

Development and validation of a surgical site infection (SSI) outcome measure for patient self-report and observer completion

Rhiannon Macefield on behalf of the Bluebelle study group

School of Social and Community Medicine, Bristol

Why is a new outcome measure needed?



Research article

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Methods for identifying surgical wound infection after discharge from hospital: a systematic review

Emily S Petherick*¹, Jane E Dalton², Peter J Moore³ and Nicky Cullum¹

- **CDC definition (1988, 1992)**



- **ASEPSIS grading scale (Wilson 1986)**

Health Technology Assessment 2001; Vol. 5: No. 22

Methodology

The measurement and monitoring of surgical adverse events

J Bruce
EM Russell
J Mollison
ZH Krukowski

Aim

- To develop and validate an SSI outcome measure
 - for identifying and assessing SSI post-discharge
 - suitable for patient and professional use



Study design

- 1. Identify content**
- 2. Design new measure**
- 3. Pre-test with patients and professionals**
- 4. Validate**

What should we be measuring?

Existing measures

Interviews



Designing the measure

*Was there redness spreading away from the wound?
(erythema/cellulitis)*



Pre-testing

- **Cognitive interviews**
 - 28 patients – after recent abdominal surgery
 - 14 professionals - surgical teams, GPs, nurses
- Explored lay language & inclusion of medical terms
- Iterative process of improvements & interviews



What did we find...?



- **19** SSI domains
- Confusing terminology
- Infection vs wound healing

The measure

- 16 items
- 9 medical terms
- 4-point response category

A. Your wound

The following questions ask about how your wound has healed since you left hospital after having surgery. It includes some problems that may occur with wound healing. Please note these are only possibilities and do not occur for many people. The words in brackets are the medical terminology. Please tick the box that is most relevant to your experience.

Since you left hospital after having surgery....

	Not at all	A little	Quite a bit	A lot
Was there redness spreading away from the wound? (erythema/cellulitis)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the area around the wound warmer than the surrounding skin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was any part of the wound leaking fluid?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If "Not at all", go to question 4				
a) Was it clear fluid? (serous exudate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Was it blood-stained fluid? (haemoserous exudate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Was it thick and yellow/green fluid? (pus / purulent exudate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) I do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have the edges of any part of the wound separated/gaped open on their own accord? (spontaneous dehiscence)				
Not at all A little Quite a bit A lot				
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If "Not at all", go to question 5				
a) Did the skin separate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Did the deeper tissue separate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) I do not know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Easy to complete for patients & professionals

Validation study design



Recruitment



1. Patient self-assessment
postal questionnaire

Follow up

2. observer assessment (telephone)
3. reference assessment (face to face)

Validation study findings...so far

- 416 patients recruited in 6 months
- 300 (72%) postal questionnaire response rate
- minimal missing data
- unproblematic feedback
- 305 telephone observer assessments
- 115 face to face reference assessments

Considerations

- Developed and tested in abdominal surgery
- Multiple wounds



Summary

The background of the slide features three interlocking gears. A blue gear is at the top, a red gear is on the left, and a yellow gear is at the bottom. A green gear is partially visible behind the blue and yellow ones. The gears are 3D and have a slight shadow.

- **Developed a post-discharge outcome measure for SSI**
- **Single measure for patients and professionals using lay language & medical terms**
- **Streamline for collecting trial outcome data**

Next steps

- **Further data collection within pilot trial; more face to face reference SSI assessments**
- **Explore validity and reliability**
- **Examine scale structure and scoring system**

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r.macefield@bristol.ac.uk