

Nursing sensitive outcomes & indicators in ambulatory cancer care: an example from the UK

QUALITY AND SAFETY IN ONCOLOGY NURSING: INTERNATIONAL PERSPECTIVES

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HAUTE ÉCOLE DE SANTÉ FRIBORG

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 - ▶ *Jessica Corner, Alison Richardson, Richard Wagland: University of Southampton*

Background

- ▶ Variable service quality
- ▶ Chemotherapy delivery within ambulatory settings increasing
- ▶ High levels of patient morbidity
- ▶ Uncertain contribution of nursing to quality (safety, effectiveness, experience)



Publications:

Griffiths, P., Richardson, A., Blackwell, R., 2012.

Outcomes sensitive to nursing service quality in ambulatory cancer chemotherapy: Systematic scoping review.

Eur J Oncol Nurs 16 (3), 238-246.

Griffiths, P., Simon, M., Richardson, A., Corner, J., 2013.

Is a larger specialist nurse workforce in cancer care associated with better patient experience? Cross-sectional study.

Journal of Health Services Research and Policy 18 (Suppl. 1), 39-46.

Armes, J., Wagland, R., Finnegan-John, J., Richardson, A., Corner, J., Griffiths, P., 2014.

Development and testing of the patient-reported chemotherapy indicators of symptoms and experience: patient-reported outcome and process indicators sensitive to the quality of nursing care in ambulatory chemotherapy settings.

Cancer Nurs 37 (3), E52-60.

Wagland, R., Richardson, A., Armes, J., Hankins, M., Lennan, E., Griffiths, P., 2014.

Treatment-related problems experienced by cancer patients undergoing chemotherapy: a scoping review.

European Journal of Cancer Care, doi 10.1111/ecc.12246.

Our project

To develop and pilot a set of nurse sensitive outcome indicators for ambulatory chemotherapy that:

- Can be routinely collected
- Show variation in outcomes that is linked to the quality and quantity of nursing care
- Focus on areas *most likely* to be influenced by nurses
- Will provide useful *clinical* information and /or patient self assessment



What is a “Nurse Sensitive Outcome Indicator”?

“...those patient outcomes that have been found, by clinical research, to be uniquely and directly the result of the presence or absence of nursing care.”



- ▶ <http://www.wsna.org/Topics/Safe-Nurse-Staffing/Nurse-Sensitive-Outcome-Measures/documents/2009%20NSQI%20Webcast%20Part%201.pdf>

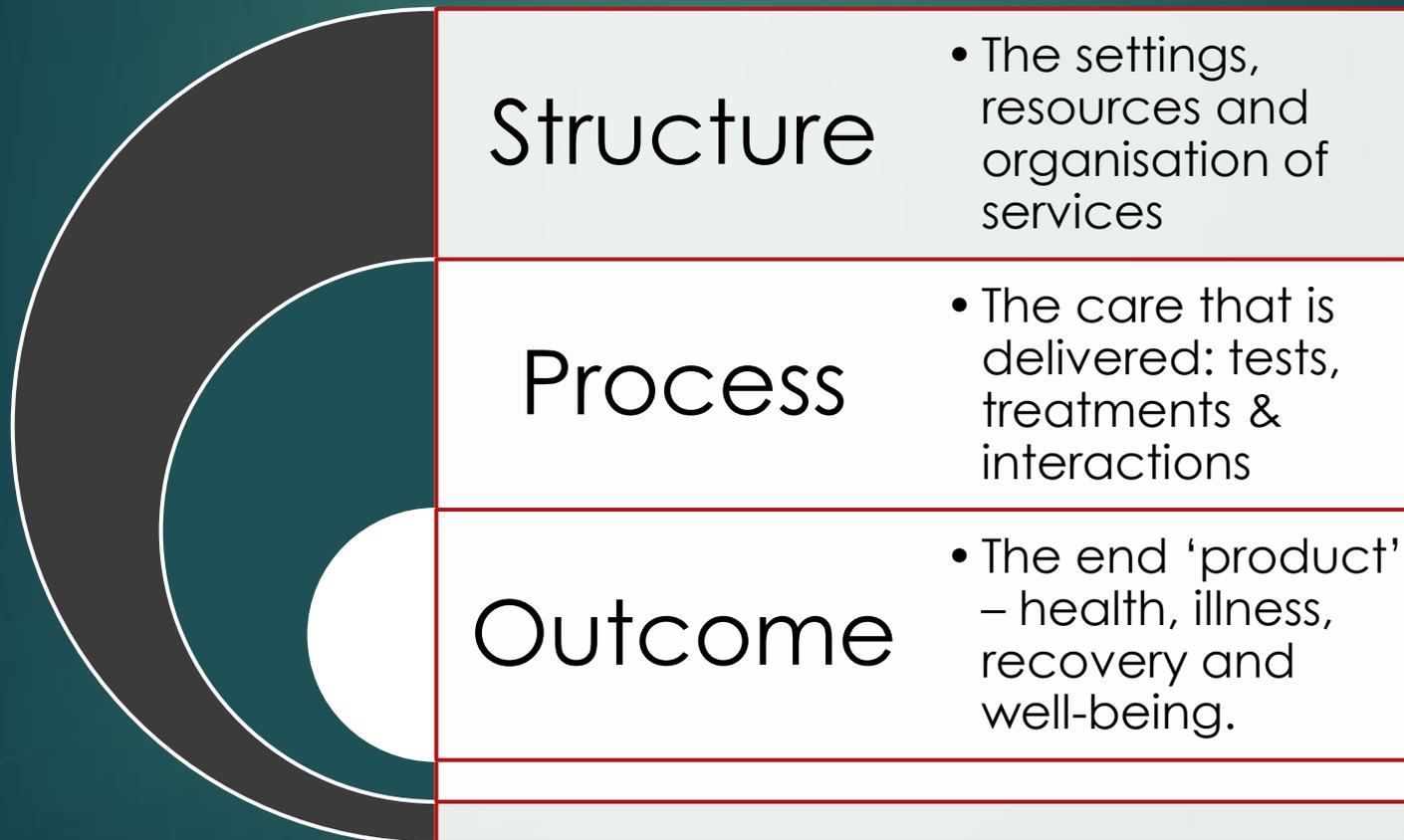
Nurse sensitive indicators

- ▶ When developing profession-specific indicators, the aim is to identify measures that are sensitive to the specific health professionals' contribution
- ▶ fulfil key criteria for quality indicators:
 - ▶ important phenomena
 - ▶ scientifically sound
 - ▶ where relevant, permit adjustment for differences in the underlying risk in the patient population
 - ▶ feasible to collect
 - ▶ provide useable information

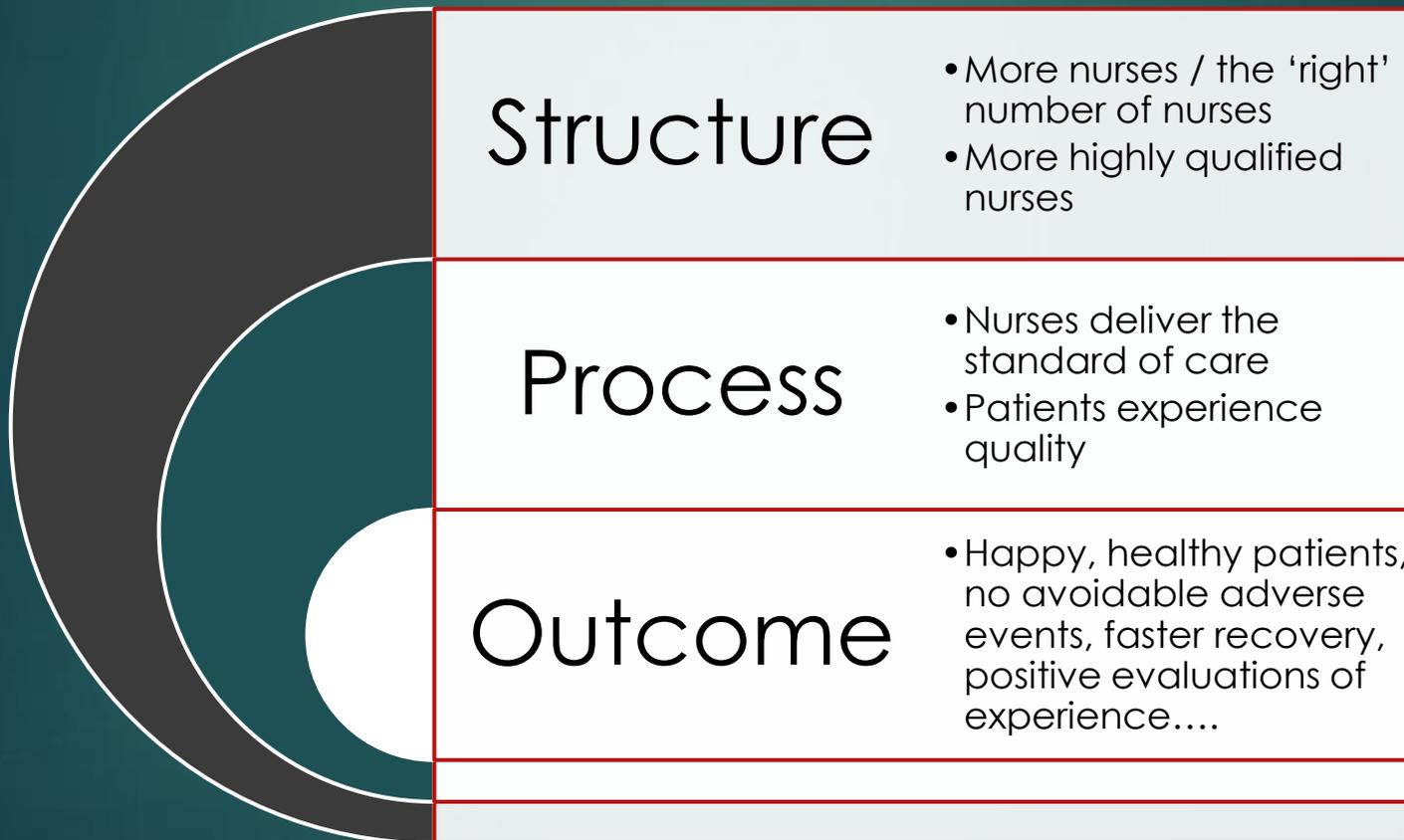
(McGlynn E. Selecting common measures of quality and system performance. Med Care. 2003;41(1):39Y47.)

Health care quality...

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Nursing 'quality' ...



The problem:

- ▶ The scientific validity of *structure* and *process* indicators depends on their relationship to *outcomes*...
- ▶ But outcomes are determined by:
 - ▶ The patient (condition, comorbidities etc.)
 - ▶ (Effective) Treatments
 - ▶ Effective delivery and coordination
 - ▶ Multi-disciplinary teams
 - ▶ Support services
 - ▶ Nurses
- ▶ Most variation in outcome is patient related

Nurse sensitive outcome indicators revisited...

“...those outcomes arrived at, or significantly impacted, by nursing interventions.”

*“...interventions [which result in nurse-sensitive outcomes] must be within the scope of nursing practice and integral to the processes of nursing care; **an empirical link must exist.**”*
(ONS 2004)

Process of development and testing

Stage 1

- Based on scoping reviews agreed key indicators
- Drafted specifications for indicators
- Translated into patient reported outcome measure

Stage 2

- Piloted

Stage 3

- Outcome measure tested in 10 chemotherapy units for 12 weeks
- 2400 completed questionnaires

Candidate outcome indicators

Outcomes that would vary with the quality of a nursing service either because of its organisational characteristics or because of its use of evidence-based interventions.

- ▶ review to identify outcomes for which there is a strong evidence base to establish that
 - ▶ particular nursing interventions are effective and should form part of routine practice
 - ▶ High quality reviews, evidence based guidelines
 - ▶ outcomes are strongly associated with nursing-related organisational characteristics, such as workforce capacity or characteristics.
 - ▶ observational studies
- ▶ Consensus exercises to establish importance and usefulness of indicators of outcome

Review conclusions (Griffiths et al 2012)

- ▶ The rhetoric of nursing's influence on important patient outcomes in this area is not currently matched by the strength of the evidence base.
- ▶ Outcomes most likely to be sensitive to nursing in ambulatory cancer chemotherapy
 - ▶ patient experience
 - ▶ nausea and vomiting
 - ▶ oral mucositis
 - ▶ safe medication administration
- ▶ Communication and provision of information to patients are likely to be important mechanisms in achieving these outcomes.

- ▶ nursing contribution to patient outcomes often based upon a presumed link between accurate problem identification and provision of access to therapies (some nurse-delivered, some not)
- ▶ modest direct evidence of actual benefit from actions by nurses.
- ▶ degree of sensitivity to nursing depends upon the precise roles nurses fulfil within a setting.
 - ▶ For example, if nurses act as independent prescribers for treatments of toxicities

Example: fatigue

- ▶ Almost universal patient problem
- ▶ There is some evidence (grade B/C) from reviews supporting
 - ▶ Exercise
 - ▶ psychosocial interventions
 - ▶ drug therapy for patients with anaemia
- ▶ Patients might also benefit indirectly from therapies targeted at specific problems such as breathlessness
- ▶ *Possibly* sensitive to the quality of nursing because a quality service will be more likely than a low quality service to identify the patient problem through assessment and ensure that recommended therapies are prescribed.
- ▶ There is a potential direct effect from nurse-delivered non-pharmacological therapies but it is not clear these fall within routine scope of practice

B. How are you feeling and how are we doing?

Please look at the list of symptoms below, which are commonly experienced by people undergoing cancer chemotherapy. Tell us which symptoms you experienced since your last chemotherapy treatment. If you experienced a symptom, please tell us how severe the symptom was by ticking the boxes.

B1 Since you last chemotherapy have you experienced...

	<i>None</i>	<i>Mild</i>	<i>Moderate</i>	<i>Severe</i>
Nausea	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Vomiting	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Pain and irritation at the injection / infusion (needle) site	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Problems with mouth or throat (e.g. sore or dry mouth/throat, mouth ulcers)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Feeling weak	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Signs of infection (e.g. feeling unusually hot or cold, flu like feelings, high temperature, pain when urinating)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Feeling unusually tired	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4
Feeling low or depressed	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4

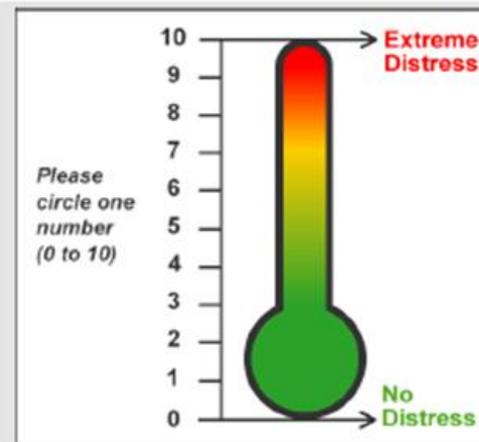
B2 A ...

B3 Please tell us about the support you receive to manage your symptoms

	Yes	Somewhat	No
Do the nurses who give you chemotherapy ask you about your symptoms?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Are the nurses who give your chemotherapy aware of the severity of the symptoms?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Are the nurses who give your chemotherapy providing useful information to manage your symptoms?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Are the nurses who give your chemotherapy providing practical advice to manage your symptoms?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Are you confident in your ability to manage the symptoms you are experiencing?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

B4 How are you doing overall?

Please circle the number (0-10) on the 'thermometer' to the right, that best describes how much distress you have been experiencing in the past week including today.

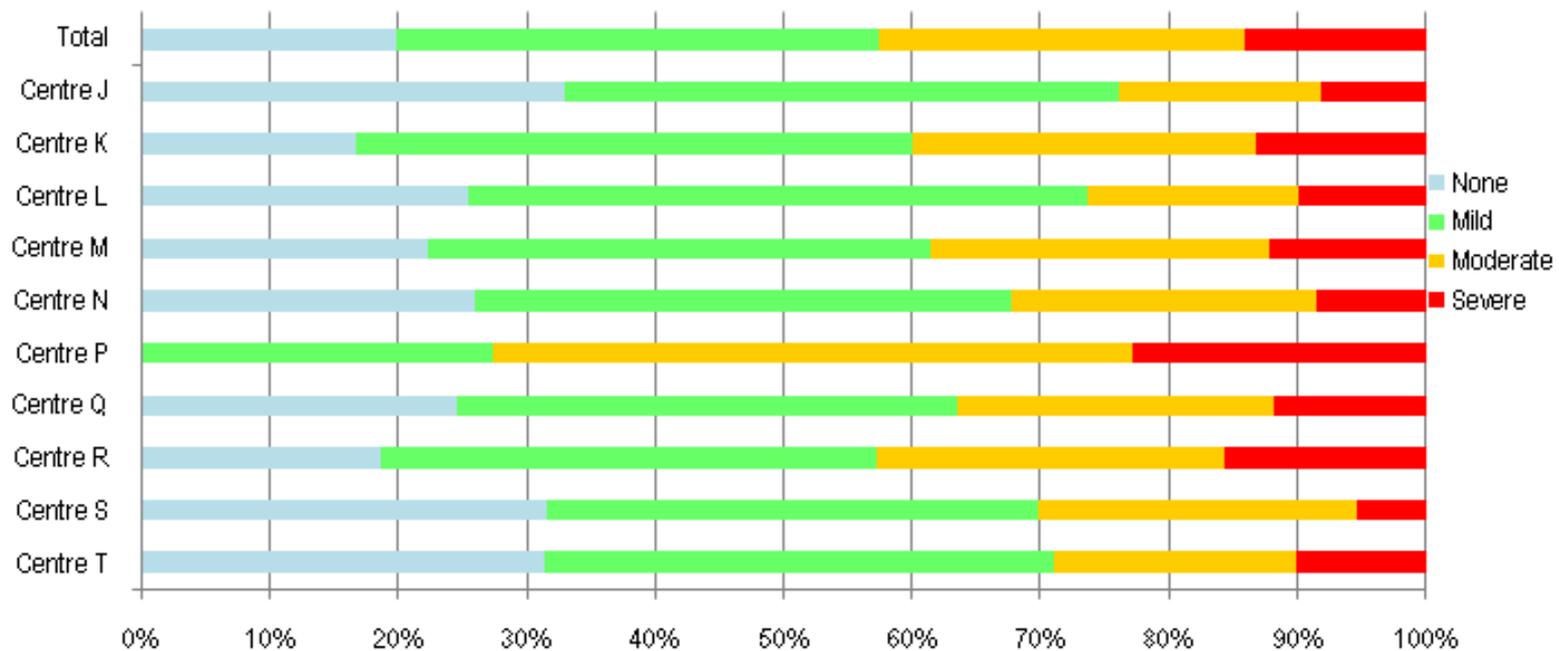


What we found... the headlines

(Armes et al 2014)

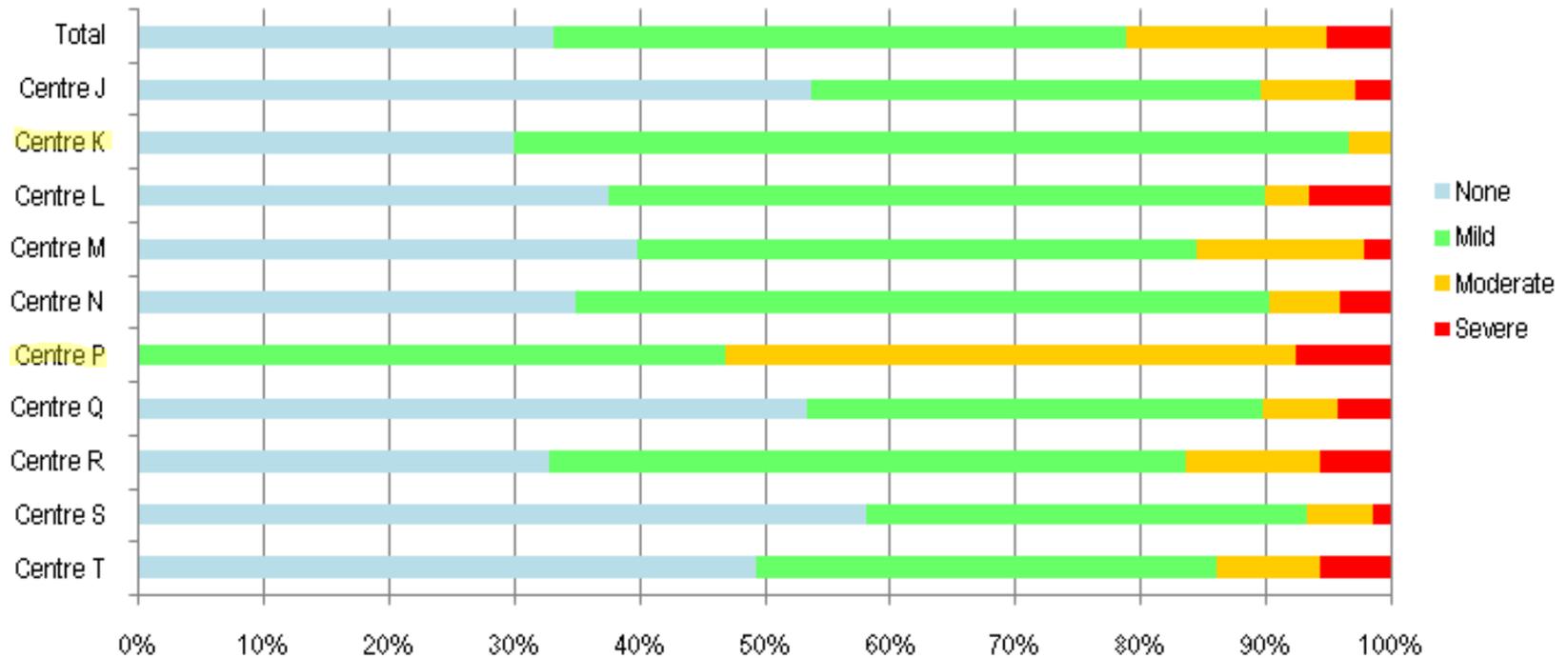
Experience of nausea

Since your last treatment have you experienced nausea? (n = 2390)



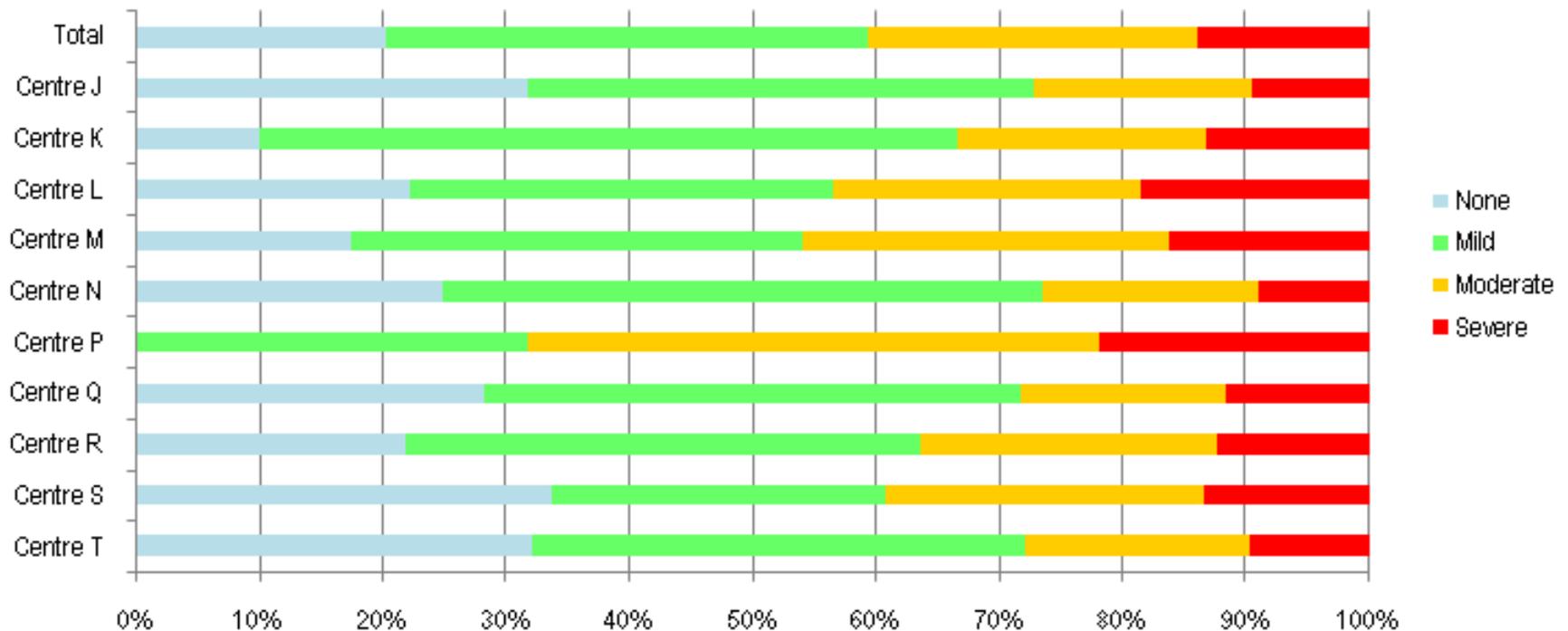
Experience of vomiting

Since your last treatment have you experienced vomiting? (n = 2388)



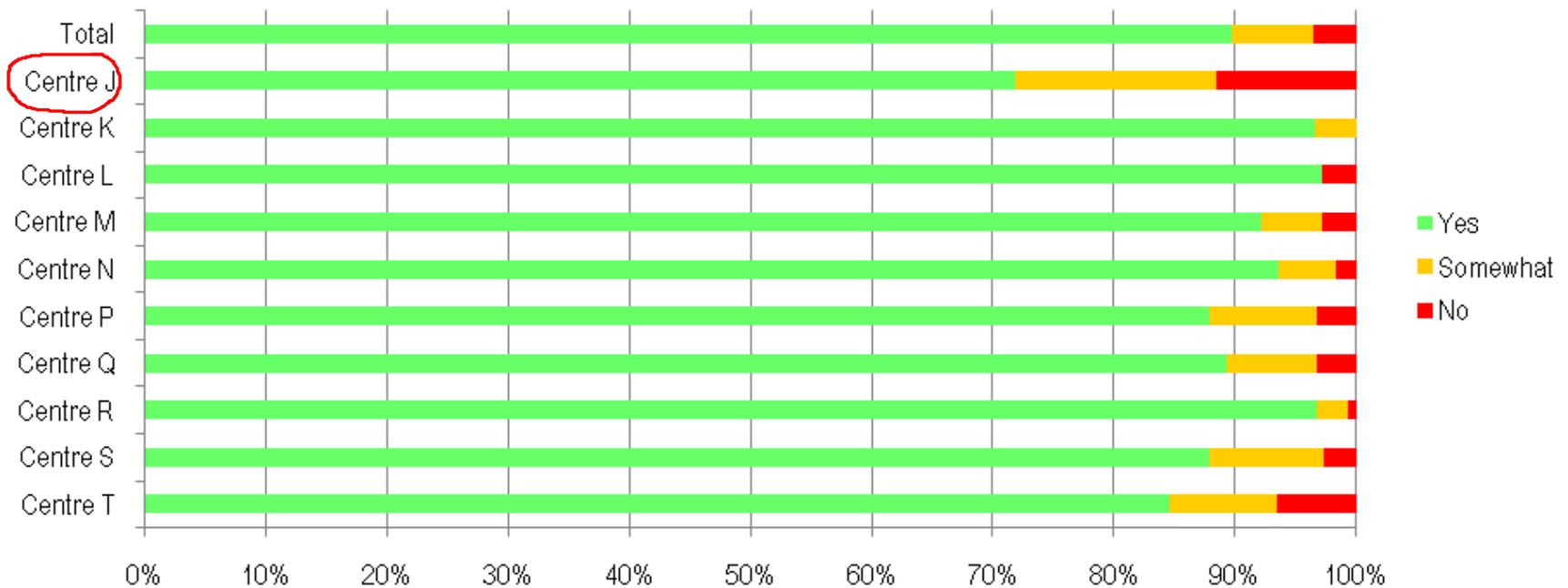
Experiencing problems with mouth and throat

Since your last treatment have you experienced problems with your mouth or throat? (n = 2389)



Do nurses know how bad it is?

Do the nurses who give you chemotherapy ask about your symptoms?
(n = 2348)



Relationship between symptoms and support

	Nausea	Vomiting	Pain at infusion site	Mouth problems
Nurses ask about symptoms	.006	.200	.297	.067
Nurses aware of symptoms	.091	.527*	.624**	.479*
Nurses give useful information	-.030	.552**	.673**	.430
Nurses give practical advice	.109	.207	.340	.097
Confidence in self care ability	.333	.842***	.527*	.212

*** significant at the 0.01 level (1-tailed)

** significant at the 0.05 level (1-tailed)

* significant at the 0.10 level (1-tailed)

Vomiting: case mix adjustment

Centre	Rate /100 patients	Rank	SSR	Rank	Lower CI	Upper CI
K	3	10	0.14	10	0.00	1.01
S	7	9	0.33	9	0.07	0.94
N	9	8	0.40	8	0.18	0.76
L	10	7	0.45	6	0.19	0.99
Q	10	6	0.47	7	0.18	0.98
J	11	5	0.57	5	0.32	0.94
T	14	4	0.66	4	0.43	0.96
M	16	3	0.68	3	0.37	1.14
R	17	2	0.83	2	0.64	1.05
P	54	1	2.33	1	1.97	2.74

Service feedback

- ▶ Easy to use and results readily understandable
- ▶ Were not aware of symptom severity and deficits in care
- ▶ Able to clearly identify how they might use data to stimulate quality improvement efforts and evaluate success of these
- ▶ Helped interpretation results from national surveys
- ▶ Encouraged them to participate in routine evaluation of outcomes to contribute to decision making at service and patient level

“We knew that we were not always formally assessing symptoms but we were surprised by the levels of nausea and vomiting reported.

We also thought that the information that we were giving was good but it seems clear that something isn't working well for the patients. “

“This sort of feedback is valuable because it is more specific and detailed than the national survey and, importantly, it relates to the particular unit that care was delivered in, not the trust as a whole.”

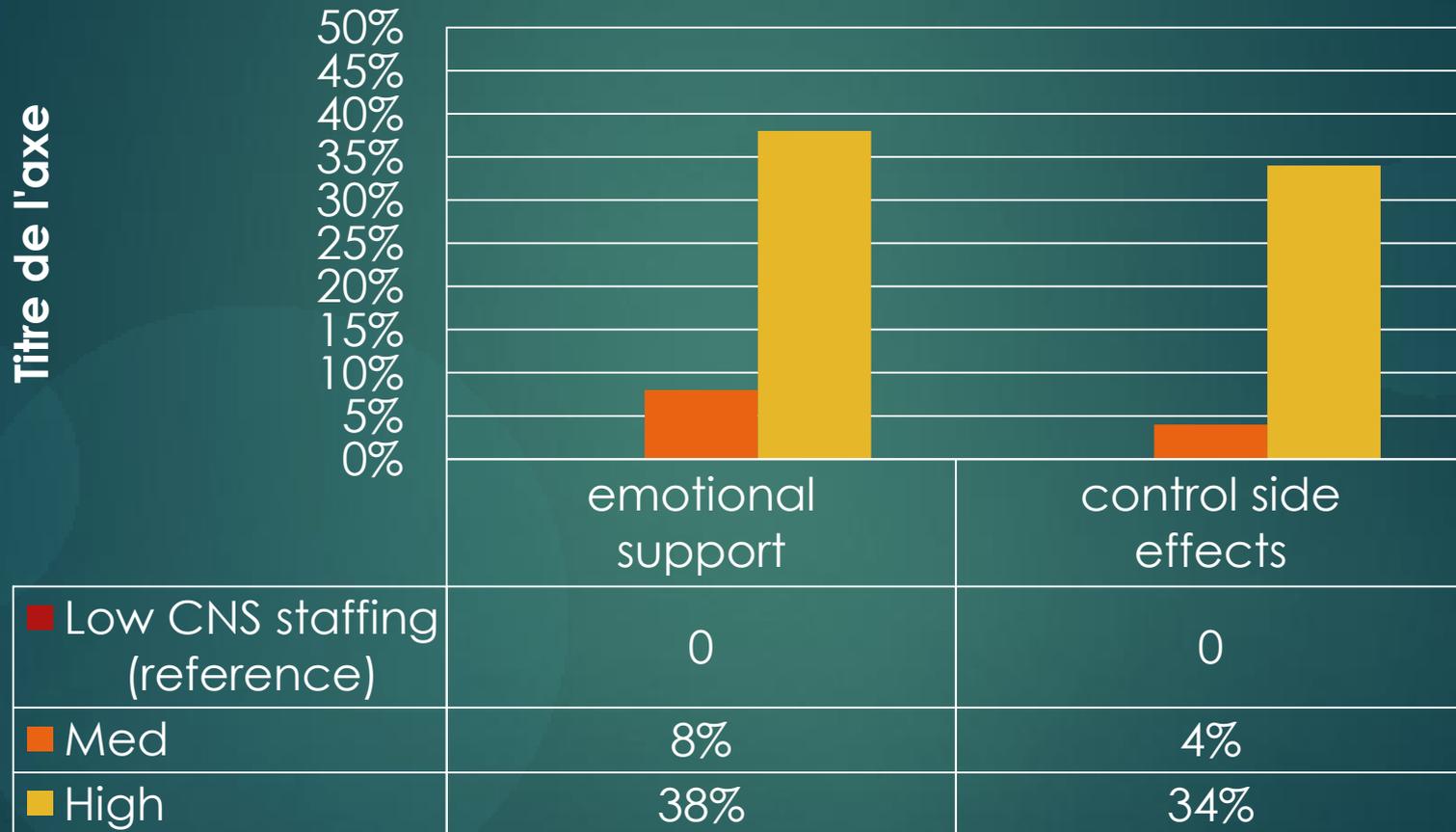
Conclusions: nurse sensitive outcome indicators for ambulatory chemotherapy

- Routine collection is feasible
 - But we didn't investigate feasibility / practicality of routine analysis and reporting
- There is variation in outcomes
 - Associated with patient reports of support from nurses.
 - Particularly in areas *most likely* to be influenced by nurses
 - Not necessarily *caused* by variation in nursing but worth investigating
- Useful for service managers
 - Potentially useful clinically?

Potential benefits

Showing added value of nurses:

Increase in odds of good experience



- ▶ Number of breast cancer specialist nurses employed by a hospital per '000 patients and patient experience in National Cancer Patient Experience survey (n= 14,208) Griffiths et al 2013

An effective intervention or an outward sign of an effective organisation?

- ▶ Reports suggest *managers* find NSOI data useful
- ▶ Some evidence that organisations collecting NSOI improve over time and perform better than those that don't
- ▶ Unclear cost effectiveness



Closing remarks:

- ▶ Uncertain evidence on influence on provider / patient behaviours
- ▶ 'League tables' not valid.
- ▶ Should incentivise providers to explore their service, not explain the data away
- ▶ Publication and financial incentives may be important
- ▶ Data is not useful if it is not used: wasteful and encourages cynicism
- ▶ Use routine data from clinical workflows if possible