

Weighing Patients in Scottish Critical Care Units: Weighed down by Inaccuracy?



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Introduction

The weighing of patients within critical care is an essential aspect of care. Not only is weight required for nutritional screening, it is a necessity for cardiac output studies, monitoring of fluid balance and calculation of drug dosages.

The process of weighing patients in critical care is challenging, with many factors affecting the decision to weigh. Weighing patients is time consuming, poses significant risks to patients with unstable cardiovascular, respiratory and neurological systems and places staff at risk of injury and in the general hurly burly of critical care may seem irrelevant.

In the absence of an actual weight the use of estimated measurements can be used. However research has demonstrated that although estimated height is relatively accurate, the estimation of weight has been shown to be grossly inaccurate

Nutritional deficits are associated with increased mortality, morbidity and length of stay in all patients groups in all clinical areas. The development of universal screening for malnutrition has been recently adopted standard for all patients within NHS Scotland. Quality Improvement Scotland (QIS 2003), National Institute for Clinical Excellence (NICE 2008) guidelines on nutritional support for adults and the QIS Food Fluid and Nutrition require that all patients are nutritionally screened, for which the determination of body mass index is essential. The determination of weight is the major limiting factor in achieving this goal. The adoption of Malnutrition Universal Screening Tool (MUST) has led to an attempt to ensure that all patients are weighed on admission.

The authors aimed to determine how critical care units across Scotland screened their patients and determined body mass index.

Method

The authors carried out a telephone survey of fourteen NHS Trusts across Scotland, representing twenty seven critical care units. A series of six questions were asked, looking at how height and weight determined, and how often measured and what nutritional tool used with the authors recording answers from staff contacted.

Results

Fourteen of the NHS Trust responded. It can be seen from the results that critical care units in Scotland are lagging behind on the weighing and nutritional screening of patients. There is a lack of consistency in how body mass index (height and weight) is determined. Three quarters (3) of those that had the facilities to weigh did not. Reasons cited for under use related to patients condition, lack of staffing and concerns regarding patient / staff safety. Of fourteen NHS Trusts only one consistently measured height and weight and nutritionally screened patients.

Conclusion

It is clear that critical care is lagging behind the rest of the country, lacks a consistent approach to nutritional screening and for a clinical area that is based on accuracy the use of grossly inaccurate measurement tools for an important aspect of care is frightening.

The development of the MUST and its subsequent adoption across NHS Scotland has raised the profile of nutrition but further education for critical care staff is required. The Scottish Intensive Care Society (SICS) Nutrition Network is developing and promoting education and raising nutritional issues for clinical staff. The development of a bundle on nutrition may be the way forward for critical care.

On a positive note, many NHS Trusts have now begun to take action and have purchased equipment to facilitate weighing and introducing nutritional screening. The authors aim to repeat this audit, with the expectation that the results will be vastly different.

Hendershot K, Robinson L, Rowland J, Vaziri K, Rizzo A, Fakhry S (2006) Estimated Height, Weight and Body mass Index: Implications for Research and Patient safety Journal of the American College of Surgeons, Vol 203, Issue 6, Pages 887-893
 Bloomfield R, Steel E, MacLennan G, Noble D (2006) Accuracy of weight and height estimation in an intensive care unit: Implications for clinical practice and research Critical Care Medicine Vol 34, No8.
 NHS Quality Improvement Scotland (2003): Food Fluid and Nutritional Care in Hospitals (Clinical Standards)
 National Institute for Clinical Excellence (2008) CG32: Nutrition Support for Adults
 Malnutrition Advisory Group (2000): MAG guidelines for detection and management of malnutrition. Maidenhead: British Association for Parenteral and Enteral Nutrition (BAPEN).

RESULTS	Yes	No	Other
Do you weigh on admission?	1	13	
Do you weigh regularly?	1 (weekly)	9	4 weigh for cardiac output studies only
Do you weigh on discharge?	1	13	
Do you use nutritional screening?	5 (MUST)	8	1 locally developed screening tool

	Stadiometer	Tape measure	Never Measure	Estimate by staff	Relatives/Notes/ Ulnar length
How do you measure height?	1	5	8	5	3
	Hoist	Bed scales	Never Measure	Estimate by staff	Information from relatives / notes
How do you weigh?	4 (3 rarely used)	1 (rarely used)	9	13	13

