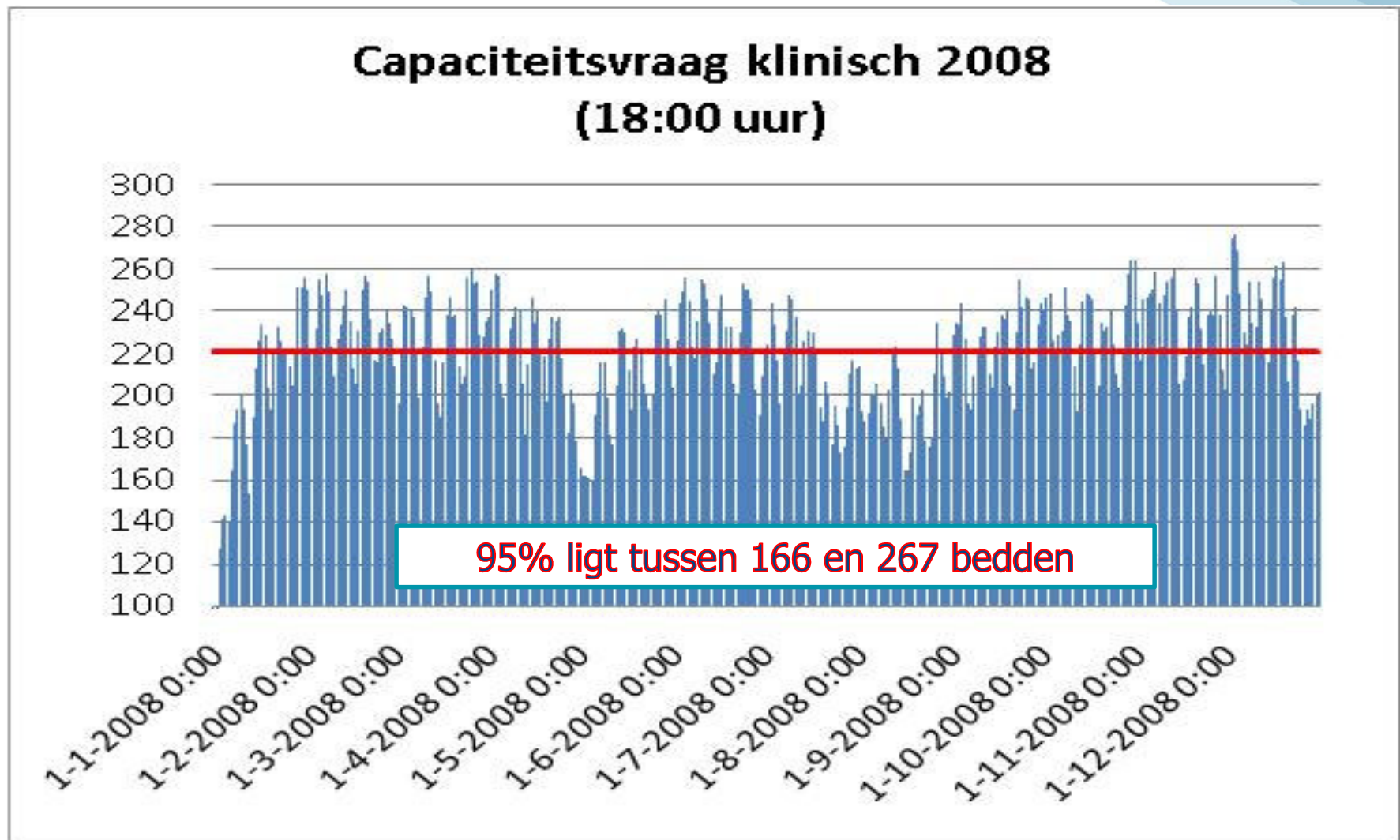
Aantal van Opnamenummer			Totaal Opname	%
Klinisch/Dag	Spoed	Snijdend/beschouwend		
K	Nee	beschouwend	3805	22%
		snijdend	5013	29%
	Ja	beschouwend	6851	40%
		snijdend	1431	9%
<b>Eindtotaal</b>			<b>17100</b>	<b>100%</b>

## Analysis - Capacity

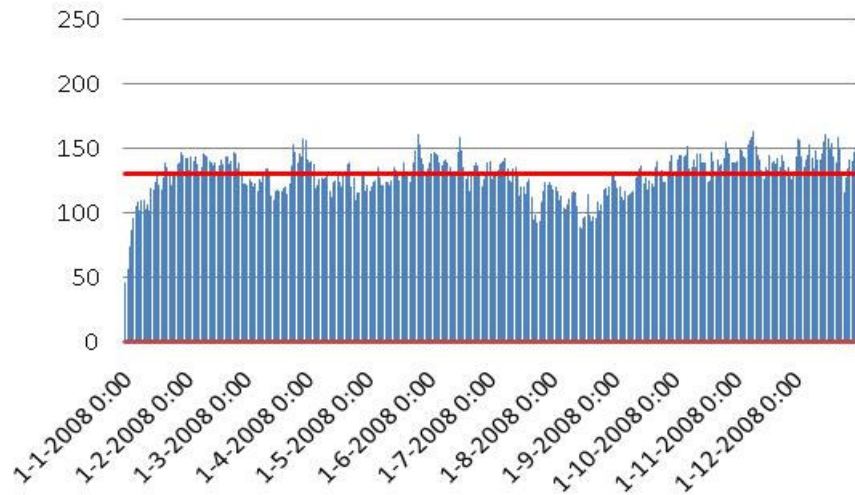




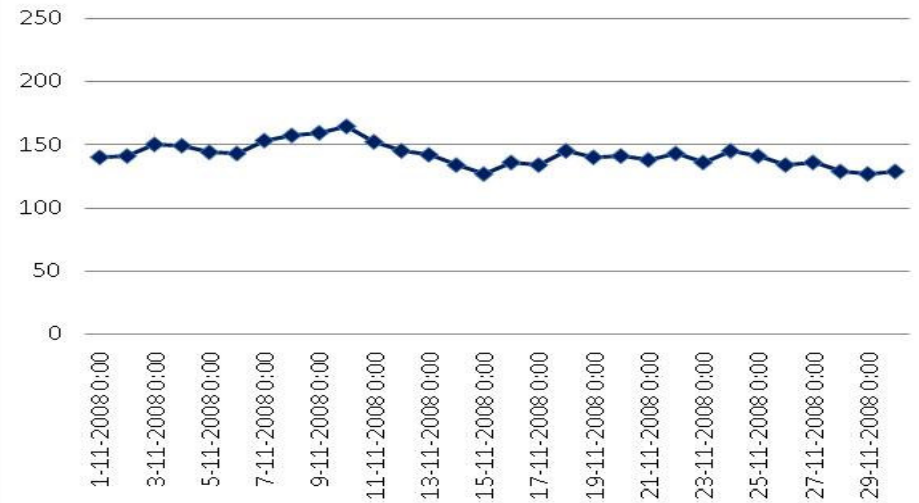
## Analysis - Capacity



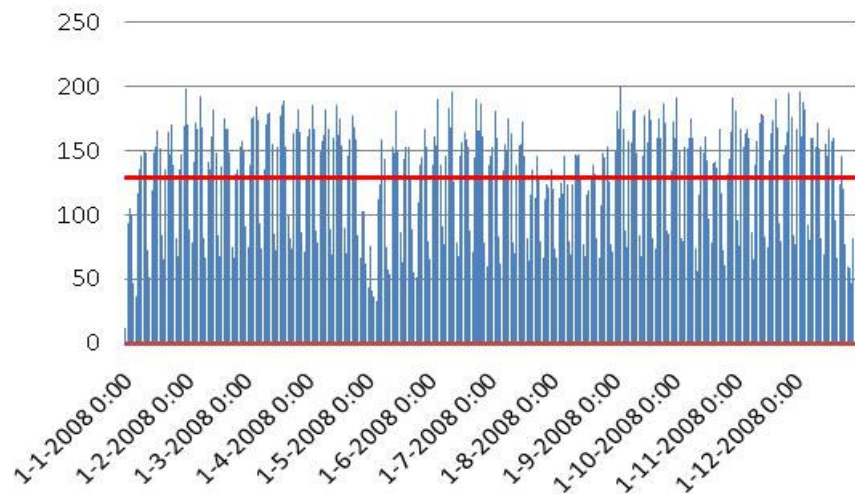
**Capaciteitsvraag spoed  
(18:00 uur)**



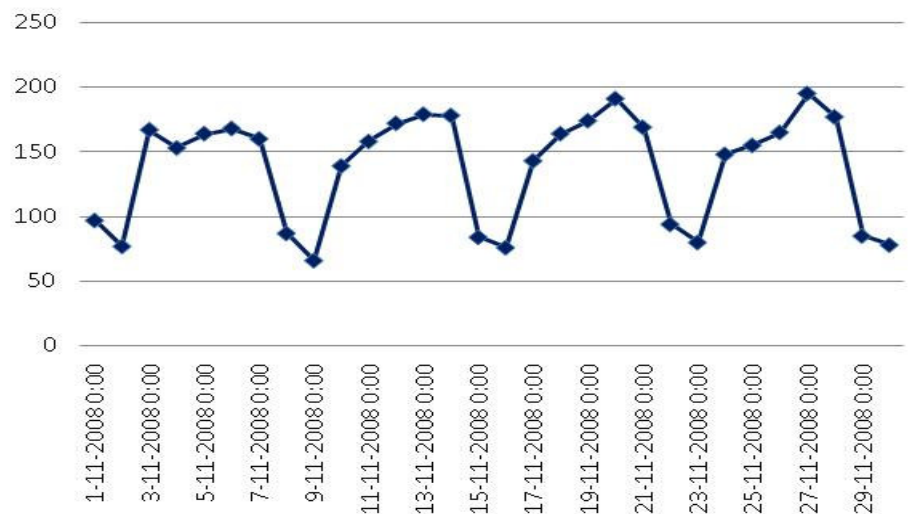
**Aantal benodigde bedden  
November 2008 (18:00 uur)**



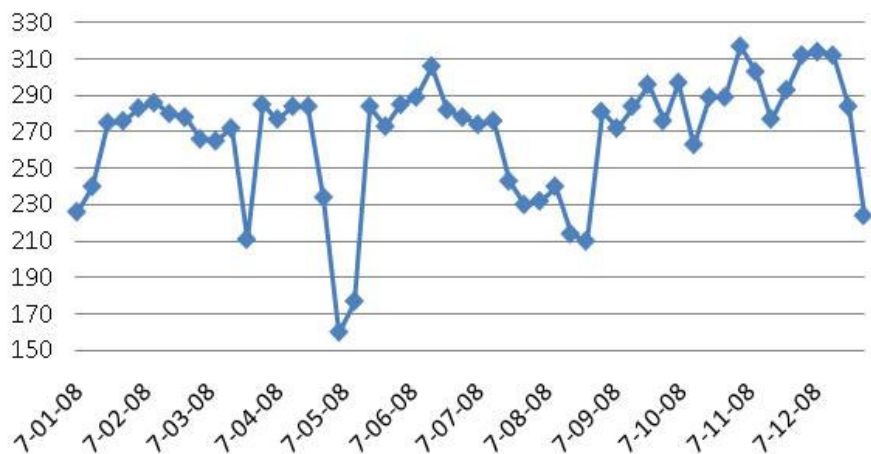
**Capaciteitsvraag electief  
(18:00 uur)**



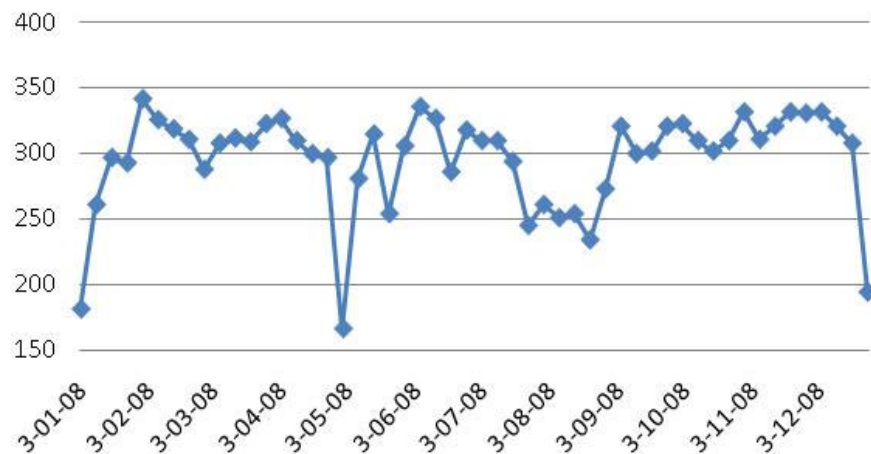
**Aantal benodigde bedden  
November 2008 (18:00 uur)**



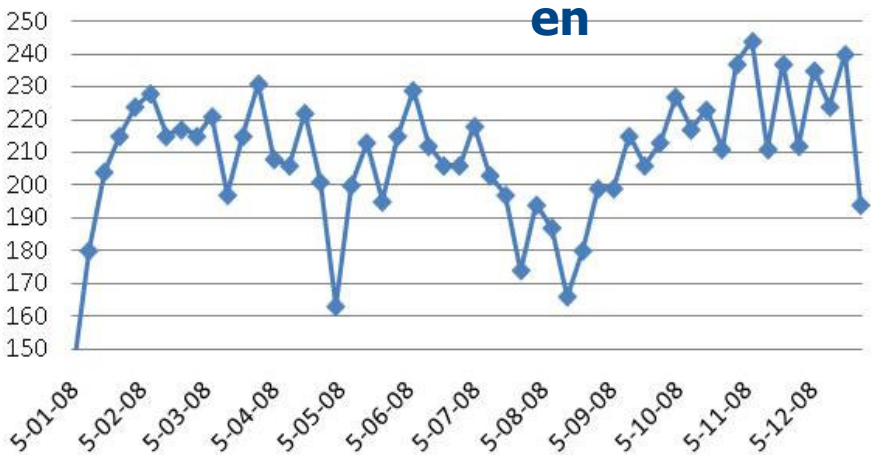
### Capaciteitsvraag maandagen



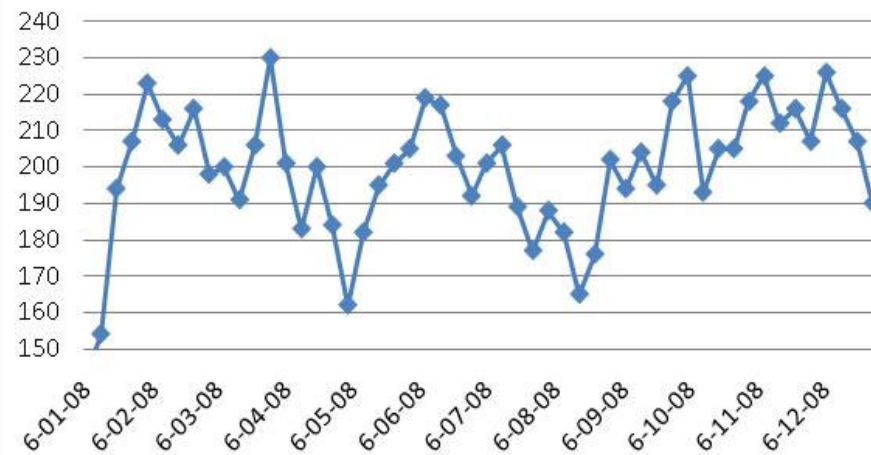
### Capaciteitsvraag donderdagen



### Capaciteitsvraag zaterdag en



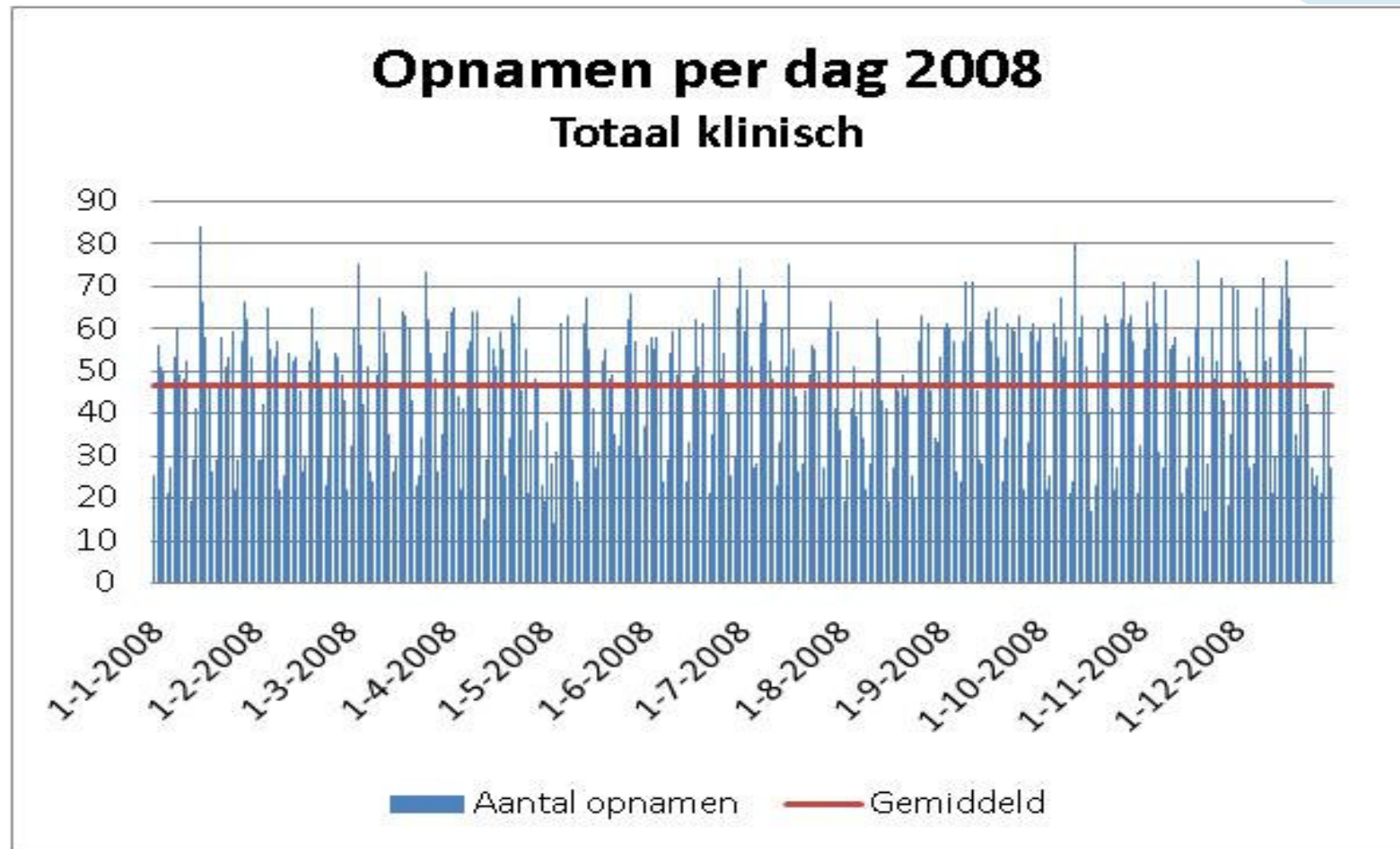
### Capaciteitsvraag zondagen



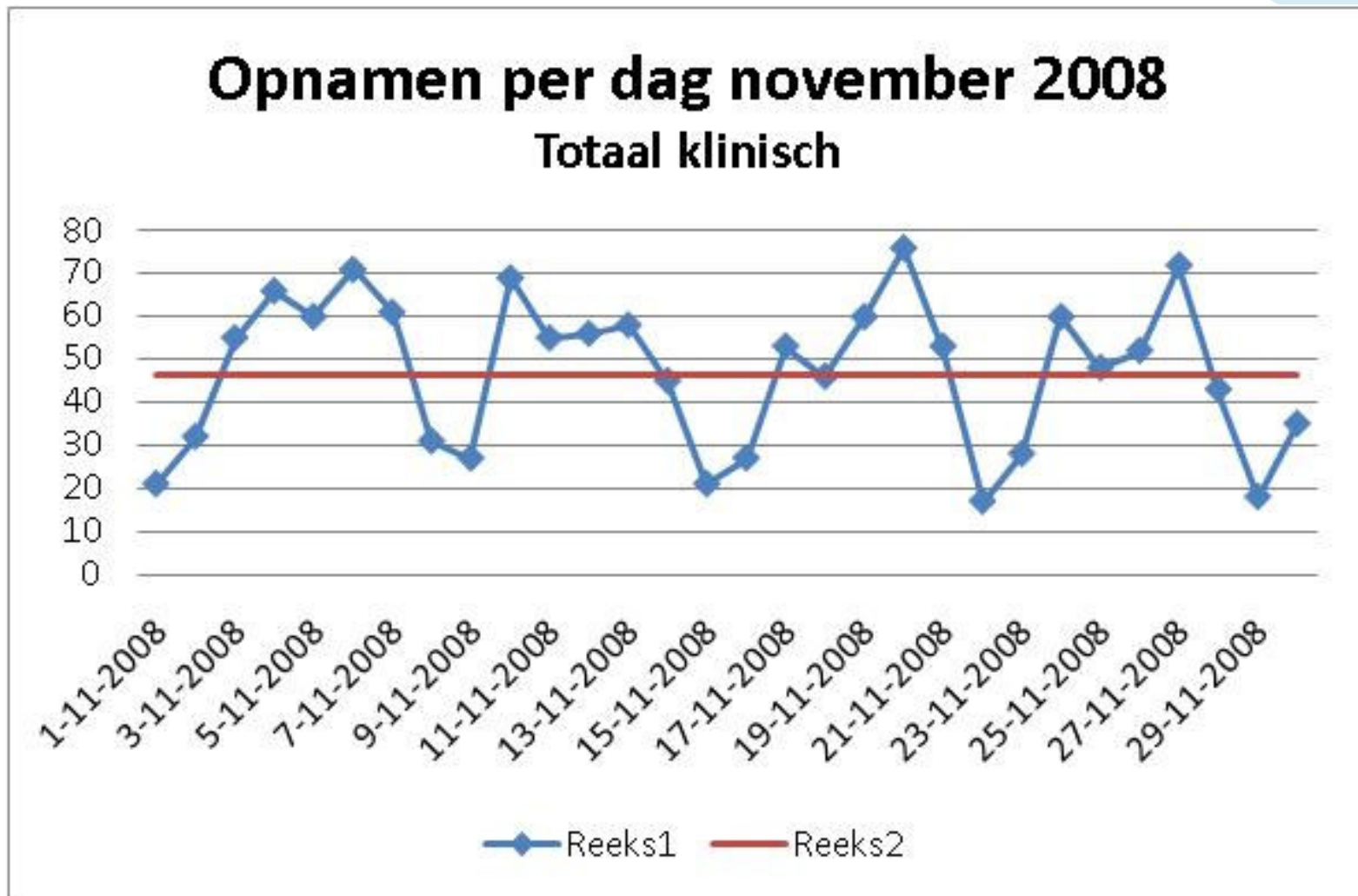
## Analysis - Capacity

Klinisch	Aandeel in totaal aantal opnamen	Aandeel in totale vraag naar bedden	Mate van variabiliteit
Totaal beschouwend	62%	58%	0,11
Totaal snijdend	31%	42%	0,19
Totaal spoed	49%	40%	0,12
Totaal electief	44%	60%	0,22
Totaal klinisch	100%	100%	0,12

## Analysis - Admissions

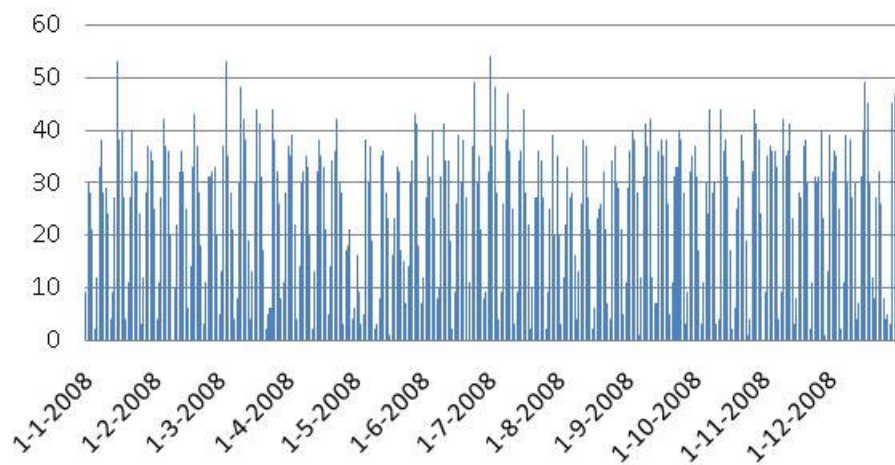


## Analysis - Admissions

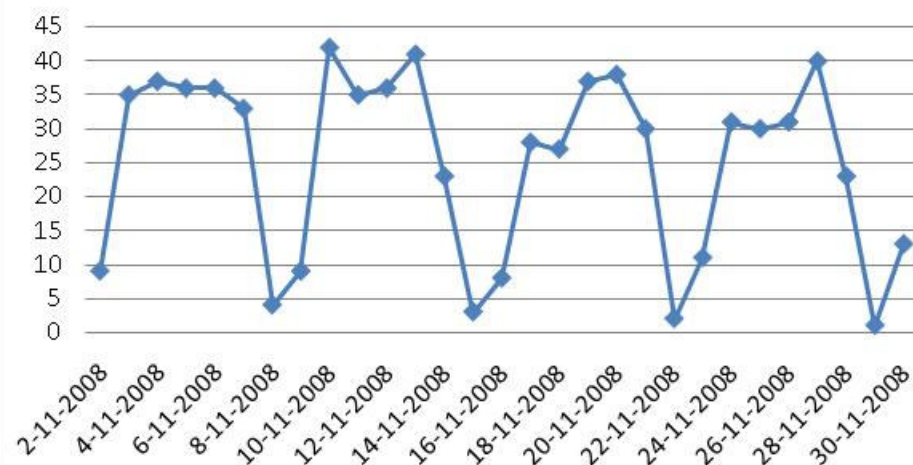


# Analysis - Admissions

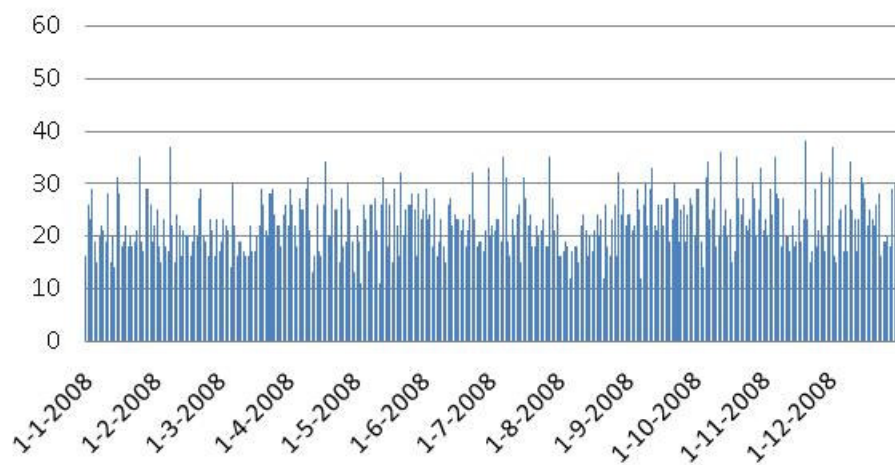
### Aantal opnamen klinisch electief 2008



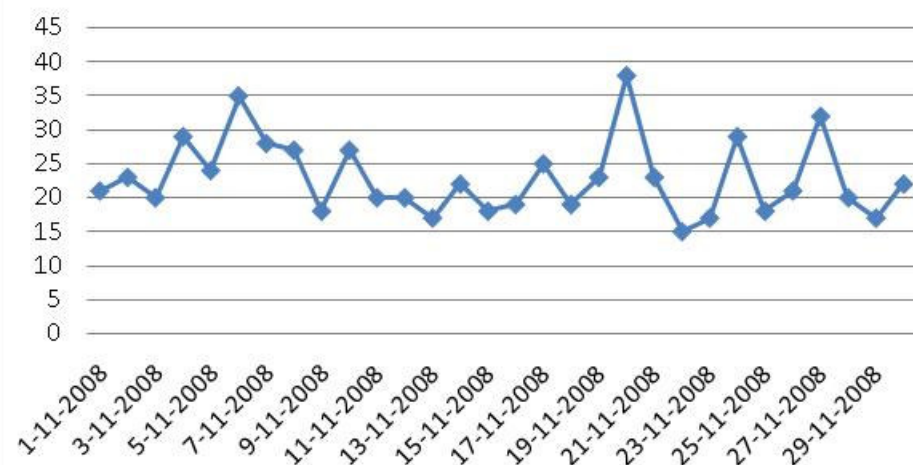
### Aantal opnamen november 2008



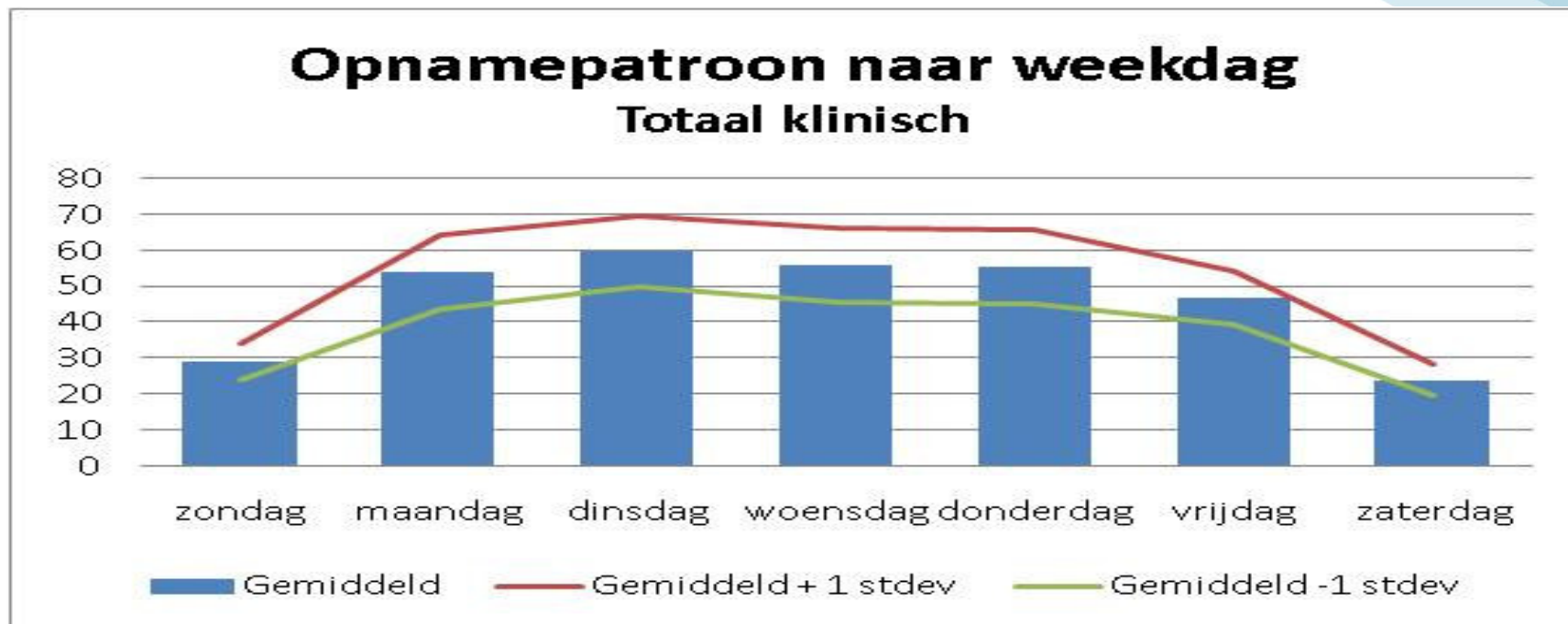
### Aantal opnamen klinisch spoed 2008



### Aantal opnamen november 2008



# Analysis - Admissions



	zondag	maandag	dinsdag	woensdag	donderdag	vrijdag	zaterdag	gemiddeld per dag
Gemiddeld	29,15	54,04	59,87	56,15	55,67	46,75	24,00	46,58
Stdev	4,87	10,38	9,70	10,21	10,13	7,33	4,26	15,67



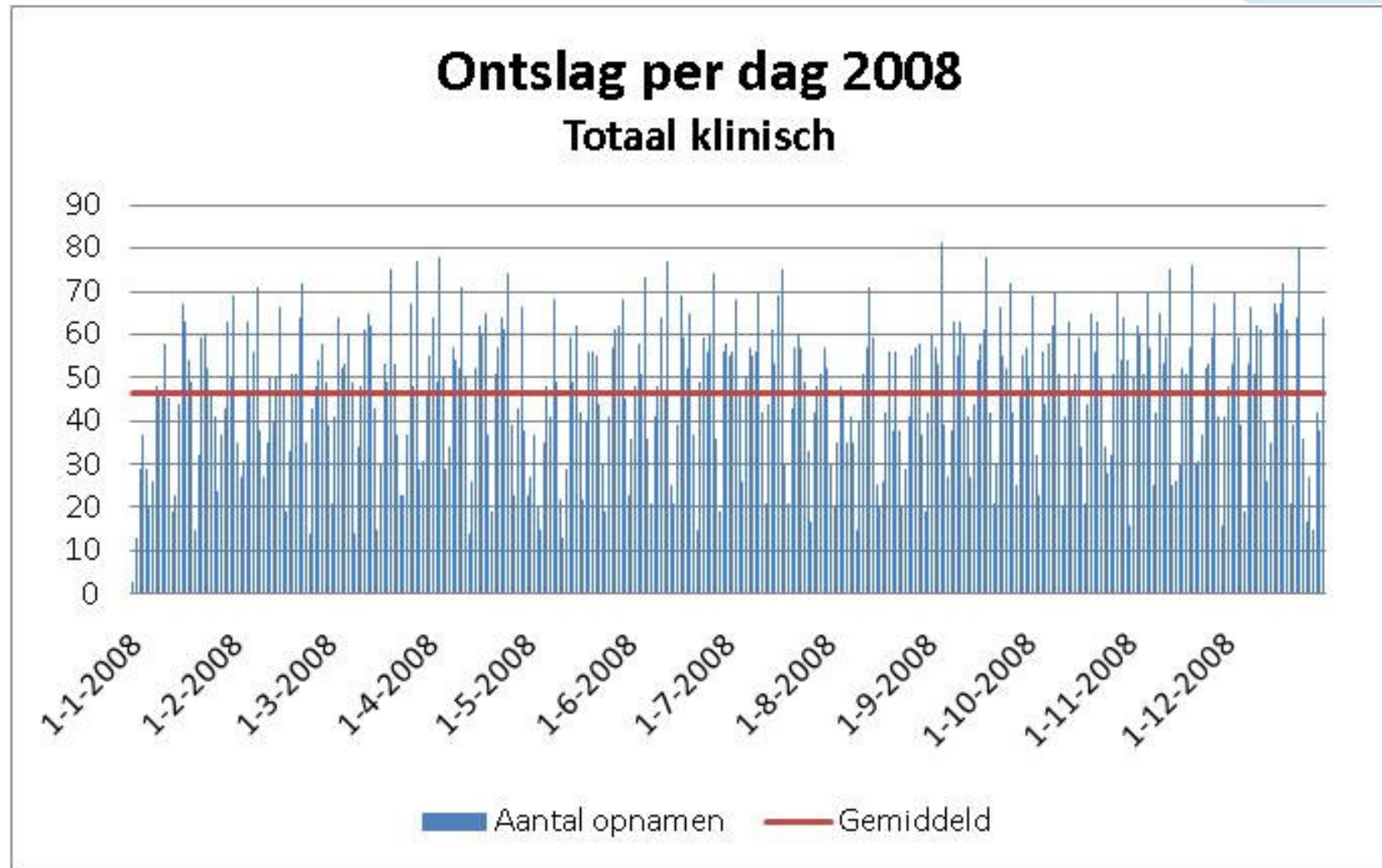
## Degree of variability Rijnland

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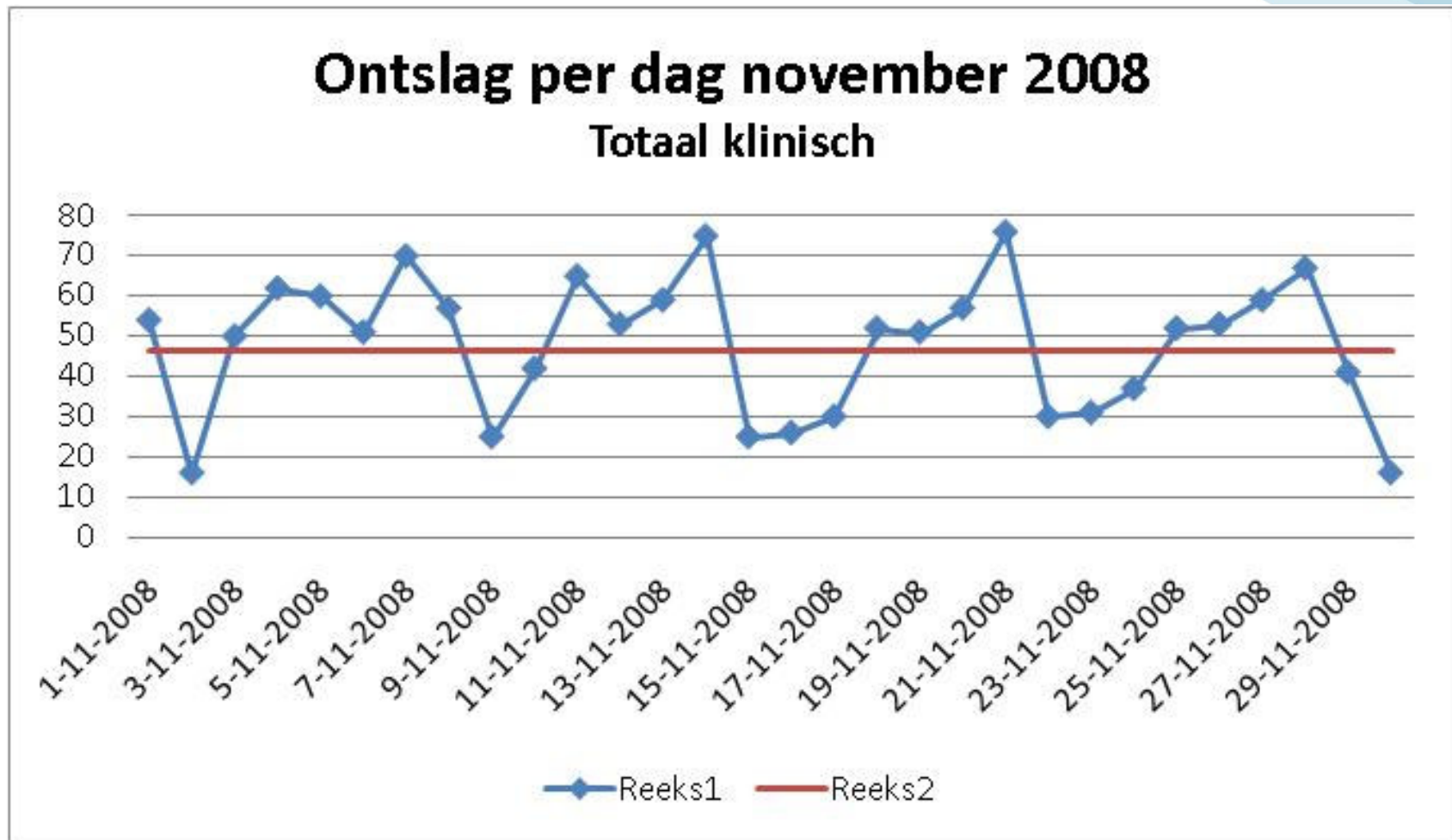
This leads to...

- Regular deficit of beds for all admissions on ward
- Unintended transfers
- Significant increase in patients length of stay due to intra-ward transfers (on average + 0,6 days)
- Uneven workload nurses

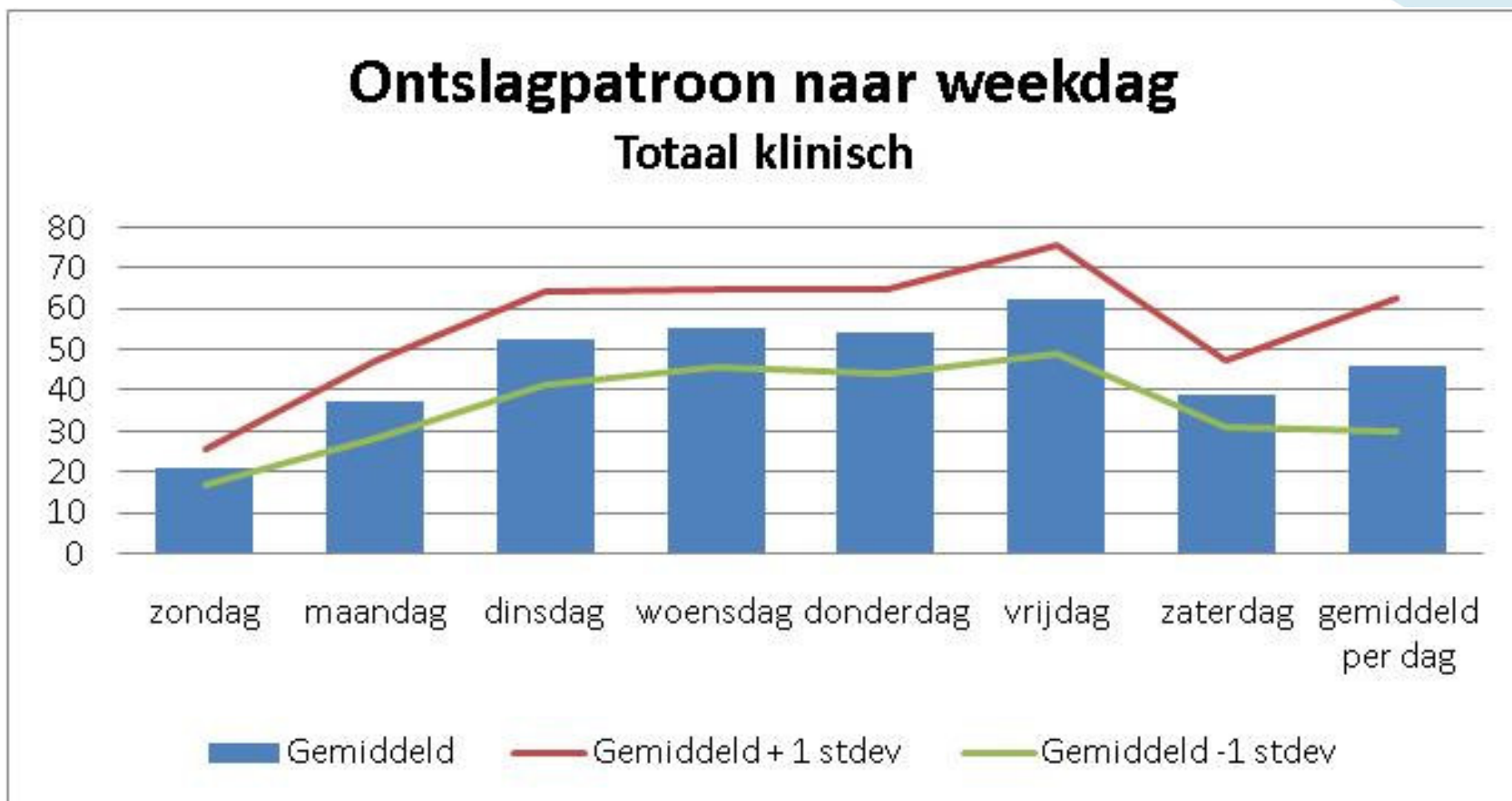
## Analysis - Discharges



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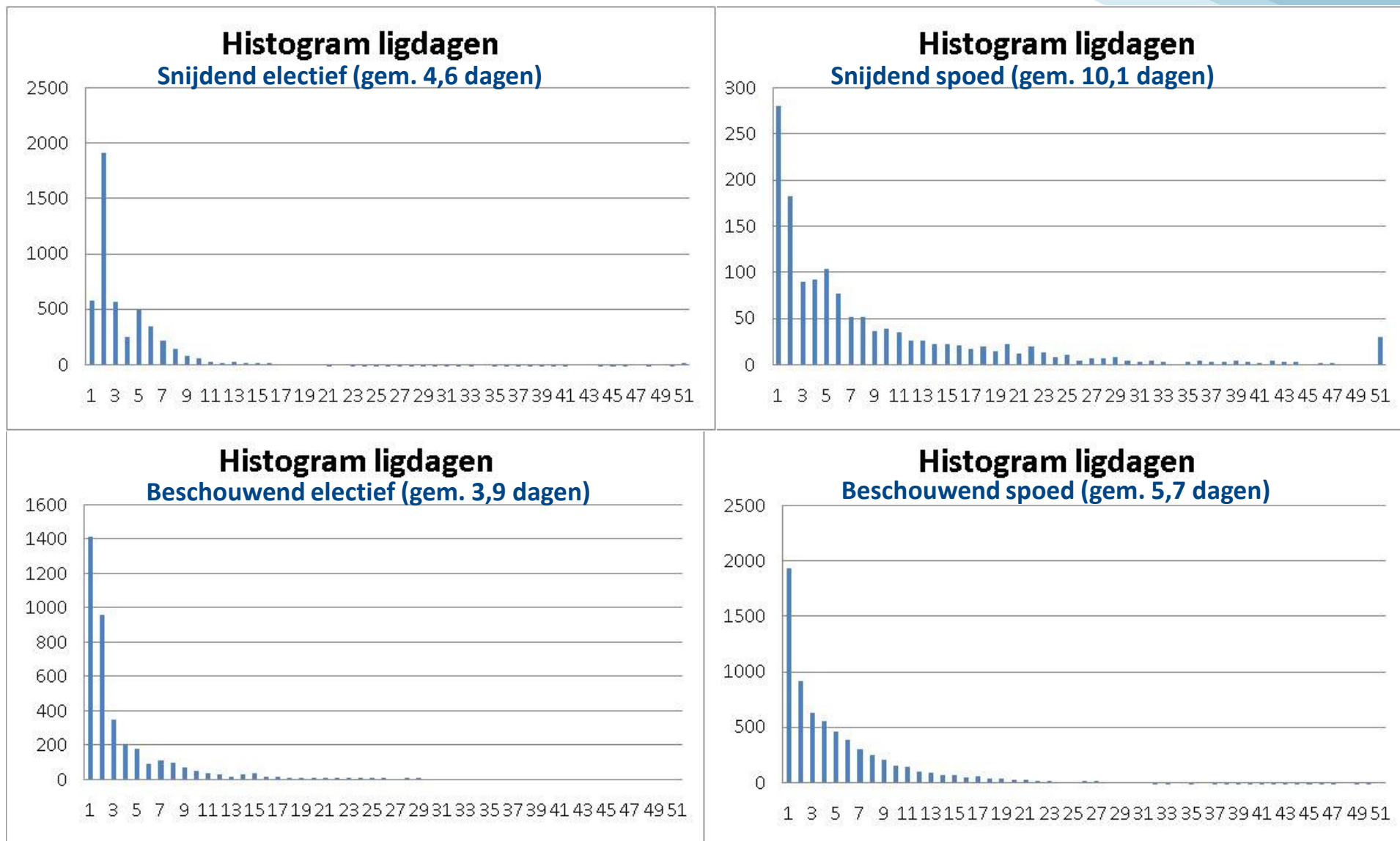


## Analysis - Discharges

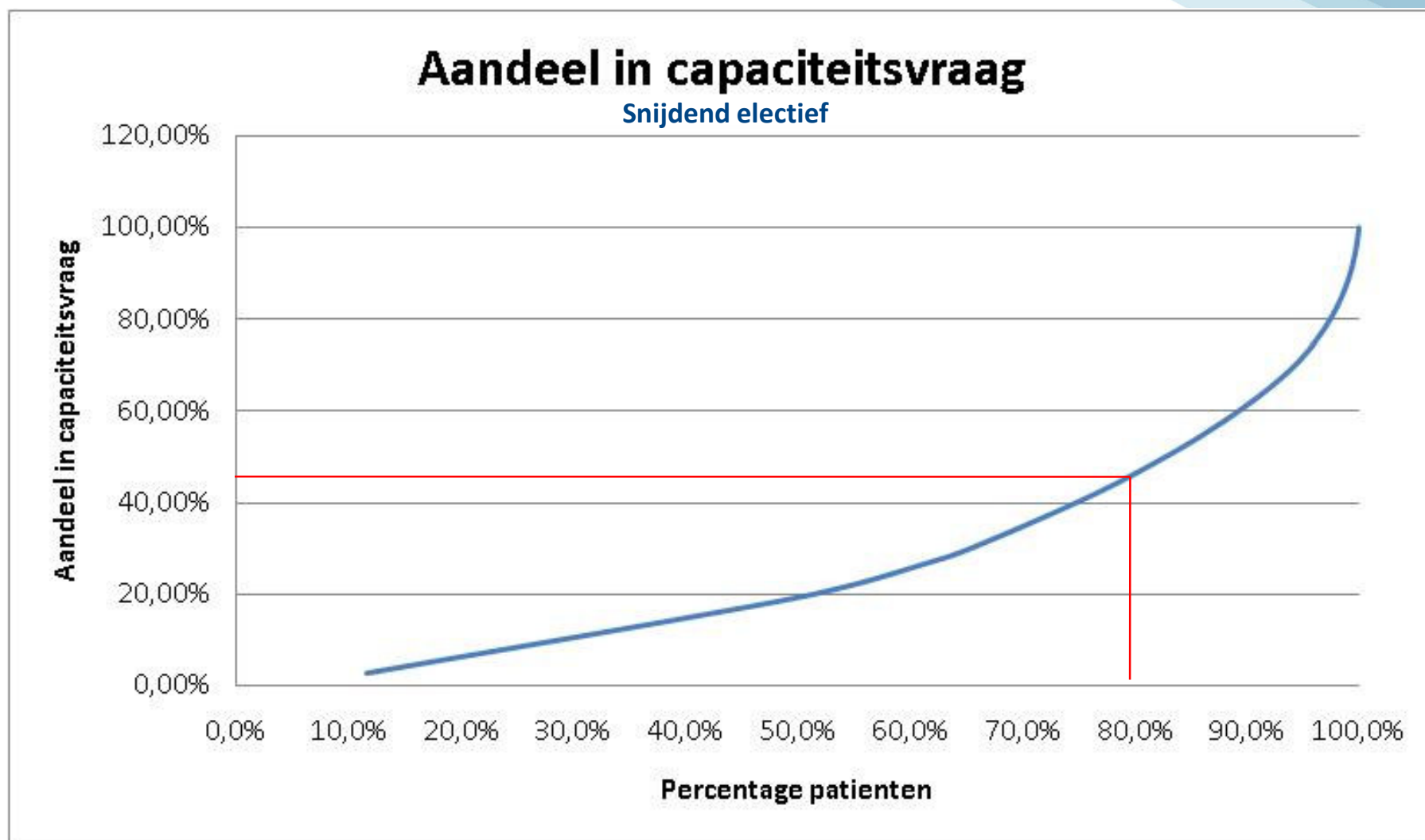
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- In weekend significant less discharges
- On Fridays significant more discharges

# Analysis – Length of stay



## Analysis – Length of stay



## Analysis – Length of stay

Ligduren naar opnamedag		Zondag	Maandag	Dinsdag	Woensdag	Donderdag	Vrijdag	Zaterdag
Beschouwend	Spoed	5,02	5,20	5,14	5,12	5,44	5,53	4,77
	Electief	2,18	3,23	3,49	2,83	3,63	4,24	2,58
Snijdend	Spoed	9,67	10,45	9,53	7,93	11,41	10,60	7,71
	Electief	9,50	3,85	3,47	4,11	3,46	3,44	5,02



## Analysis – Length of stay

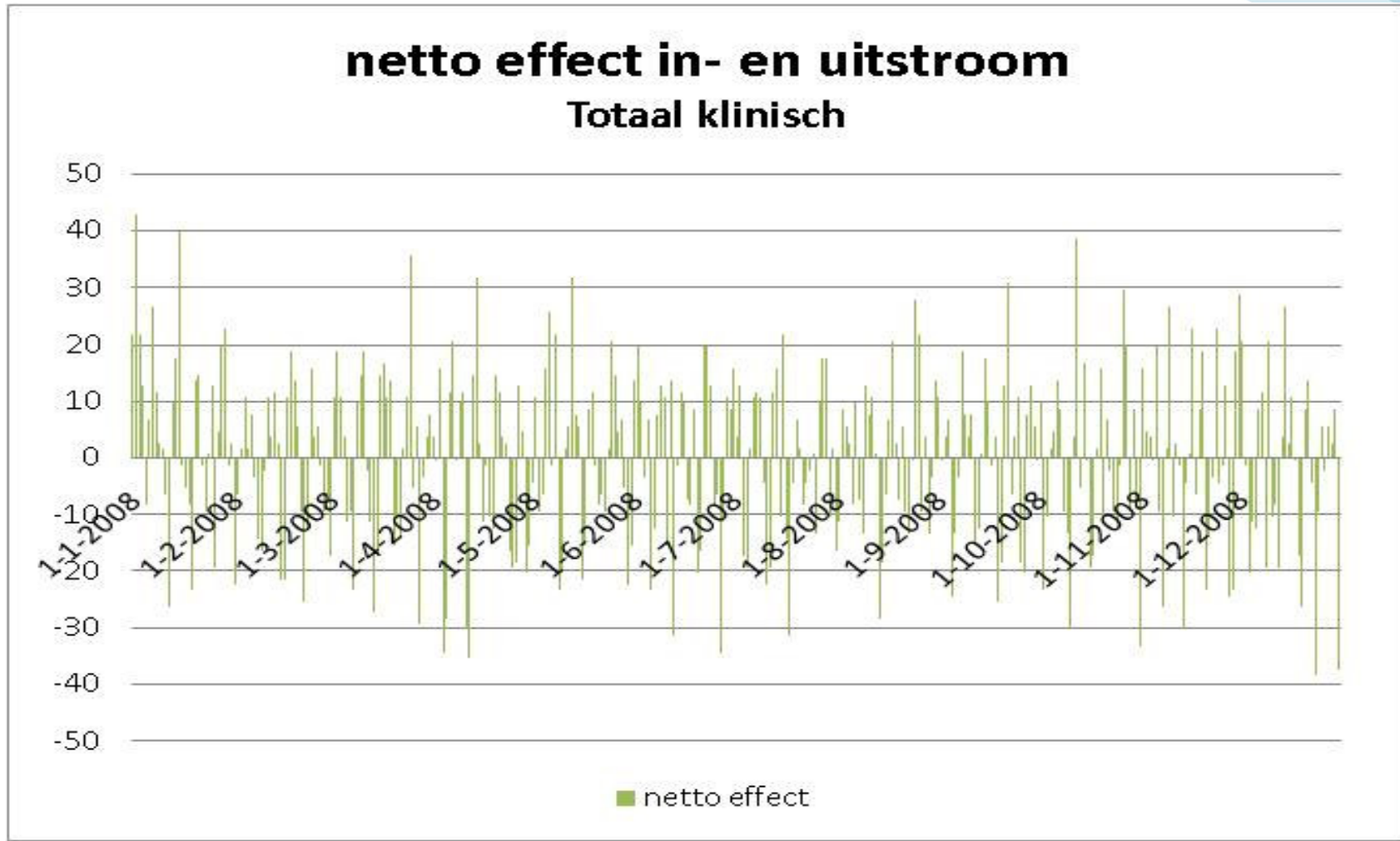
Ontslagdag naar opnamedag		Zondag	Maandag	Dinsdag	Woensdag	Donderdag	Vrijdag	Zaterdag
Beschouwend	Spoed	Vr	Vr/za/ma	Ma	Ma/di	Di/wo	Wo/do	Vr
	Electief	Di/wo	Do/vr	Vr/za/ma	Vr/za/ma	Ma	Di/wo	Di/wo
Snijvend	Spoed	Di/wo	Do/vr	Do/vr	Wo/do/vr	Ma/di	Ma/di	Vr/za/ma
	Electief	Di/wo	Do/vr	Vr/za/ma	Ma	Ma	Ma/di	Do/vr

## Analysis - Discharges

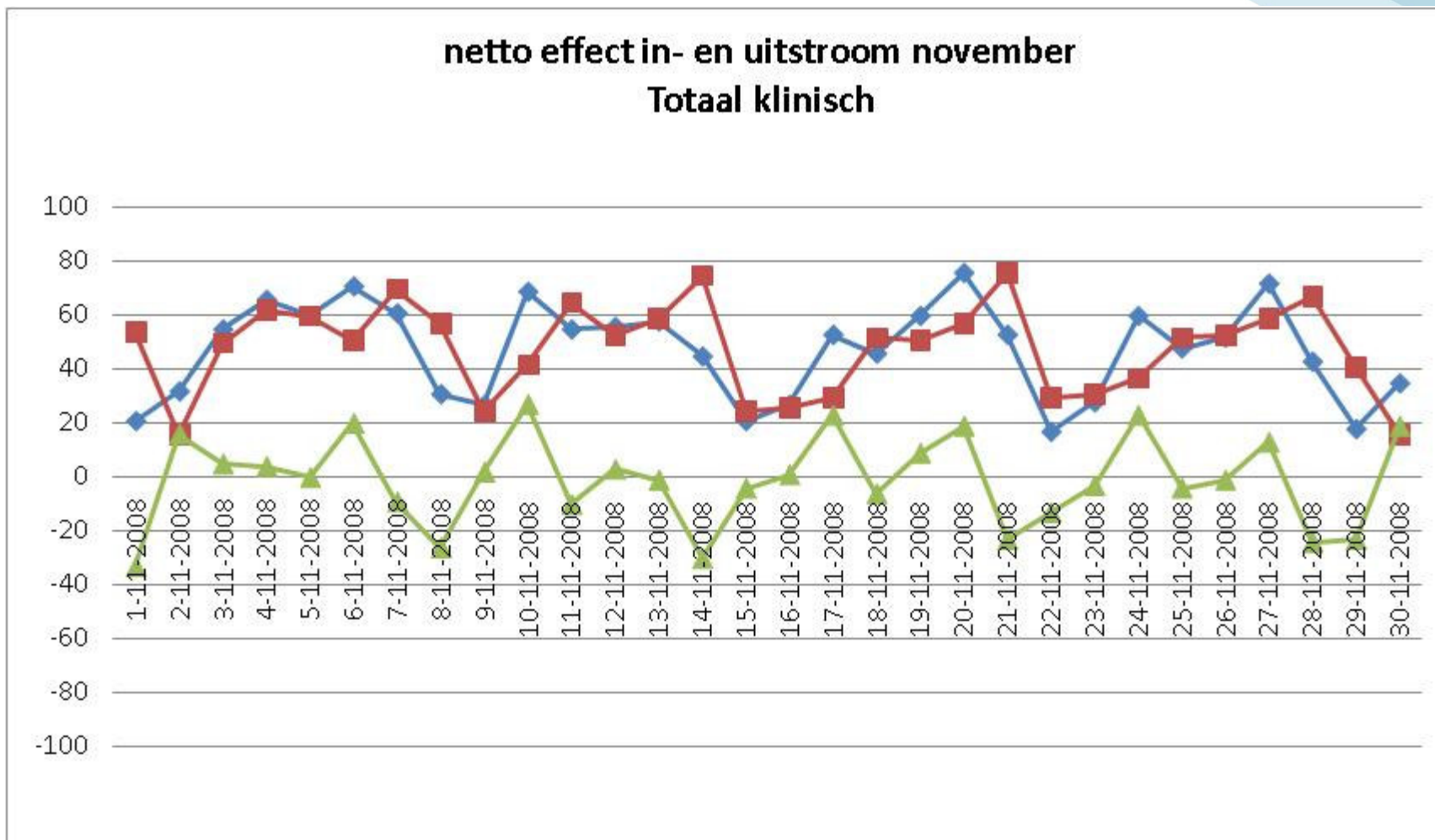
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- Significant relationship between length of stay and day of admission
- Increase in patients length of stay due to weekend effect
- 60% of total bed capacity is used for 20% of total number of patients (long stay patients)

## Analysis – Impact on capacity



# Analysis – Impact on capacity



## Degree of variability Rijnland

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This leads to...

- Unpredictable need for number of beds
- Every day inefficient working practices

## Degree of variability Rijnland

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What does this mean for Rijnland Ziekenhuis ...?

- Inefficient use of bed capacity
- Poor performance in production
- Unnecessary transfers
- Longer length of stay
- Chance of admissions closure
- Pressure of work
- Unnecessary mistakes

## Degree of variability Rijnland

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Significant causes...

1. Poor management of bed capacity: the planning of admissions needs to take into consideration the necessary bed capacity
2. No operational system currently in place to signal that hospital is running out of beds
3. Operating theatre and clinical wards are not working as one integral unit (focus on optimization OT)
4. Inefficient management of patient discharges (lack of projected discharge date)

## Degree of variability Rijnland

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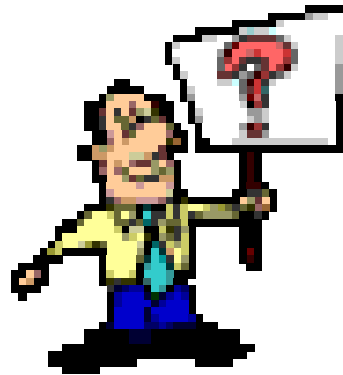
Significant causes...

1. Elective patient take higher priority than emergency patient
2. Allocation of beds is not optimal
3. Scale of clinical wards
4. Current practice of flexible ward
5. Shortage of suitable accommodation for discharged patient



# Intermission

- Can you help us with our problems?  
Solutions...?



# Proposals (1)

- New bed management
  - Allocation of bed in accordance with beds used on average
  - Allocation is based on current variability
  - Beds reserved only for “emergency” situations in hospital (“buffer”)
  - Close down flexible ward and short stay
  - Reduce by 30-35 beds and reduce nursing staff by circa 25 fte

## Proposals (2)

- Reduce variability in planned surgery admissions by
  - More efficient schedule for operating theatre (reallocated sessions)
    - Number of admissions is more stable
  - Fixed patient quota during operating time
    - Length of stay is taken into consideration

## Proposals (3)

- New fixed rules of admission
  - Admission on own ward or two related wards
  - Refuse admissions!
  - Patient needing specific care can only be admitted to associate ward
  - Doctor decides

## Proposals (4)

- Management of discharges
  - Daily patients visits by doctors
  - Management of discharges, patient gets estimated discharge date during admission
  - Daily bed capacity management
- Professional culture change is needed by medical staff

# Approach (1)

- Resizing needed due to poor financial situation
  - Commitment Board
- Evidence based analysis
  - Commitment from doctors
  - Results of analysis accepted by doctors

## Approach (2)

- At beginning of June 2009 presentation to Board and doctors
  - “go” decision
  - Planned start date July 1st 2009
- At beginning of June 2009 staff were informed
- At end of June work council asked for advice
  - Many questions during July and August
  - At the end of August agree on reorganisation

## Approach (3)

- In meantime....
  - Protocol followed with permission of work council
  - Operating scheme was changed
  - Quota for different specialities
- Doctors agreed to new admission rules at the end of September 2009
- At September 28th new clinic started with new allocations!



# Resultats (1)

- Realised cost reduction by EUR 1 million per year
- No loss of production
  - In October and November 2009 more admissions than in October and November 2008 (141 more admissions)
- No admission refusals due to reallocation!

## Results (2)

- **Successes?**
  - Operating theatre is changed
  - Daily capacity management
  - More clinical wards are managing discharges
  - New admission rules cause less patients to be transferred to their own ward
- **Improvements needed?**
  - Quota needs to be changed for some specialities
  - General ward has not required number of beds
  - Capacity and use of day care are not in accordance with production (variability)