Erasmus MC
University Medical Center Rotterdam

Nursing leadership and the quality of care

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The blind spot of quality indicators in nursing care

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prof. Ewout W. Steyerberg

Historical perspective

Florence Nightingale

- *"It may seem a strange principle to enunciate as the very first requirement in a hospital that it should do the sick no harm"*

- Chapter Hospital statistics, *1863 Notes on Hospitals*

Her dream on hospital statistics;

"enabling us to ascertain the mortality in different hospitals, as well as from different diseases and in different districts of the same country and improve the treatment and management of the sick and maimed poor"

.

Avedis Donabedian

Structure → Process → Outcome

Hospital performance; Quality and Safety

■ Transparency and accountability of delivered care using performance indicators

■ Performance indicators as a basis for

  ▪ public accountability

  ▪ external assessment

  ▪ supervision and purchase

  ▪ supporting patient choice

  ▪ internal management control

  ▪ quality improvement

Hartcentra 'Meetbaar Beter' breiden uit

KWALITEIT ATRIUMFIBRILLEREN HART- & VAATZIEKTEN ACADEMISCHE ZIEKENHUIZEN
HARTOPERATIES HARTRITMESTOORNISSEN AMPHIA ZIEKENHUIS
SINT ANTONIUS ZIEKENHUIS

585 x   0

De hartcentra die zijn aangesloten bij het project 'Meetbaar Beter' zijn uitgebreid van twee naar zes. Dat laten de centra vandaag weten.

In deze zes hartcentra worden de uitkomsten gemeten van hartoperaties. Door het gebruik van dezelfde meetmethode zijn de uitkomsten onderling vergelijkbaar. Op dit moment richten de centra zich op kransslagaderlijden en boezemfibrilleren, de meest voorkomende hartaandoeningen. Het ligt in de verwachting dat binnen drie jaar voor vrijwel alle patiëntgroepen de belangrijkste uitkomstindicatoren zijn geselecteerd. De centra zeggen transparant te willen rapporteren over de resultaten van de door hen verleende zorg.

Foto: Lex van Lieshout

Issues associated with performance measure

- Definition of the concepts

- Quality of the data

- Gaming

- Influence of confounding factors in comparing hospitals
    - random variation
    - case mix
- Quality improvement

DEATH RISK AT TOP HOSPITALS

THE risk of dying after surgery or a heart attack varies dramatically depending on which hospital treats you, a government report said yesterday.

And death rates are highest at some of Britain's top medical centres including Royal Brompton and Harefield heart hospitals and the Royal Marsden cancer hospital. But last night experts warned the figures were dangerously misleading because they fail to compare patients with the same background, general health or severity of illness.

Health Secretary Frank Dobson said it was unfair to use the figures to compare hospitals. The aim was to ensure patients get the same care no matter where they live. He said: "It's not a league table or a Which consumer guide to hospitals for patients.

"Hospitals will look at variations and ask questions."

● THE World Health Organisation has called for a ban on smoking in all public places used by children.

By JILL PALMER
Medical Correspondent

Aim of this research

Evaluating the use of outcome and process indicators in comparing hospitals and in improving the quality of hospital care

Project and Methods

1. **Hospital comparison**

    - Random variation, outcome indicators Dutch Inspectorate

      - Graphical displays random variation

      - Rankability

        - Variation within the hospital

        - Variation between the hospitals

    - Case mix, data on surgical site infections

   *Rankability*
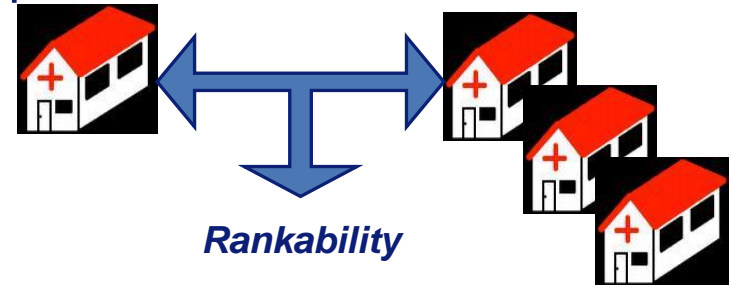
2. **Process outcome relation**

    - Pressure ulcers and quality of prevention; audit case control study

3. **Actionability; Improving quality**

    - Door-to-needle time in Stroke patients; interrupted time series analysis

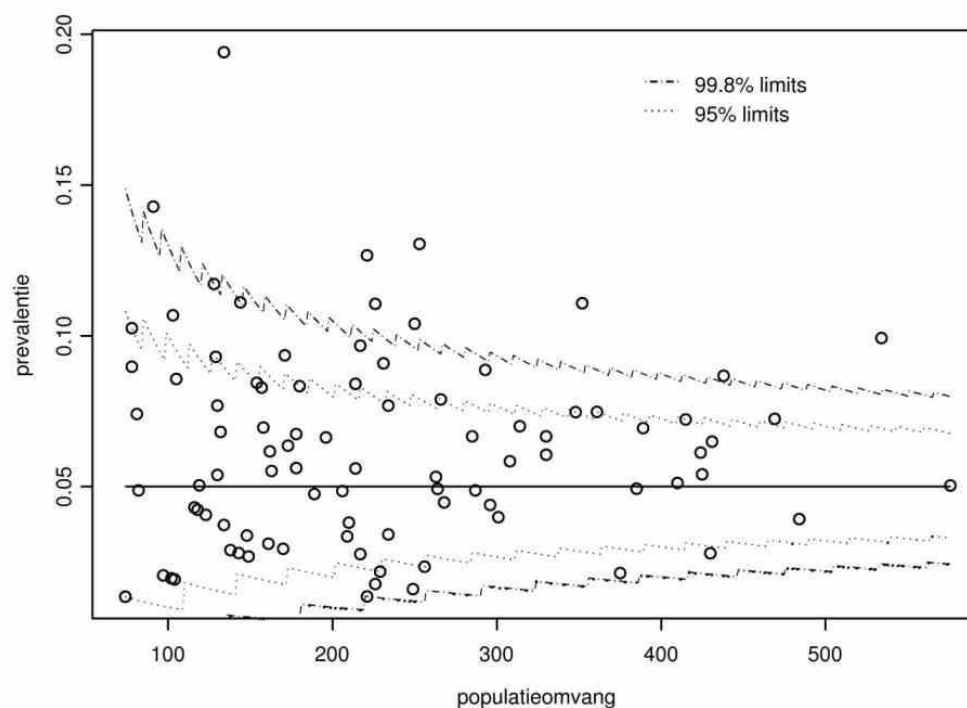   - Improving pressure ulcer prevention; interrupted time series design

Random variation
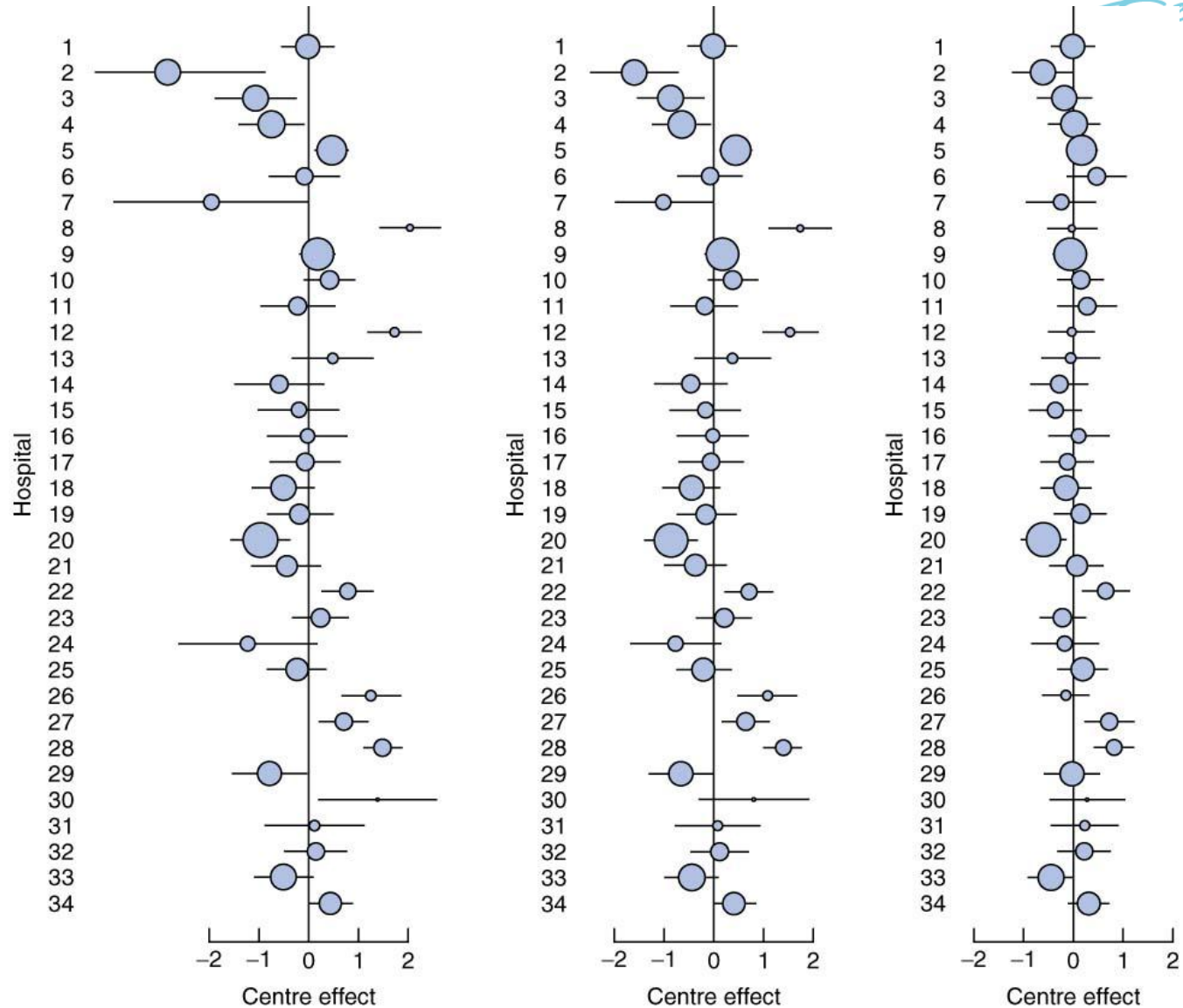

mortaliteit ischemisch CVA 65 en ouder

Overall SSI Rate

decubitus prevalentie ziekenhuisbreed
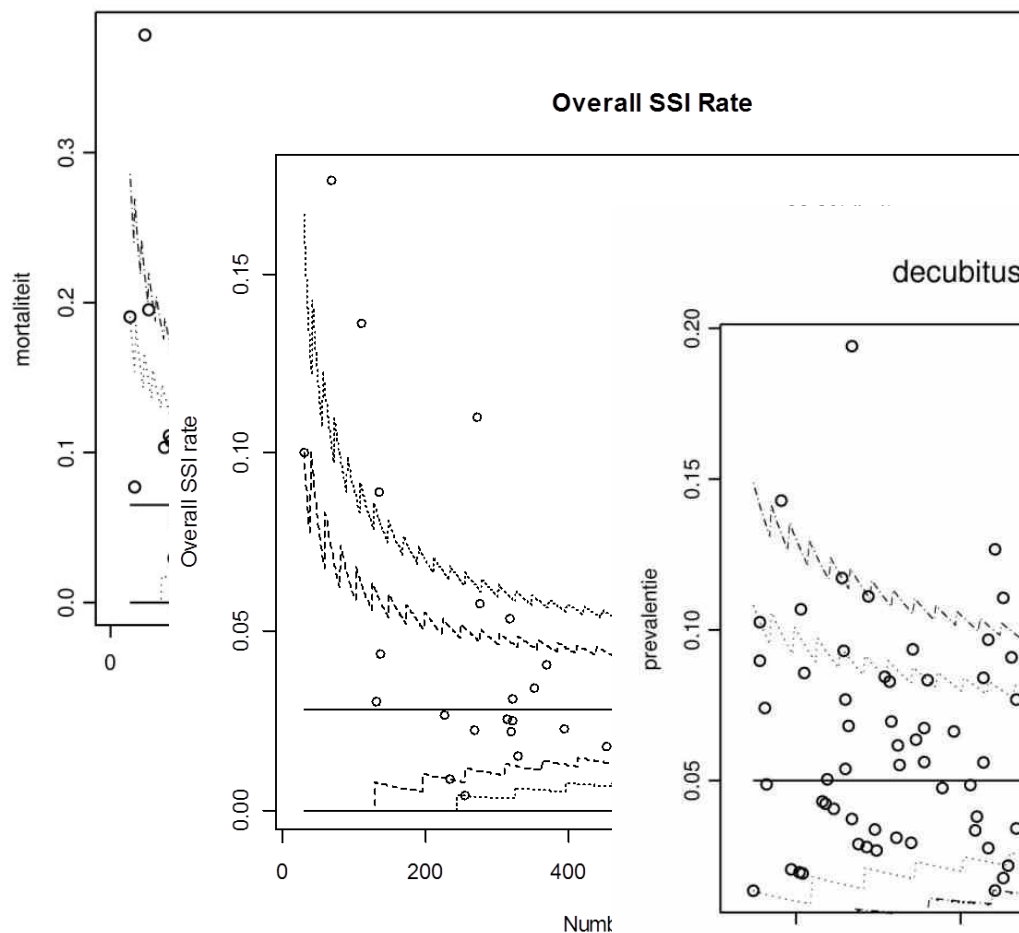
- *lack of differences in outcome*
- *small numbers in patiënt population*

van Dishoeck, A. M., Looman, C. W., van der Wilden-van Lier, E. C., Mackenbach, J. P., Steyerberg, E. W. (2011). BMJ Qual Saf, 20(8), 651-657.
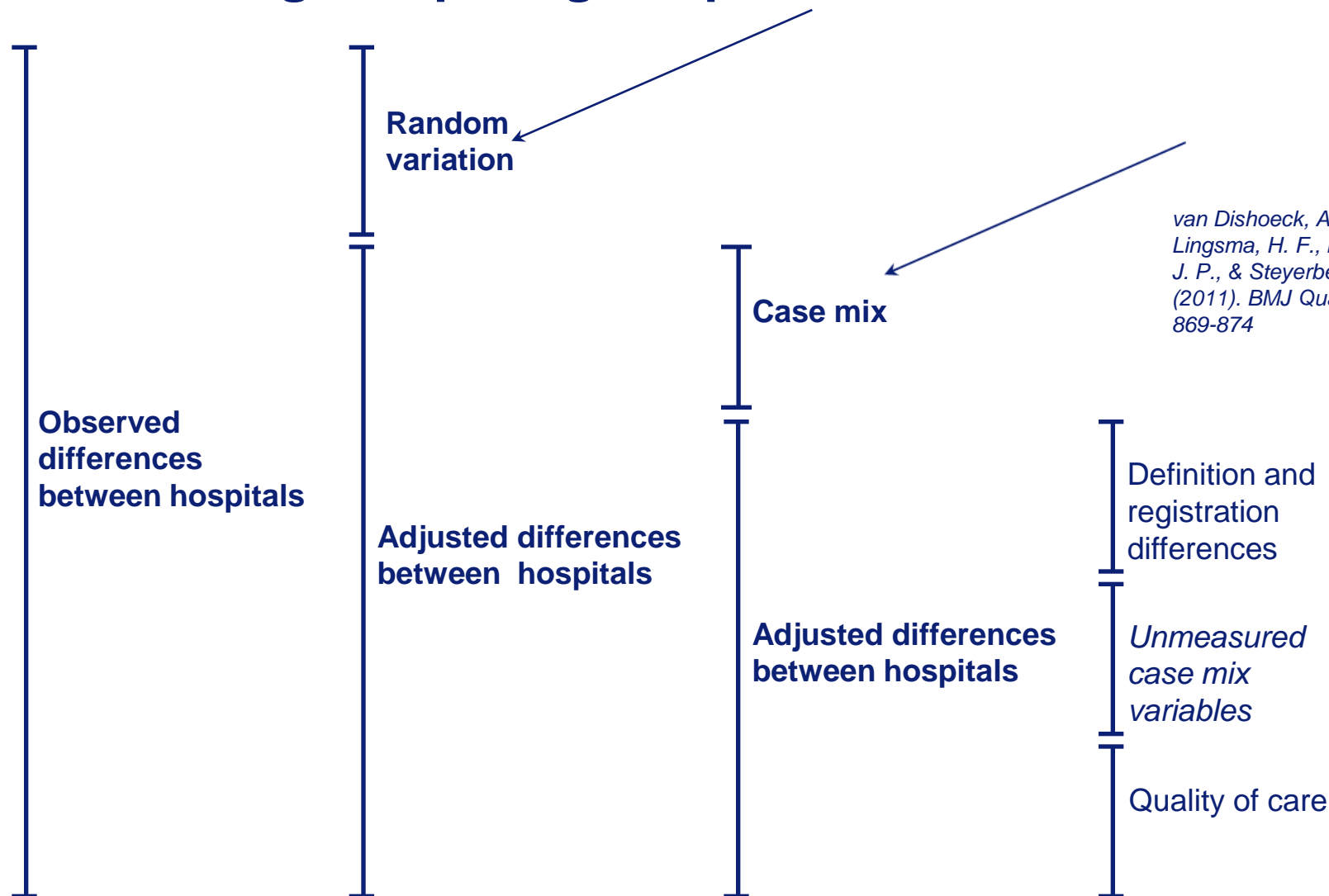
Case mix

a Fixed unadjusted   **b** Random unadjusted   **c** Random adjusted

van Dishoeck, A. M., Koek, M. B., Steyerberg, E. W., van Benthem, B. H., Vos, M. C., & Lingsma, H. F. (2013).. Br J Surg, 100(5), 628-636;
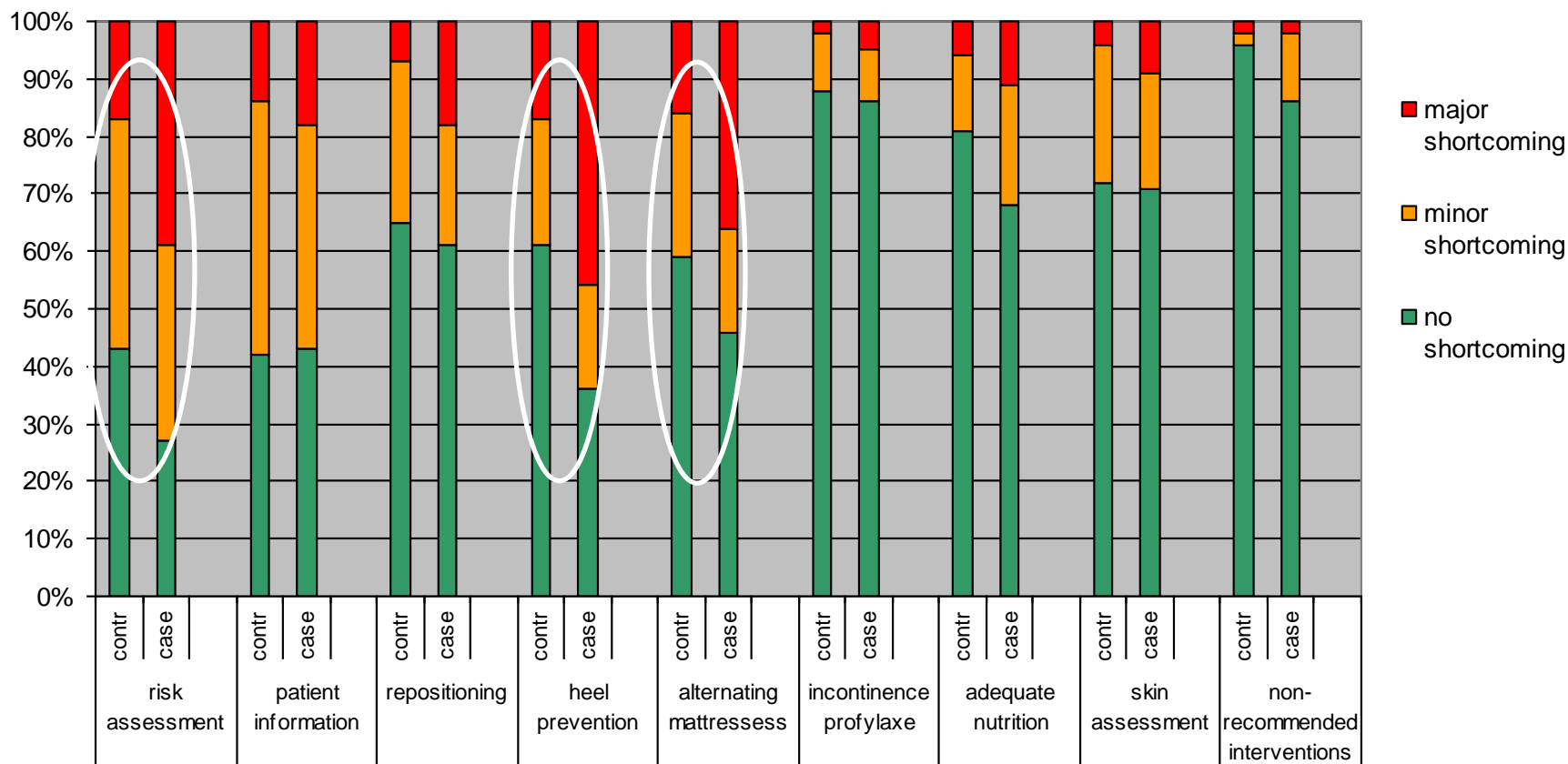
Summarizing comparing hospitals

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Random variation

Case mix

van Dishoeck, A. M., Lingsma, H. F., Mackenbach, J. P., & Steyerberg, E. W. (2011). BMJ Qual Saf, 20(10), 869-874

Observed differences between hospitals

Adjusted differences between hospitals

Adjusted differences between hospitals

Definition and registration differences

Unmeasured case mix variables

Quality of care

Comparing hospital performance without indication of uncertainty and without correction for patient factors is impossible
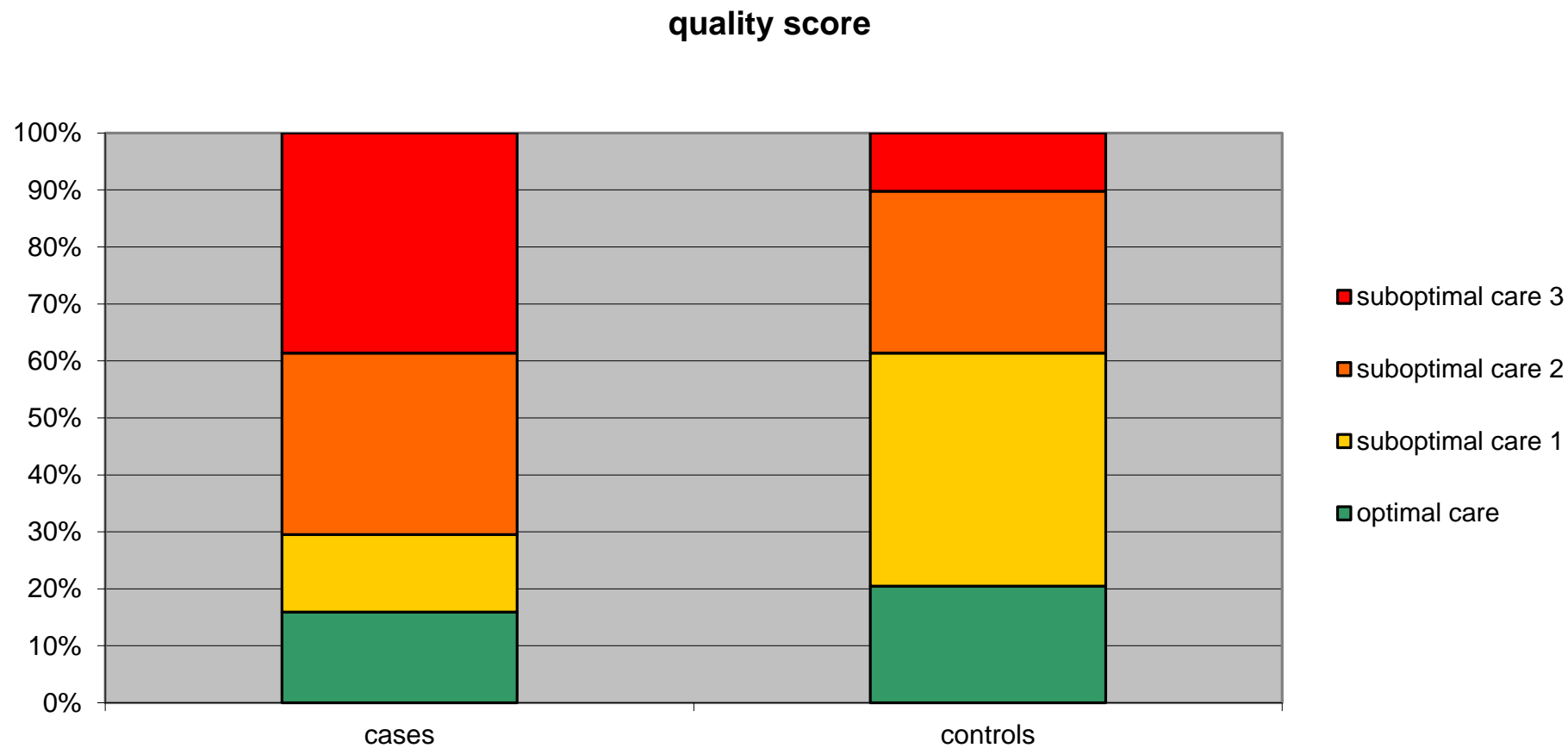
Process-outcome relation

- Pressure Ulcer prevalence; a case control study

Assessment of the care process with 9 criteria

Quality score

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quality score

Legend:
- suboptimal care 3 (red)
- suboptimal care 2 (orange)
- suboptimal care 1 (yellow)
- optimal care (green)

X-axis: cases, controls

Y-axis: 0% – 100%

Conditional logistic regression analysis

Variables	Univariable			Multivariable		
	OR	CI	p-value	OR	CI	p-value
Quality score	2.0	1.3-3.1	0.001	1.9	1.1-3.3	0.032
PU risk score	1.3	1.2-1.5	<0.001	1.3	1.1-1.5	0.018
Illness type (benign/malign)	3.3	1.2-9.3	0.014	4.3	0.9-20.1	0.067
Care needs before admission	2.6	1.2-5.6	0.014	2.3	0.7-7.1	0.15
Number of care problems	1.6	1.2-2.1	0.003	1.2	0.8-1.8	0.34
Age per decade	1.6	1.2-2.0	0.001	1.2	0.8-1.7	0.51
IC admission during stay	3.9	1.4-11	0.011	1.4	0.3-6.7	0.71

PU- Pressure Ulcer

van Dishoeck, A. M., Looman, C. W., Steyerberg, E. W., Halfens, R. J., & Mackenbach, J. P. (2016). J Adv Nurs.

Improving quality

- Acute care in stroke patients; door-to needle time
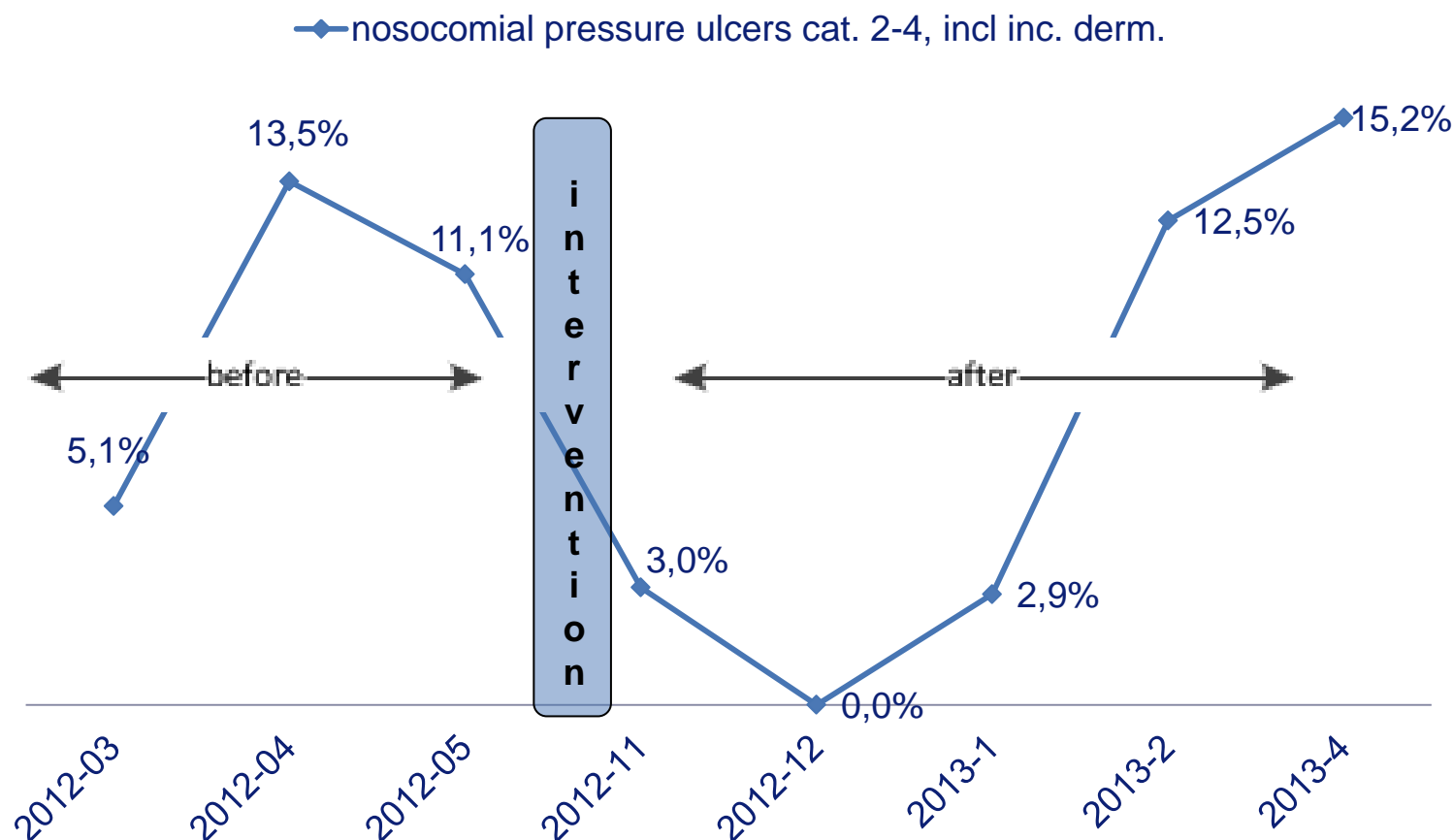
Database Erasmus Stroke Registry
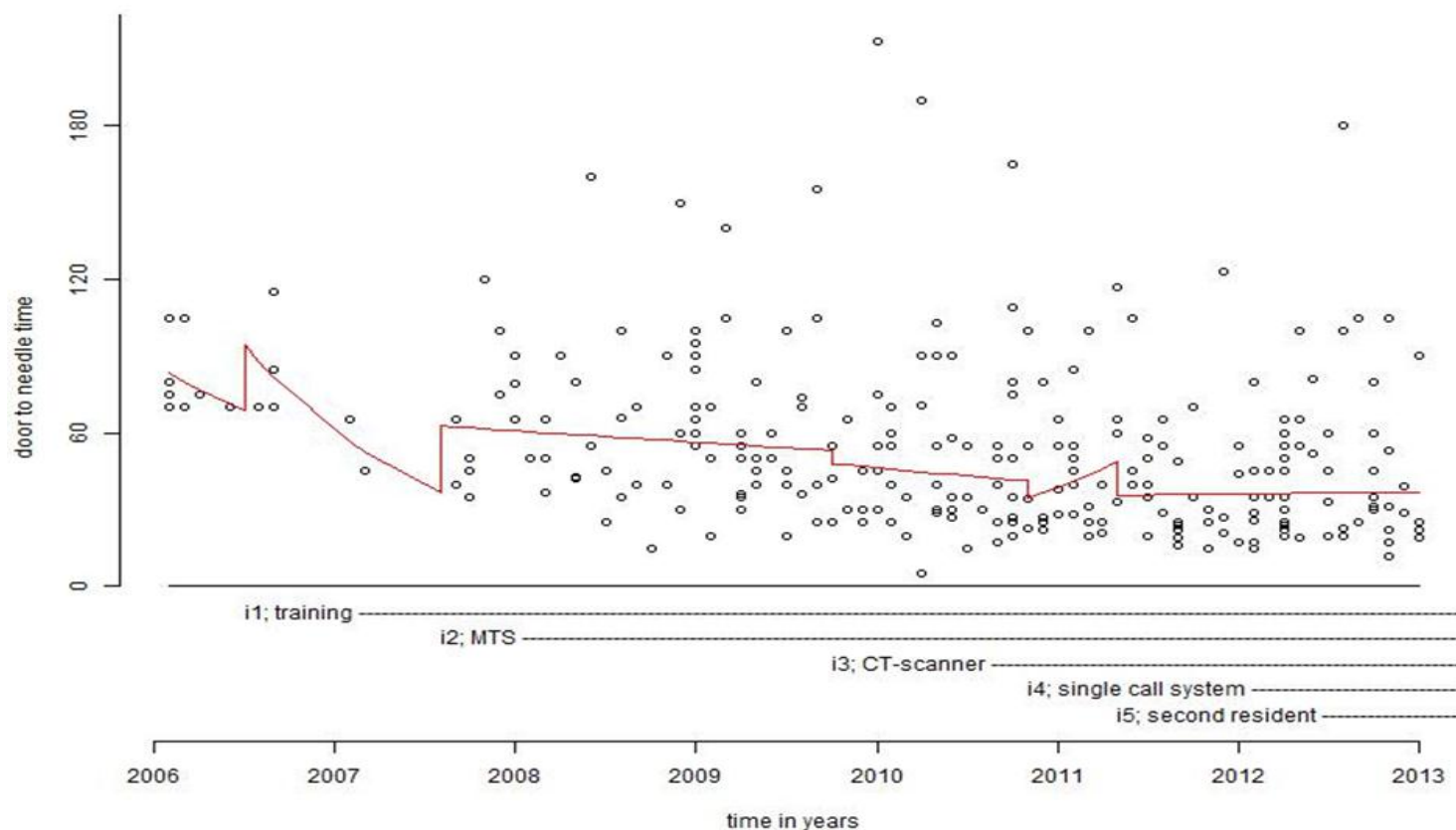
van Dishoeck, A. M., Dippel, D. W., Dirks, M., Looman, C. M., Mackenbach, J. P., & Steyerberg, E. (2014). Cerebrovascular Diseases Extra(4), 149-155

Improving Quality of Care

- Segmented regression analysis of an interrupted time series

- Pressure ulcer prevention; outcome indicator

Data Erasmus MC University Medical Centre

Improving Quality of Care

- Pressure ulcer prevention; process indicator

Conclusion; For internal quality improvement, process indicators seem to be more informative than outcome indicators.

van Dishoeck, A. M., Steyerberg, E., van Lanschot, J. J. B., Hovius, S. E. R., & Mackenbach, J. P. (2016). to be submitted.
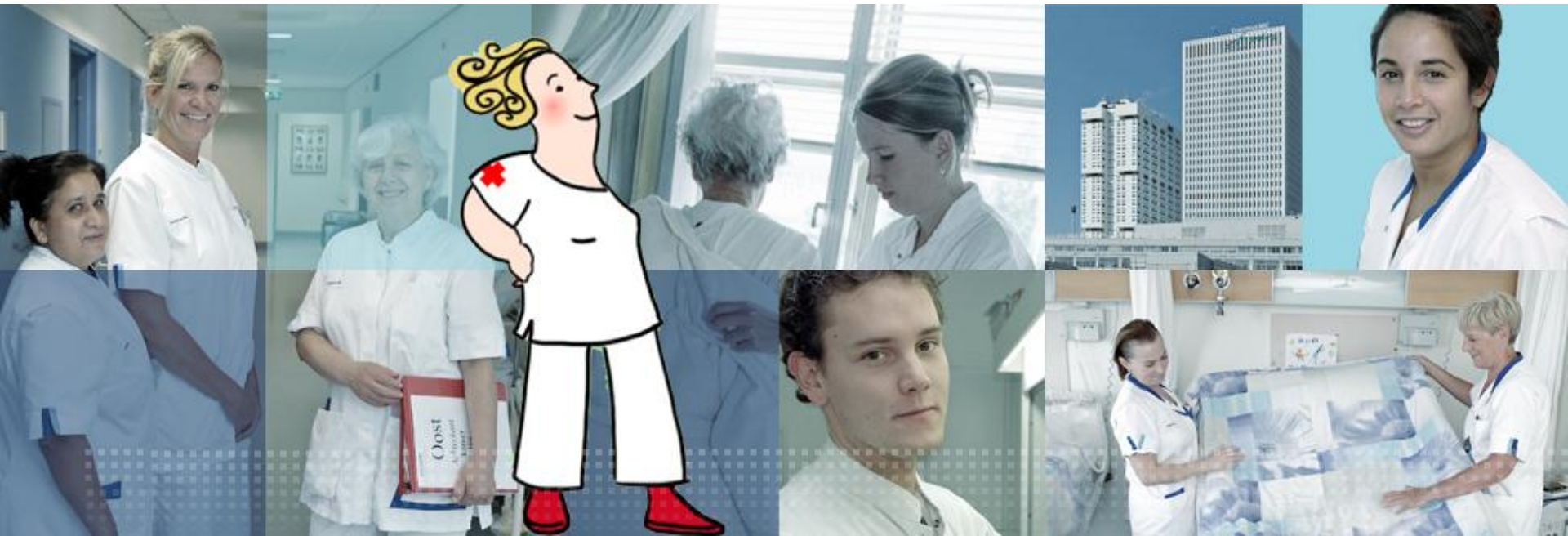
Conclusion

- We must be aware that a performance indicator may offer an uncertain signal on quality and is by no means an absolute measure
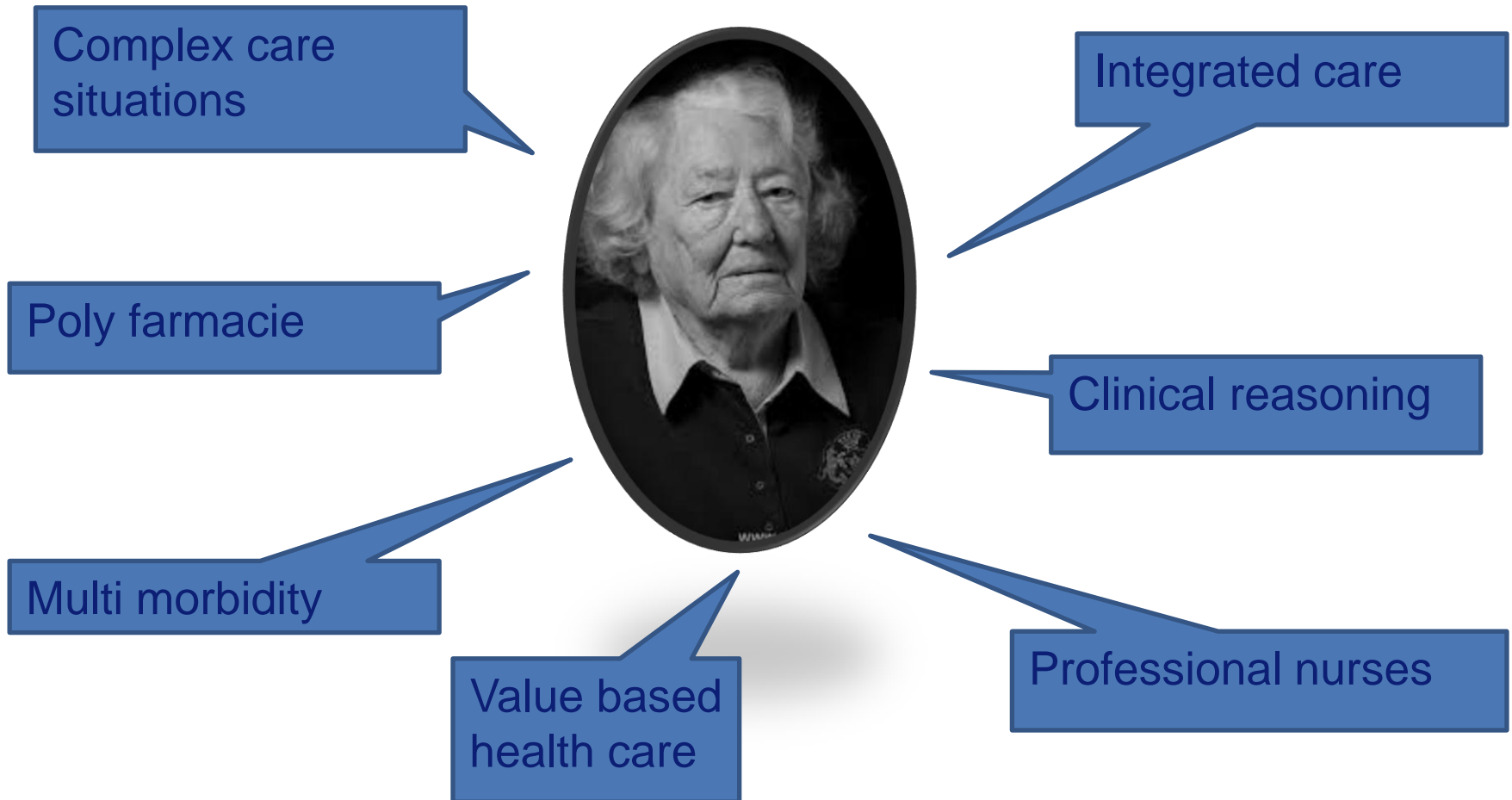
- Nursing leadership; Measuring what Matters
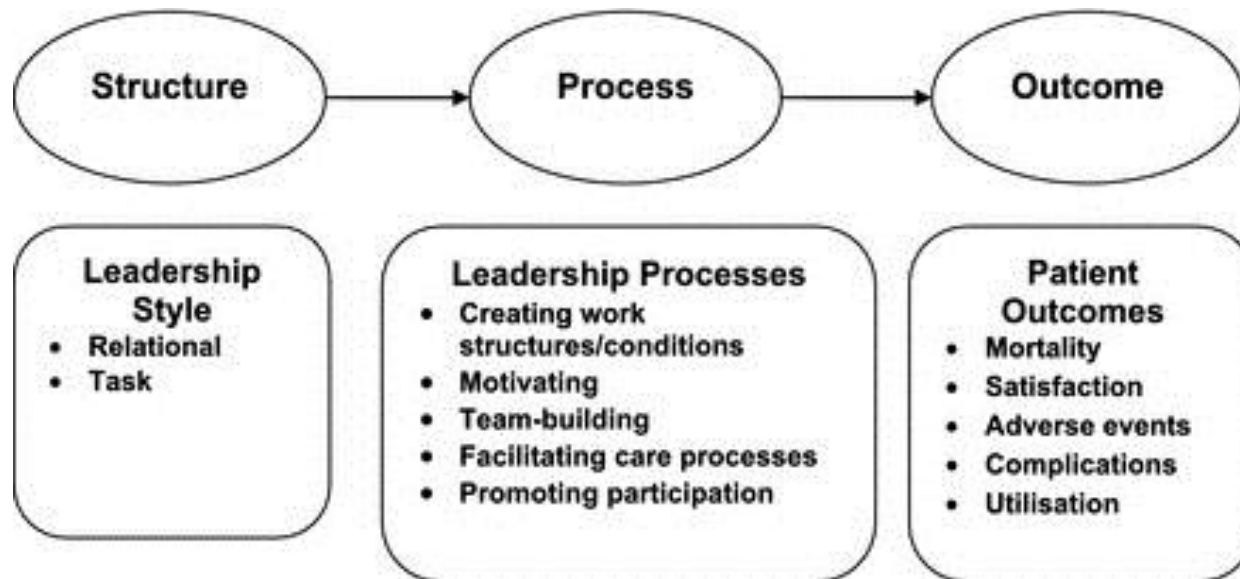
Wong, C. A., Cummings, G. G., & Ducharme, L. (2013). The relationship between nursing leadership and patient outcomes: a systematic review update. J Nurs Manag, 21(5), 709-724.

The professional nursing work environment: the experience of Dutch nurses in a university hospital

SM Maassen RN MSc, MMC van Mol RN MSc,

CM Dekker-van Doorn PhD.

Care to elderly

Complex care situations

Integrated care

Poly farmacie

Clinical reasoning

Multi morbidity

Value based health care

Professional nurses

Professionale nurses in professional workenvironment

'A setting that support excellence and decent work. In particular, they strive to ensure the health, safety and personal wellbeing of staff, support quality patient care and improve the motivation, productivity and performance of individuals and organisations' (ICN, 2008).

Professional nursing work environment
1) Nurse involvement in organization policy
2) Nurse vision and policy on quality of care
3) Nurse managers with appropriate skilss, leadership style and support
4) Adequate staffing and resources policy
5) Nurse-doctor relations based on equality
(Lake, 2002; Arford & Zone-Smith, 2005; Laschinger, 2008)

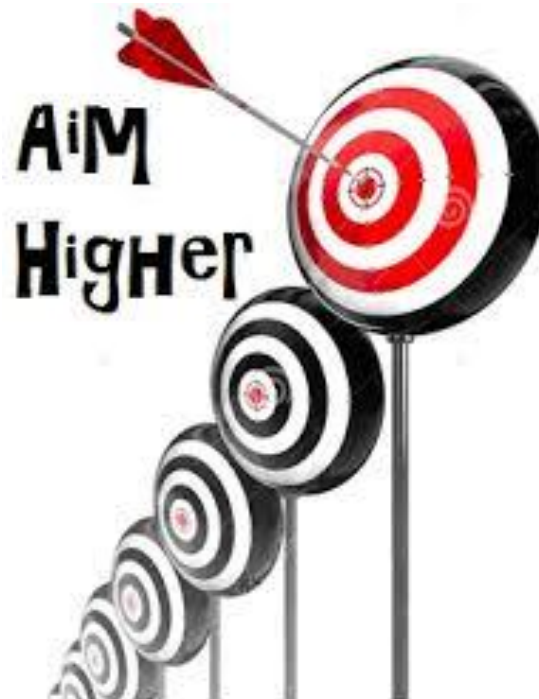# Professional work environment: local situation

+/- 2200 nurses
270.000 nursing days
9 thema's, 6 with nurses

Foundation nursing council, development professional practice model

Aim

To explore the nurses´ perception of their professional nursing work environment.

Method

- Cross sectional survey
- 1 hospital
- PES-NWI
- Dutch translation

Results Descriptives

	n	Mean (SD)	
Age	631	41,74 (12,16)	
Workexperience	630	18,05 (12,04)	
			%
Gender	632	Male	12,2
		Female	87,8
Function	632	Student	1,9
		RN	25,6
		Senior RN	18,5
		Teammanager	6,2
		Specialized RN	18,0
		Senior specialized RN	13,8
		Consultant	6,0
		Nurse practicioner	5,4
		Other	4,6
Worklocation (thema)	632	Daniel	15,0
		Dijkzigt	19,8
		Hersenen & zintuigen	9,0
		Sophia	32,1
		Spoed, peri-operatief, intensief	13,1
		Thorax	9,2
		Overige	0,3
Basic education	632	Inservice-A	36,6
		MBO-V	15,8
		HBO-V	41,3
		Student	1,4
		Other	4,9
Following education	632	Yes	75,0
		No	25,0

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Results
ANOVA

Setting	n	Total Mean (sd)	Oncology	Medical-surgical	Neurology	Children	Acute care	Cardio-surgical	Sig
Nurse Participation	629	2,62 (.33)	2,60 (.32)	2.60 (.37)	2,55 (.34)	2,64 (.32)	2.59 (.27)	2,63 (.37)	.207
Nurse QoC	608	2,69 (.33)	2,81 (.32)*	2,68 (.34)	2,66 (.37)	2,69 (.30)	2,62 (.29)*	2,62 (.31)*	.001
Nurse leadership	607	2.77 (.49)	2,74 (.50)	2,74 (.54)	2,79 (.51)	2,78 (.45)	2,84 (.46)	2,76 (,55)	.179
Staff & resources	606	2.34 (.53)	2,23 (.47)*	2,23 (.59)*	2,41 (.49)	2,32 (.50)	2,53 (.51)*	2,45 (.53)	.001
Nurse-physician relationship	607	2,93 (.43)	2,95 (.46)	2,91 (.46)	3,00 (.35)*	2,97 (.40)*	2,77 (.51)*	2,91 (.39)	.016

Age	Total Mean (sd)	19-35 Mean (sd)	36-50 Mean (sd)	51-66 Mean (sd)	Sig p
Nurse Participation	2,62 (.33)	2,62 (,32)	2,60 (,34)	2,60 (,33)	,582
Nurse QoC	2,69 (.33)	2,70 (,34)	2,68 (,31)	2,68 (,32)	,917
Nurse leadership	2.77 (.49)	2,73 (,49)	2,79 (,49)	2,79 (,48)	,270
Staff & resources	2.34 (.53)	2,23 (,52)	2,37 (,56)	2,43 (,49)	,001*
Nurse-physician relationship	2,93 (.43)	2,96 (,39)	2,94 (,45)	2,88 (,46)	,150

Discussion

Dutch-PES: reliability

Interventions?

Implications

- Practice

  - Discussion about staff & resources

  - Learning from eachother

  - Gaining more influence on content of practice

  - Interventions

- Research

  - Link to quality outcomes?

  - Longitudinal study

THE INFLUENCE OF EMPATHIC ABILITY AND AUTONOMY ON SUSTAINING WORK ENGAGEMENT AMONG INTENSIVE CARE NURSES

Margo van Mol

Psychologist and ICU nurse

06-10-2016

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The Netherlands Institute for Health Sciences (NIHES), Rotterdam

Frail elderly in the intensive care unit (ICU)

More than half of the current ICU population is aged 65 or above, using 60% of total ICU days

Complications of elderly ICU patients

- More comorbidity
- Higher rates of delirium
- Higher mortality rate
- Higher expenditure of healthcare costs

Morally decision making

Work-related stress

FIG 1. 180-Day survival plot for three groups of patients
Abbreviation: ICU = intensive care unit
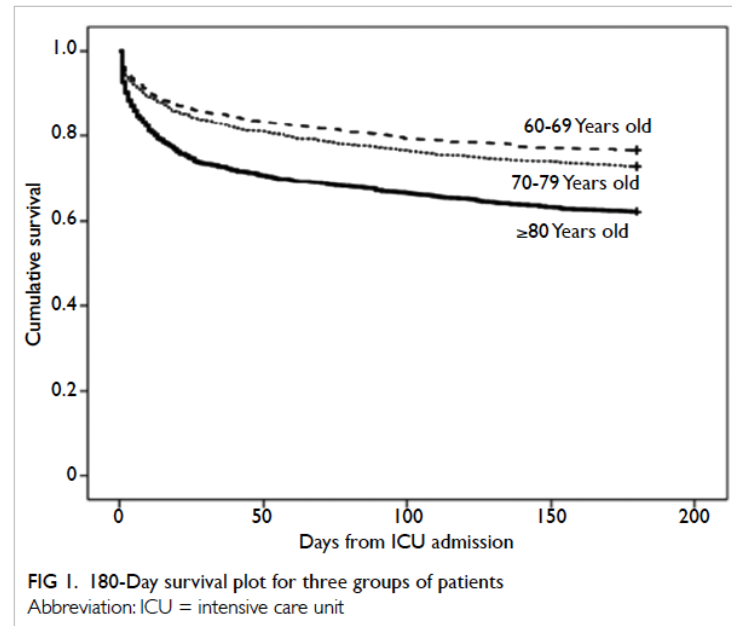
Bagshw et al., (2016) Critical Care 20:175
Riou and Boddaert, (2015) Critical Care Med:231-232
Nicoll et al., (2003) JAGS 51:591-593

Work-related stress in nurses

Working as a nurse

| increasingly complex and emotionally demanding | a damaging effect on individual´s job satisfaction | results in long-term absenteeism | subsequent hospital understaffing |
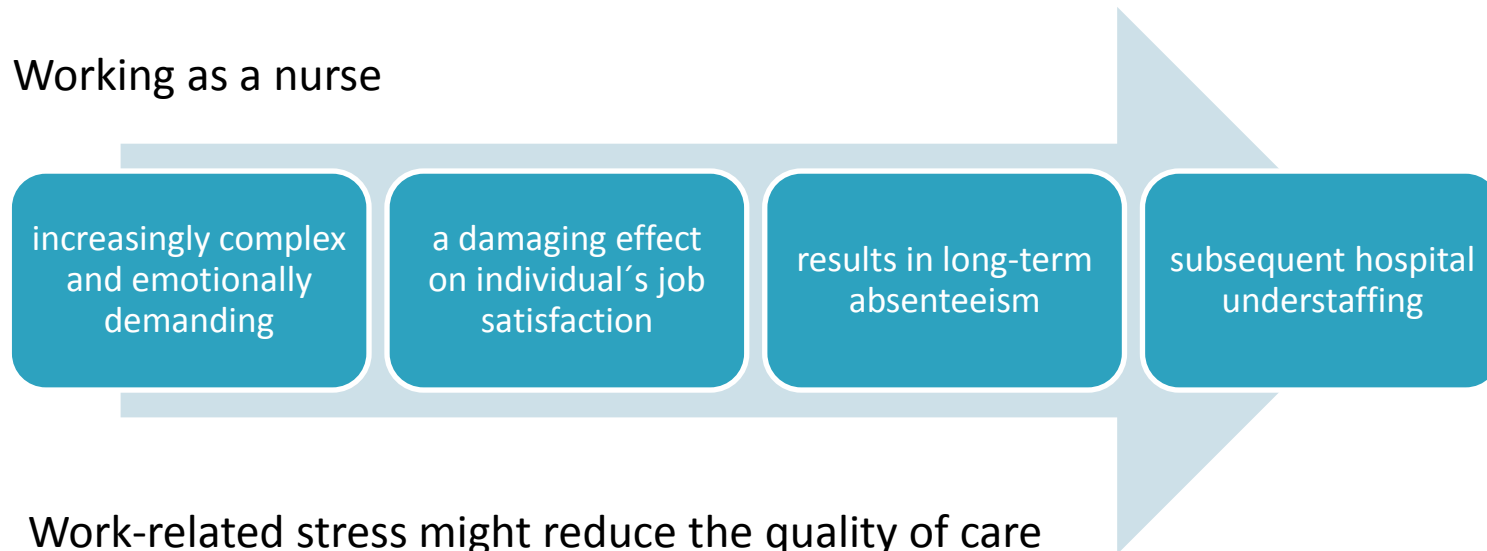
Work-related stress might reduce the quality of care for patients and relatives and threaten patient safety

Moss M, et al., (2016) CHEST Journal 150(1):17-26

Work engagement, a counterbalance to work-related stress
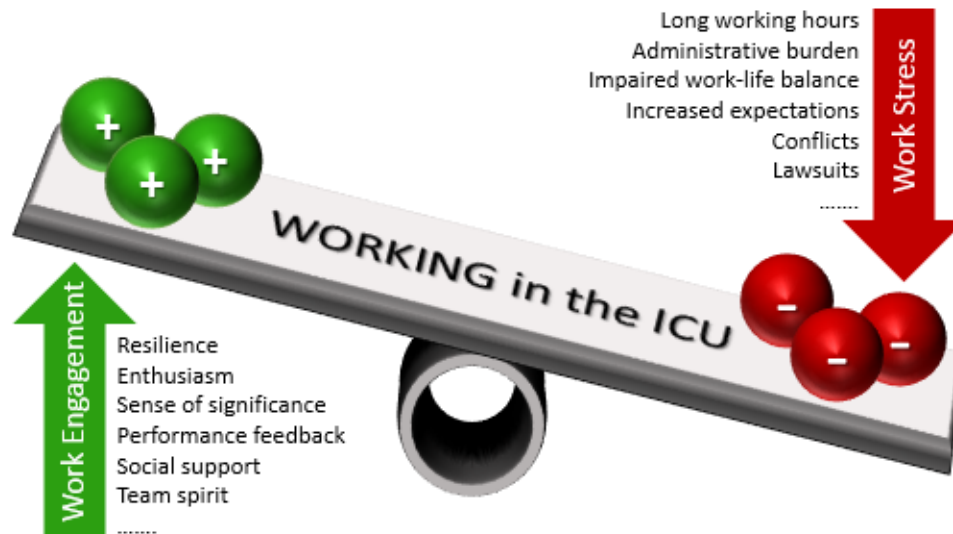
The aim of this study is to explore the association between personal resources and work engagement among the ICU professionals.

Work engagement

- Defined as:
  - Vigour
  - Dedication
  - Absorption (flow)

Schaufeli WB, et al., (2002) Journal of Happiness studies 3(1):71-92
Schaufeli, W.B. and A.B. Bakker, (2004) Journal of organizational Behavior 25(3):293-315

Benefits high level of work engagement

- Positive effect on own health
- Good balance of work-life
- Low absenteeism
- High team spirit
- Safe work environment (patients and professionals)
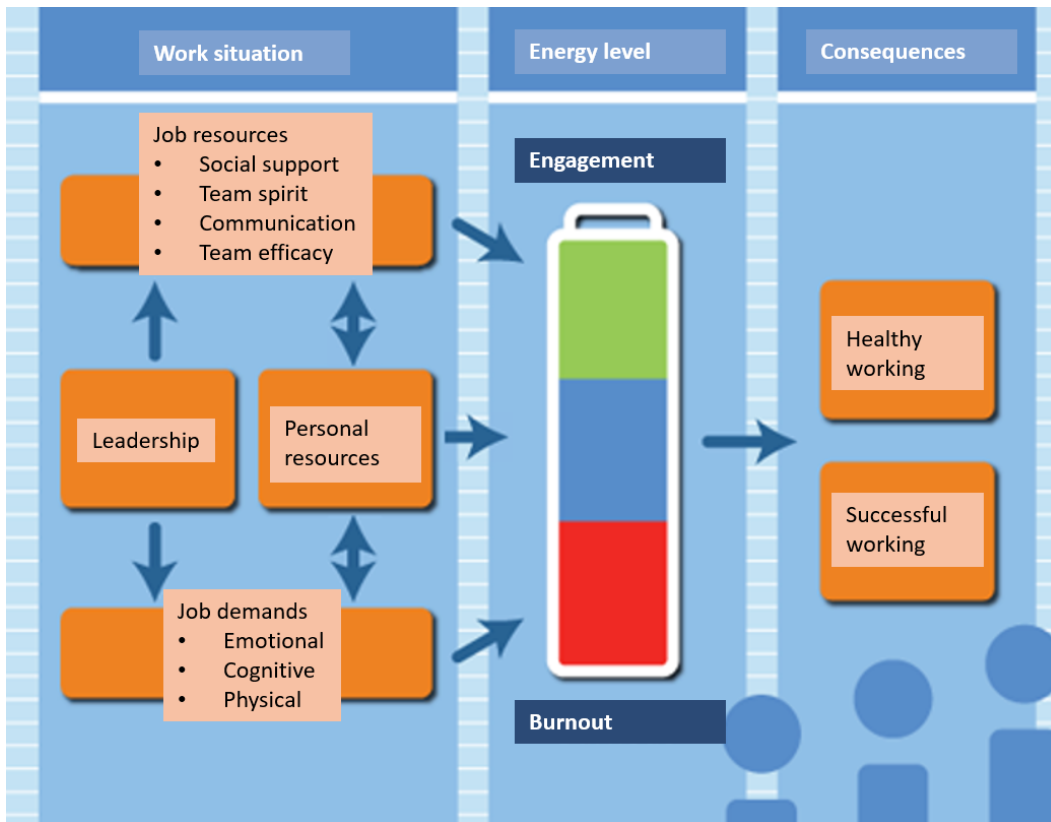- High quality of care
- Improve patient satisfaction
- Organizational involvement

How to influence this process?

- Inspiring work environment
- Development of personal leadership

Engaged daily practice of caring to frailty elderly

Job-Demands-Resources Model [1,2]

Balanced model with positive and negative aspects of work :

- **Motivational process**
- **Stress process**

1. Bakker AB, (2011) Current Directions in Psychological Science 20(4):265-269.
2. Schaufeli WB, Taris TW, (2014) Springer:43-68.

Personal resources

Personal leadership

- Resilience
- Autonomy

Empathic ability

- Cognitive
- Emotional
- Perspective taking

Cross-sectional study design

- Inclusion:
  - All ICU nurses and ICU nurse students (N= 262), all intensivist (N=53)
  - More than 12 hours/week working in an ICU in Erasmus MC

- Method
  - Composed questionnaire with Utrecht Work Engagement Scale and the Jefferson Scale of Physician Empathy
  - Announcement and introduction by management team
  - Anonymity guaranteed
  - Personal invitation with digital link to the questionnaire
  - Weekly response per unit in the newsletter
  - Reminder at non-response, max 3x
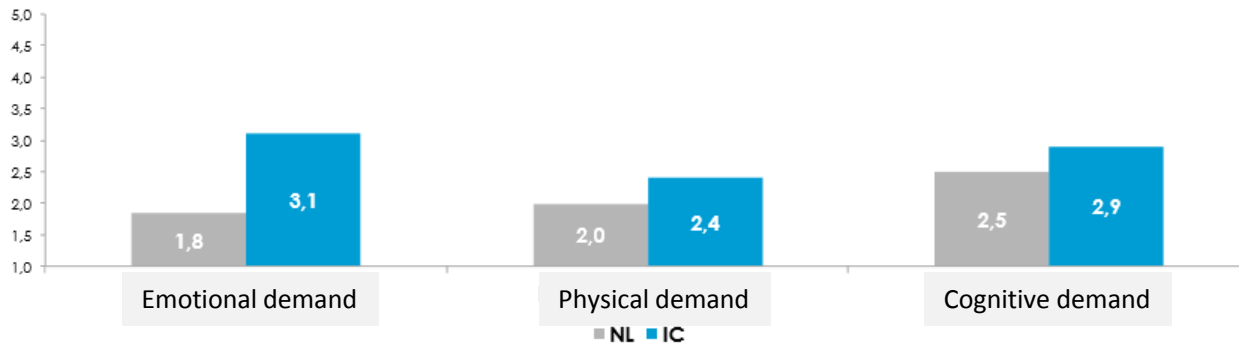 - Individual report with feedback of results

Energiekompas

Respondents

- Response rate 61%

Unit	Eligible	N	%
ICV-1	46	29	63%
ICV-2	81	41	51%
ICV-3	81	44	54%
ICCU	54	43	80%
Intensivists	53	32	60%
Total	315	193	61.3%

- Characteristics of respondents

68%	32%	43,4	54%	34 hr/wk
Gender		Age	A-level	Working hours
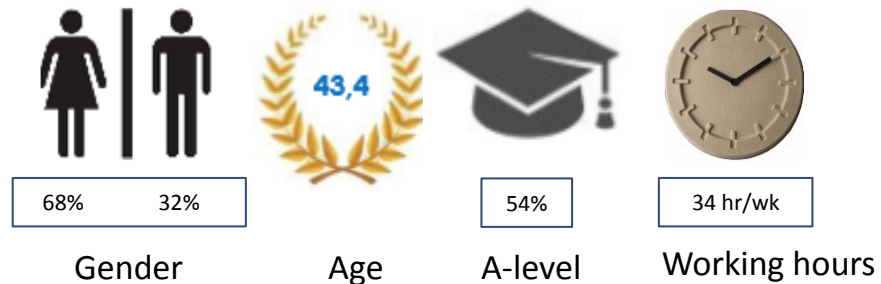
Job demands

Work load too high 3.1%
(NL 3.6%)

Work engagement
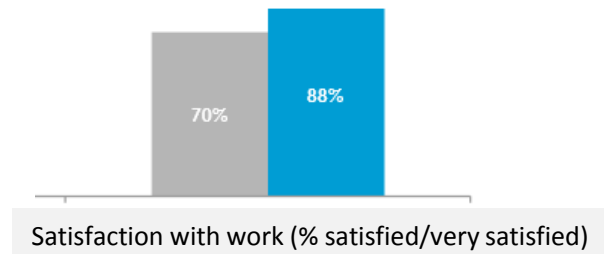
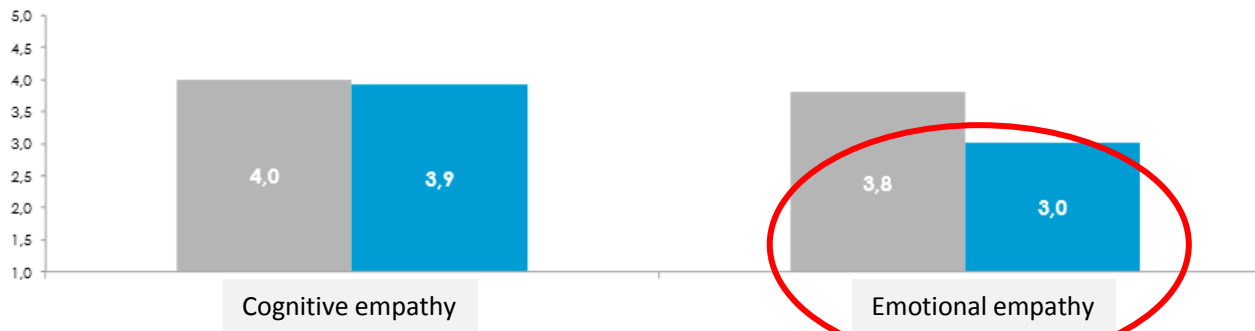Weekly working hours remained as a confounding factor on work engagement
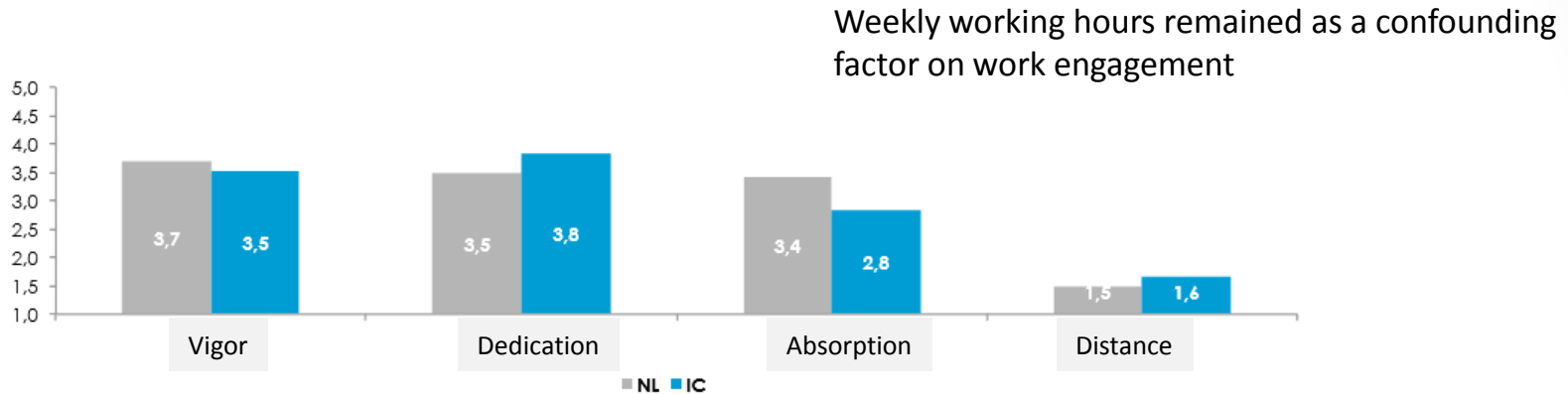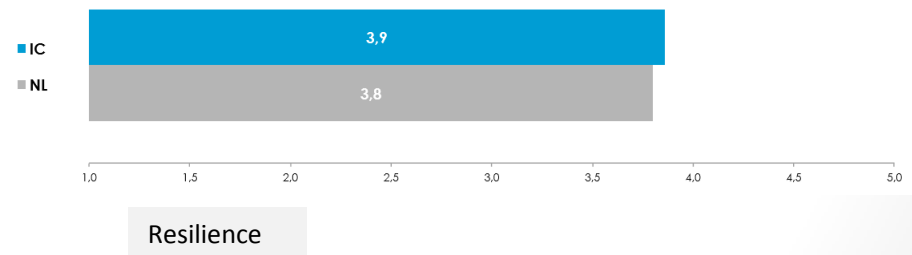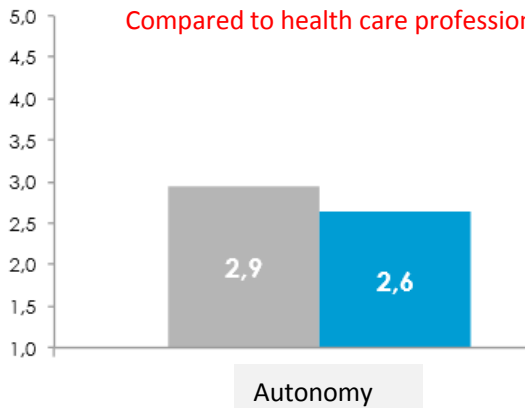

Overall the same results in job resources (social support, communication, team efficacy, team spirit) compared to the benchmark

Personal resources

Cognitive empathy

Emotional empathy

NL IC

Compared to health care professionals

Autonomy

Resilience

Personal leadership will shape the role of nursing and may increase sustaining work engagement.

Conclusion

- The physical and emotional workload in the ICU may have been high, but the personal resources seemed to suffice for the respondents
  - "Business as usual"

- ICU professionals respect the patients and relatives, they can imagine the situation, but remain at a certain emotional distance
  - This might be a protective reaction for their own emotional health

- Nurses should present personal leadership in the complex care to frail elderly and their relatives, however this is "work in progress"

Questions?