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Research report

How practice contributes to trolley food waste. A qualitative study among staff involved in serving meals to hospital patients [☆]

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ABSTRACT

This study investigated the generation of trolley food waste at the ward level in a hospital in order to provide recommendations for how practice could be changed to reduce food waste. Three separate focus group discussions were held with four nurses, four dietitians and four service assistants engaged in food service. Furthermore, single qualitative interviews were conducted with a nurse, a dietitian and two service assistants. Observations of procedures around trolley food serving were carried out during lunch and supper for a total of 10 weekdays in two different wards. All unserved food items discarded as waste were weighed after each service. Analysis of interview and observation data revealed five key themes. The findings indicate that trolley food waste generation is a practice embedded within the limitations related to the procedures of meal ordering. This includes portion size choices and delivery, communication, tools for menu information, portioning and monitoring of food waste, as well as the use of unserved food. Considering positive changes to these can be a way forward to develop strategies to reduce trolley food waste at the ward level.

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Introduction

Although food waste has only recently become a subject for discussion on the global agenda, it has always been an area of interest within the domains of hospital foodservice. While interest surrounding food waste is generally driven by its environmental and economic impacts, the problem of food waste in the hospital setting is more concerned with the schism of food being wasted while patients have inadequate nutritional intakes (Almdal, Viggers, Beck, & Jensen, 2003; Barton, Beigg, Macdonald, & Allison, 2000; Edwards & Nash, 1999). With the current call for a sustainable hospital foodservice, professionals from the sector are challenged to find innovative ways to reduce food waste without compromising patients' satisfaction and nutritional intake. A potential opportunity for exploring food waste in hospitals is the practice of meal service at the ward level. Ward level forms the final step of the chain for food

production and handling and it is the point at which food is actually served to the patients.

Trolley meal service in this study is considered as the operations leading to a service whereby patients can choose their meals directly from the food trolley and in which they are served by health-care personnel. All foods are intended for patients' consumption but food that remains on the trolley after mealtime is understood as unserved trolley food (Edwards & Hartwell, 2003). The term trolley food waste as used in this study refers to any edible unserved food item on the trolley that is discarded after mealtime, expressed as a percentage of the total food item ordered and available at the start of the mealtime. Since 2003, more than 65% of Danish hospitals have adopted the trolley meal service method, with a decentralized plating system for serving patients (Engelund, Lassen, & Mikkelsen, 2007). This system is believed to improve patients' food intake and reduce plate waste since it allows for a more customized approach. Studies have shown that trolley meal service has been highly rated in terms of patients' satisfaction and energy intakes because it offers the opportunity for patients to select their own food and portion sizes at mealtimes while also gaining an opportunity to interact with the serving staff (Hartwell, Edwards, & Beavis, 2007; Mahoney, Zulli, & Walton, 2009; Wilson, Evans, & Frost, 2000). This way of serving is known to generate less plate waste compared to a centralized plated meal service (Edwards & Nash, 1999; Hartwell & Edwards, 2003; Kelly, 1999). It has, however, been estimated that hospital foodservice using the trolley meal service wastes between 17–50% of bulk food delivered from the kitchen to the wards. The

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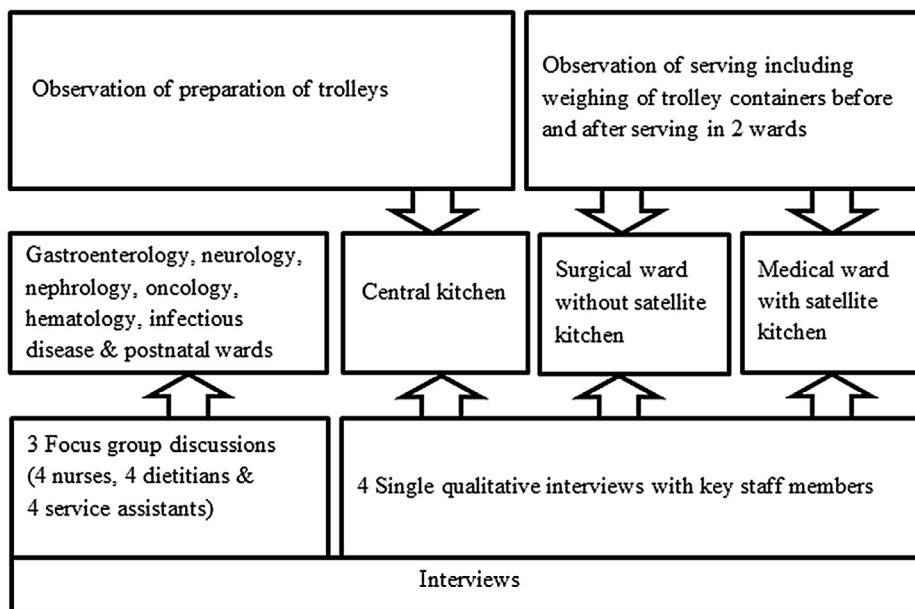


Fig. 1. Data collection methodological framework.

unserved food remaining on the trolley after meal can be as much as 30% of the total food waste; in addition to this waste is plate waste (Edwards & Nash, 1999; Hartwell & Edwards, 2003; Kelly, 1999; Sonnino & McWilliam, 2011).

The reasons for trolley food waste that can be related to the practice of serving include inaccurate meal ordering, using standardized portion sizes for patients, forecasting error, ordering for empty beds, inability to cancel patient discharges or relocation to different wards, and a lack of portion size choices for patients (Goonan, Miroso, & Spence, 2014; Kim, Kim, & Lee, 2010; Williams & Walton, 2011). Hence, the practice of trolley food waste generation in hospital foodservice can be considered as unsustainable and as an inefficient increase to healthcare costs. This study therefore aims to investigate practice that explains the extent of trolley food waste generation as well as elicit staff opinions about how the practice could eventually be changed in order to reduce food waste.

Material and methods

Theoretical framework

The analytical perspective to trolley food waste generation in this paper is practice theory. This approach provides a suitable perspective to identify elements that contribute to shape the practice of trolley food waste generation and how this practice can be transformed through changes in element (Gram-Hanssen, 2011; Halkier, Katz-Gerro, & Martens, 2011). The practice as used in the theory is not about individuals or products, but solely around actions and activities taken to accomplish the practice which serves as the basic unit of analysis (Hargreaves, 2011; Reckwitz, 2002; Shove & Pantzar, 2005). Practice theory assumes that practitioners are engaged in routine activities in a professional context and that their actions and behavior are shaped by social structure where different elements hold practice together. Although there is no unified approach to define specific practice, some practice theorists have focused on elements constituting practice with different interpretations (Gram-Hanssen, 2011; Reckwitz, 2002; Schatzki, 2010; Shove & Pantzar, 2005; Warde, 2005). On the basis of the conceptual framework of Shove and Pantzar, elements in this article are understood as the “material” (equipment, technologies, infrastructure),

“procedure” (know how, competency) and “image” (meanings, ideas, interpretations) (Shove & Pantzar, 2005). This perspective was taken in order to shift the focus from the observed and interviewed staff as a personal practitioner, to elements of practice of trolley food waste generation that can be targeted for change to reduce trolley food waste.

Study design

A case study approach as applied in this study is useful to allow a multi-faceted exploration of complex socio-technical issues in a real-life context (Yin, 2003). As the focal point of the case study the mealtime sessions were observed and combined with a weighing of trolley food waste in the two wards that made up the study. Moreover, focus group discussion and interviews with key staff including nurses, dietitians and service assistants involved with foodservice were conducted.

Figure 1 shows the methodological framework for data collection.

Study setting and serving methods

The setting was a university hospital in Denmark with 900 beds including all medical, surgery and oncology specialties. The present study took place in a medical ward with 24 beds and satellite kitchen, as well as a surgical ward with no satellite kitchen. The ward with the *satellite kitchen* receives a trolley each morning with breakfast, lunch and supper from the central kitchen. The semi prepared food is cooked in the satellite kitchen and bulk portioned for the trolley serving. At end of each meal session, the trolley contents including any unserved food are discarded at the satellite kitchen. The ward *without a satellite kitchen* receives a trolley with ready cooked food and table wares from the central kitchen three times a day, just before breakfast, lunch and supper. Upon arrival of the food trolley at this ward, the service assistant serves the patients. Once the meal session is over, the trolley with the unserved food and the tableware is transported back to the central kitchen. In both cases, patients can go to the serving area where the food trolley is placed to receive their meals. If the patients' condition does not allow them to visit the trolley, the nursing staff brings the food to the bedroom,

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