

› The effects of single room accommodation in acute healthcare

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Current Situation In Scotland

- › There should be a presumption of 100% single rooms in future hospital developments.
- › Existing accommodation which is being refurbished, where taking into account the constraints of the existing building, a minimum of 50% single room accommodation would be allowed but as close to 100% as possible would be expected; and
- › In new developments where there are clinical reasons for not making 100% single room provision they should be clearly identified and articulated in the appropriate Business Case. However, each case would be subject to Scottish Government agreement as part of the Business Case approval process.

Expert Consultation

- › 3 Stage process during which Clinical Speciality Advisors considered which of the clinical specialities 100% single room is appropriate for.
- › The current provision of single room accommodation was not sufficient across NHSScotland; and
- › 100% single room provision is clinically appropriate in clinical settings.

2 reports of note issued in since 2010

- › West et al. stated that evidence relating to the effect of single rooms on the pre-specified outcomes is mixed; it is not possible to say with certainty that single-rooms reduce outcomes such as infection rates and length of stay and increase patient satisfaction.
- › Maben et al. impact of a hospital move to 100% single room accommodation .
- › Impact of the move on three key areas: care delivery and working practices; staff experience; and, patient experience.
- › Final report not due until January 2015.

Single Room Accommodation Matrix

Inrichtings element	Uit Review?	Studie	Type studie	N	Gebruiks functie	KPI	Deel KPI	Resultaat
Room occupancy		CHD, 2011	Review		Cure, NICU	Patient satisfaction	satisfaction with: admissions, hospital environment, information, overall quality of care, and other aspects of healthcare services	Single-bed patient rooms scored higher than double-bed and multibed rooms in terms of patient satisfaction
Room occupancy	CHD, 2011	Harris, Shepley & White, 2006	Within comparison staff that worked in single bed and open bay facilities	75	NICU	Staff satisfaction	Staff stress	SFR NICU (single vs open-bay design) may increase staff satisfaction and reduce staff stress
Room occupancy	CHD, 2011	Nguyen Thi, Briancon, Empereur & Guillemin, 2002	Survey. Identification of factors contributing to patient satisfaction by regression	533	Hospital inpatients France	Patient satisfaction	Patient satisfaction with admissions, hospital environment information, overall quality of care, other aspects of healthcare services	Patient in private bedroom scored higher on patient satisfaction (Odd ratio 1.8-2.0) than 2-3 bedroom
Room occupancy		Tegnestedt, Gunther, Reichard, Bjurstrom, Alvarsson, Martling, Sackey, 2013	Experiment: between subject variance analysis (roomtype), within subject (shift)	15 (5 per room), 14 men	ICU, hospital Sweden	Patient satisfaction	Noise	There were no statistically significant differences between the room types in mean sound levels or in CRT (cumulative restorative time). Disruptive sounds were 40% less frequent in the single room with nurse station alcove (i.o separate room) than single room with bedside ns and 3 bedroom with NSA (NS dependent not room). Disruptive sounds related to monitor alarms and conversations, not care related. Trend longer cumulative restorative time in single bedroom with NSA than 3 bed with NSA.

Research Overview

Provide insights in evidence base for single room accommodation.

Our research question:

Does single room accommodation have a positive effect on patient outcomes, staff outcomes and costs?



Methodology

- › Literature search < June 2013.
- › Literature, grey literature & expert opinions.
- › Re-assessment of articles in accordance with SIGN methodology
 - › 1 very strong evidence,
 - › 2 strong/moderate evidence,
 - › 3 weak evidence,
 - › 4 expert opinion.
- › Analysis of evidence base categorised by quality.



Evidence base

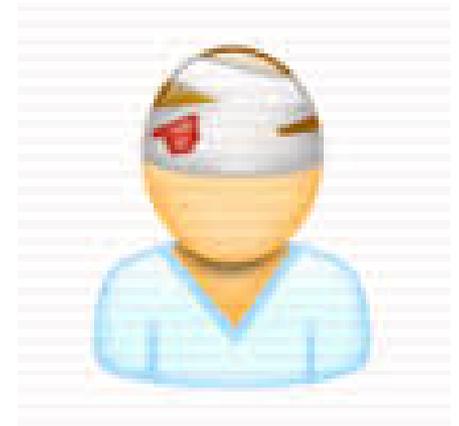
- › Search identified 158 papers
- › Deleted (65):
 - › Evidence not related to single room design or confounded,
 - › Evidence data not available,
 - › Evidence related to infection management policies.
- › 93 papers were appraised.
- › Methodology included review papers, however, several were downgraded if the conclusions were not supported by data in the body of the review.

Preliminary results

- › Patient outcomes,
- › Staff outcomes,
- › Costs & financial benefits.

Patient outcomes: measures

- › **Patient satisfaction**
 - › in general, with care, noise, quality of sleep, experience of privacy, dignity, control, social support.
- › **Preference**
- › **Well-being**
 - › Length of stay, stress, pain medication, mortality.
- › **Infection rates**
- › **Falls**



Effects single rooms on patient outcomes

Outcome	Quality	+ (#)	- (#)	No (#)	Conclusion*
Satisfaction	1-2	5		3	Overall increase Worries about isolation
	3-4	32	3		No effect noise, loneliness
Well-being	1-2	2	2	1	Inconclusive Some evidence shorter stay in paediatric setting
	3-4	3		3	
Preference	1-2	1			Inconclusive Shared: elderly, oncology
	3-4	3	4	4	Private: public, mental health
Infection rate**	1-2	5		6	Inconclusive Some evidence for burn patients, paediatric settings
	3-4	14		2	
Falls	1-2				Indications for increased falls
	3-4		3		

* Preliminary conclusion

** + means less infection

Remarks

- › Patient satisfaction and infection risks most popular topics.
- › Infection risks
 - › Lower infection rates often assumed evidence (no roommates),
 - › But having prior occupants, neighbours or other patients also are associated with increased risk,
 - › Often confounded with infection management policies, but single rooms support compliance with these policies.
- › Before/after studies often confounded with multiple interventions, and no control group.
- › Case mix differences in single rooms (often more ill people)

Staff outcomes: measures

› Staff satisfaction

- › In general, with quality care, supplies, equipment, noise, family interaction, communication with staff.
- › Preferences.
- › Well-being, stress.

› Consultation

- › Consultation, communication with patient.

› Staff efficiency

- › Patient transfers, travel time.

› Staff error

- › Medication error, medical error.



Effects single room on staff outcomes

	Quality	+ (#)	- (#)	No (#)	Conclusion*
Satisfaction	1-2	1	1		Inconclusive Tendency better patient care; monitoring, staff safety not improved
	3-4	5			
Consultation	1-2	1			Indication better staff-patient communication (Glind et al., 2008)
	3-4	1		2	
Efficiency	1-2				Inconclusive Transfers (+), monitoring (-), staff levels (0)
	3-4	1	1	1	
Staff error**	1-2				Indication less medication errors
	3-4	5			

* Preliminary conclusion

** + means less error

Remarks

- › Evidence base very limited compared to patient outcomes.
- › Cochrane review (2011) excluded all single room evidence due to quality reasons.
- › Mostly focus groups or surveys with small sample sizes.
- › Call for action?

Costs & financial benefits: measures

› Construction costs

- › Land, construction.

› Operating costs

- › Healthcare provision (travel costs, nursing costs, medication costs)
- › Operating & housekeeping (energy, cleaning).

› Maintenance costs

- › Updating, refurbishing.

› Financial benefits

- › Occupancy rates (turnover), premium price.



Effects single rooms on costs & benefits

Costs	Quality	- (#)	+ (#)	No (#)	Conclusion*
Construction	1-2		5		Higher construction costs due to increased floor area
	3-4		3		
Operating	1-2	2	1		Inconclusive Cleaning, travel time (+), Transfers, errors (-)
	3-4	6	3	1	
Maintenance	1-2		1		Limited evidence: related to construction costs
	3-4				
Benefits	Quality	- (#)	+ (#)	No (#)	Conclusion*
Occupancy	1-2				Higher turnover due to assumed better occupancy rates as no transfers required.
	3-4		4		
Premium	1-2				Assumes that people are willing to pay more for private room
	3-4		1		

* Preliminary conclusion

Remarks

- › Costs often assumed based on evidence base other outcomes or square meters. Very limited real comparisons.
- › Cost-benefit calculations hard to generalize due to different cost levels and healthcare systems in other regions.
- › Call for action?

Summary



Single rooms:

- › increase patient satisfaction, but pay attention to isolation, falls and monitoring,
- › are preferred in general, however certain groups may prefer shared rooms,
- › support in infection management policies, but as such no convincing evidence for reduced infections,
- › seem to have conflicting staff outcomes, there is a need for more quality research,
- › increase construction costs and floor area related costs; impact on long-term operational costs unclear. There is a need for more quality research.

Discussion

- › Questions or remarks?
- › Is the evidence base strong enough to support policy making on single patient room provision?
- › Conduct small sample pilot studies or invest in major studies?
- › Call for action?

› Thank You

