

A tailored Audit & Feedback intervention with an action planning tool to facilitate appropriate antibiotic use in the ICU: a study protocol

Daphne Stegink, Department of Medical Informatics,
Amsterdam UMC
Audit & Feedback

M. Blom, N.F. de Keizer, D. Dongelmans & J. Schouten



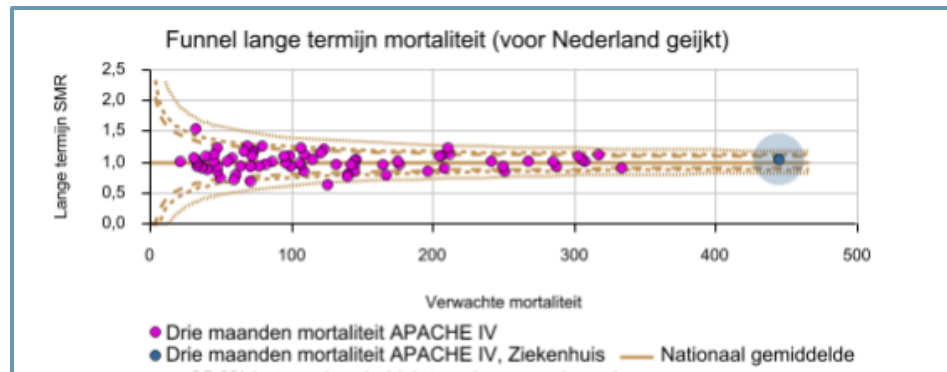
ICU care within The Netherlands

- Over 18 million inhabitants
- 113 hospitals
- 71 ICUs
- 1.4 million ICU admissions
- 75.000 each year

**Since 1996: The National
Intensive Care registry (NICE)**



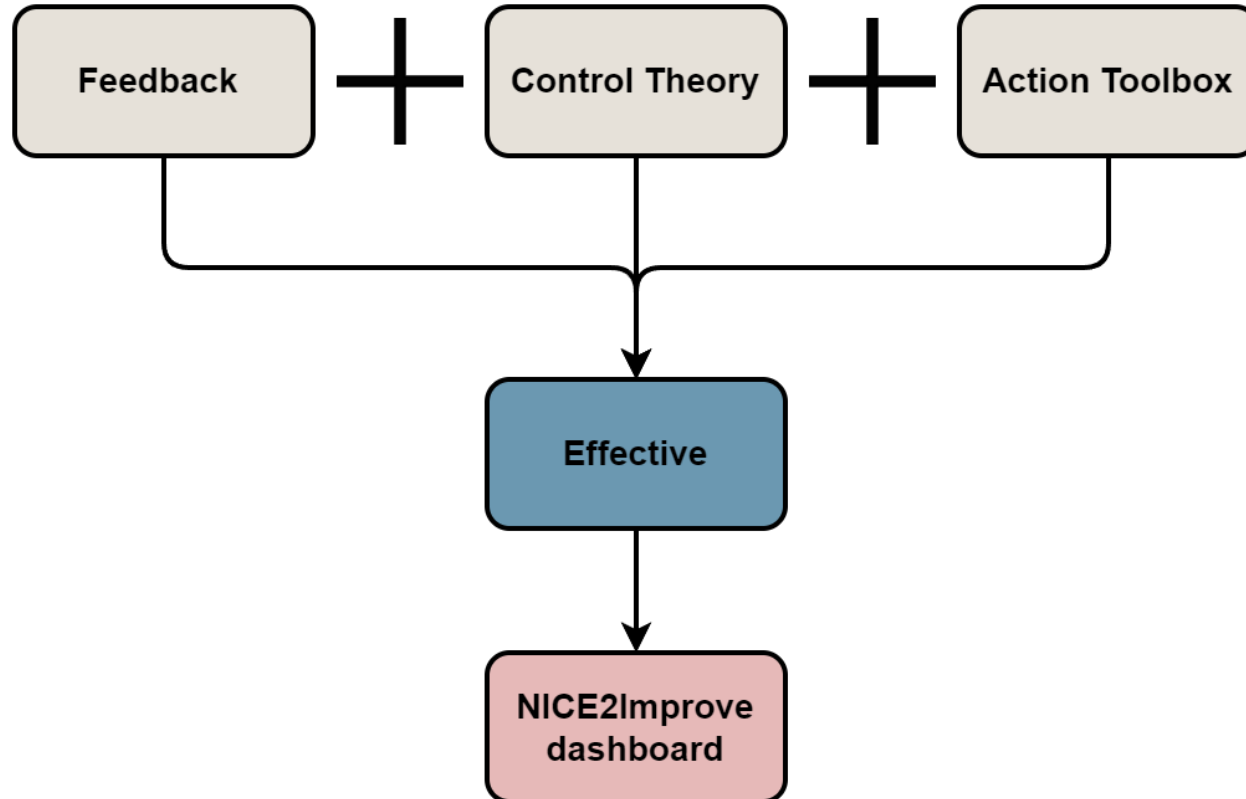
Providing Audit & Feedback



Jaarverslag 2015
Ziekenhuis xxx
maandag 2016-01-01



NICE2Improve dashboard



Design of the NICE2Improve dashboard



Dashboard actionable indicators

[NICE foundation website](#) [NICE Online](#) [Data dictionary](#) [Data uploads](#) [Help](#) [username\(logout\)](#)

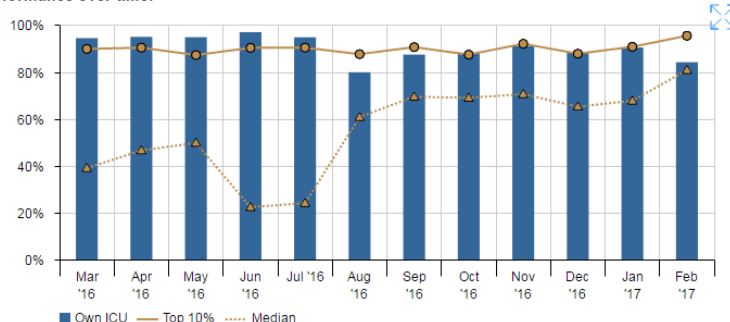
Pain Blood Antibiotics Ventilation				Action plan review →	
Quality indicator	Own ICU [?]	Median [?]	Top 10% [?]	Target [?]	Actions
Performing pain measurements each shift	89,0% ✔	67,0%	90,1%	100,0% ✎	0
Acceptable pain scores	76,2% !	85,0%	90,9%	80,0% ✎	0
Repeating pain measurements with unacceptable score within 1 hour	44,9% ✎	13,0%	55,2%	100,0% ✎	2
Unacceptable pain scores normalised within 1 hour	36,6% ✔	9,2%	29,0%	60,0% ✎	0

[Details](#)
[Patients](#)
[Info](#)
[Action plan](#)

Average performance in most recent 3 months: [?]

Own ICU	Median	Top 10%	Previous period
89,0% ✔ (good performance)	67,0%	90,1%	-0,1%

Performance over time:



Operationalisation:

Patient shifts during which pain was measured at least once.

Period:

1 December 2016 t/m 28 February 2017

Population in this period:

Own ICU: 180 admissions
All ICUs: 3840 admissions in 12 ICUs

Colour thresholds based on all ICUs: [?]


- ✔ 81,1% - 100,0% Good performance
- ✎ 60,3% - 81,1% Room for improvement
- ! 0,0% - 60,3% Improvement recommended

Actions:

[0 actions in progress](#)
[0 actions implemented](#)



Design of the NICE2Improve dashboard



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Pain | Blood | Antibiotics | Ventilation | [Action plan overview](#)

Quality indicator	Own ICU	Median	Top 10%	Target	Actions
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You will achieve 100% performance on this indicator if pain is being measured in all patients during each shift. Investigate whether in your ICU there are situations where this does not happen adequately: see tab [Patients](#) to get started. Do you wish to improve upon this indicator? Make your action plan below.

[New barrier](#) | [New action](#)

Potential barriers	Action plan	People	Deadline	Suggested actions
Staff is unfamiliar with the (updated) content of the pain protocol <input checked="" type="checkbox"/>	Organize training sessions about how to apply pain assessment tools 🔑	A	31-12-2018 ✎	Make the workflow more efficient so that there is more time to measure pain 🕒 + -
There is uncertainty about how to use pain assessment tools or interpret their results <input checked="" type="checkbox"/>	Evaluate modification to the pain protocol	L and A	15-10-2018 ✎	Disseminate promotional posters about measuring and treating pain 🔑 + -
Pain is measured but not recorded <input type="checkbox"/>				Perform pain measurements at fixed (routine) moments 🕒 + -
Pain is not (always) measured when patients seem to not experience pain <input checked="" type="checkbox"/>				Develop a pain protocol 🔑 + -
There is insufficient time to measure pain <input checked="" type="checkbox"/>				Revise the pain protocol regarding what medication should be given 🕒 + -
The effect of pain medication is <input type="checkbox"/>				Revise the pain protocol regarding what dosage of pain medication should be given 🕒 + -
				Organize a thematic meeting about the importance of pain management (create support) 🔑 + -
				Measure pain on indication to prevent worse 🕒 + -

List of potential barriers pre-filled for ICUs with access to the toolbox

Suggested actions only available for ICUs with access to the toolbox



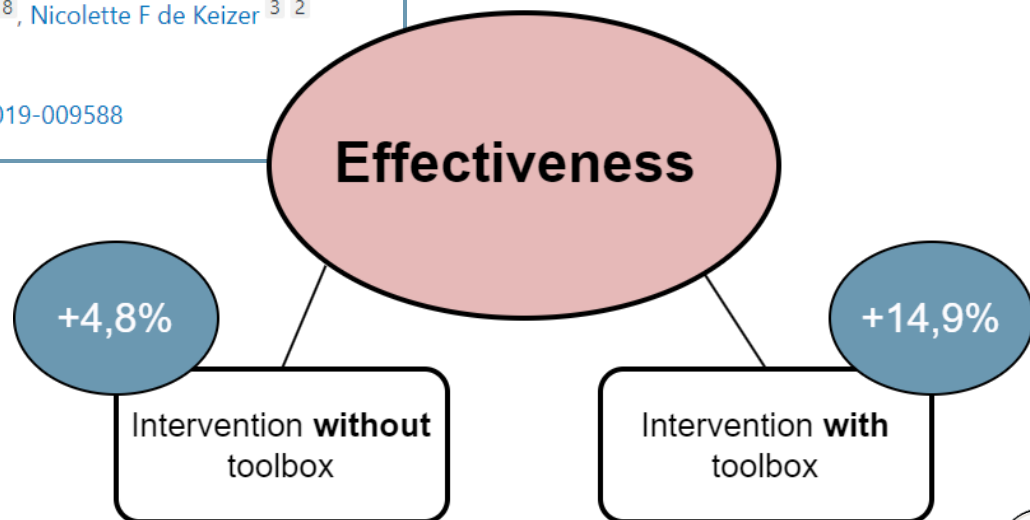
Effectiveness NICE2Improve pain management

Impact of audit and feedback with action implementation toolbox on improving ICU pain management: cluster-randomised controlled trial

Marie-José Roos-Blom^{1 2}, Wouter T Gude³, Evert de Jonge^{2 4}, Jan Jaap Spijkstra^{2 5}, Sabine N van der Veer⁶, Niels Peek^{6 7}, Dave A Dongelmans^{2 8}, Nicolette F de Keizer^{3 2}

Affiliations + expand

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Antibiotic use in the ICU

70%

Receive antibiotics

30-60%

Inappropriate

4

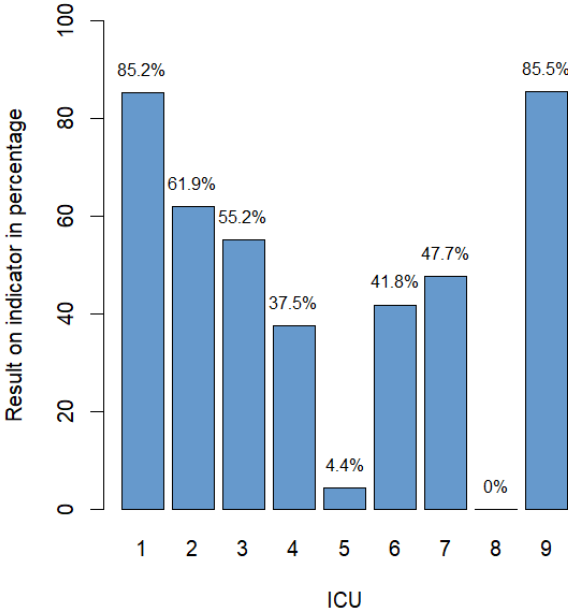
Quality indicators

Variation in performance
and potential room for
improvement

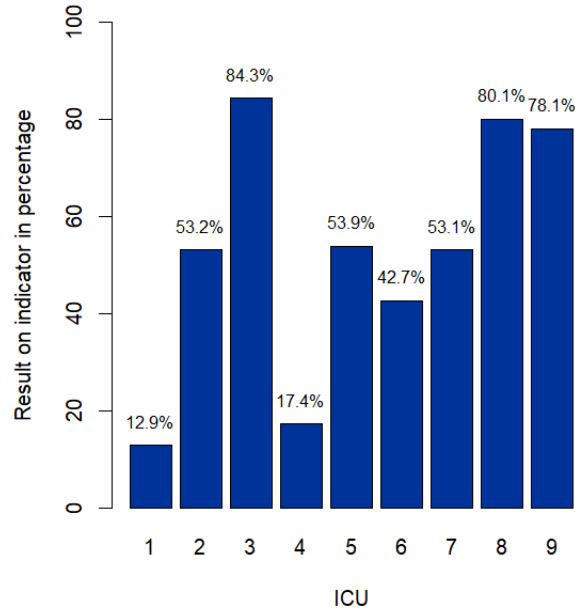


Preliminary results of variation

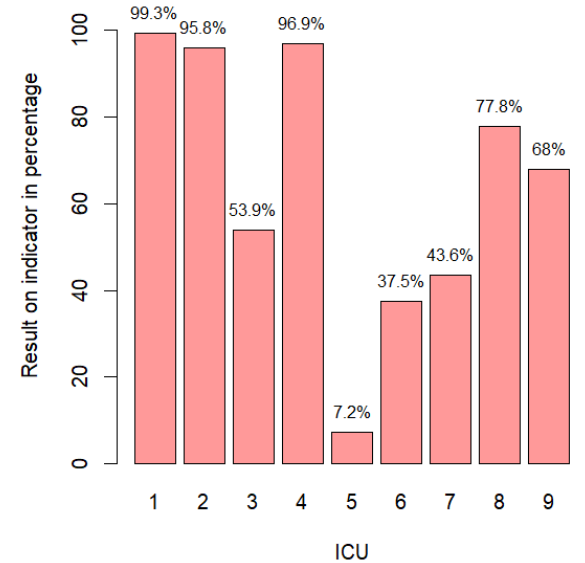
Quality indicator 1: Therapeutic Drug Monitoring



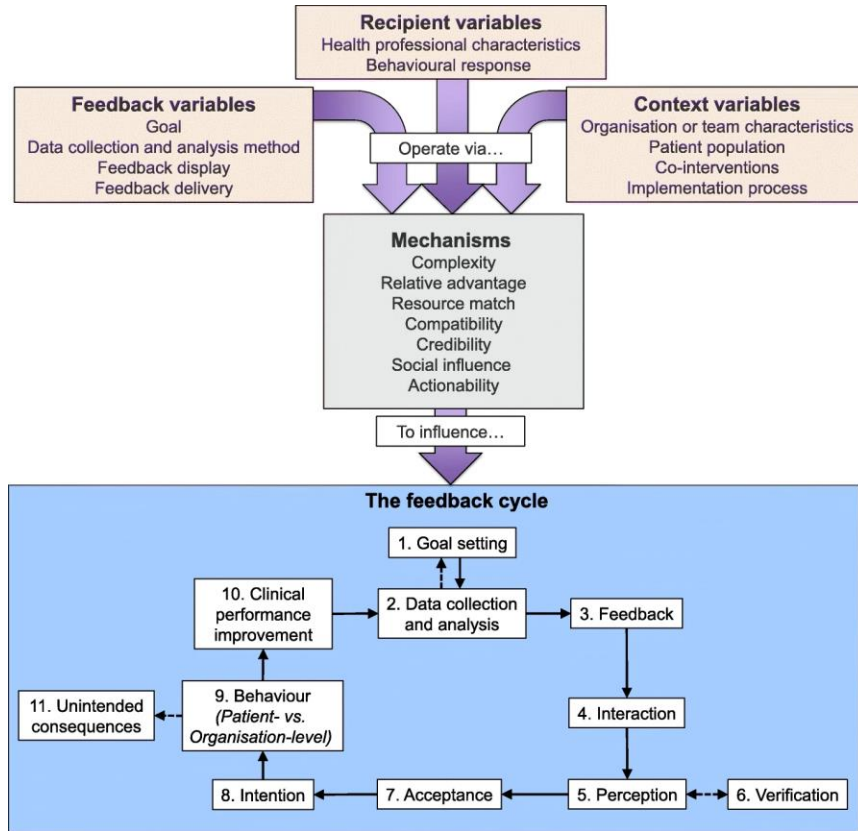
Quality indicator 2: SDD/SOD administration



Quality indicator 3: SDD/SOD surveillance culture



CP-FIT framework



- Effectiveness of the feedback intervention
- Sequential cycle
- If part of the cycle fails
- Feedback, recipient and context

Barriers

Feedback

- Accuracy on the data
- Not always control over pain

Context

- Insufficient time
- Insufficient personnel

Recipient

- Competing priorities

Barriers differ greatly amongst ICUs



Steps to make a tailored dashboard

Usability

1

Expansion of the design suggestions of Brehaut et al.

Co-interventions

2

Co-interventions:

- Reminders
- EHR
- benefits

Effectiveness

3

Clustered randomized controlled trial on ICU level



Questions? Feel free to ask



www.stichting-nice.nl



d.stegink@amsterdamumc.nl

