A systematic review of food waste audit methods in hospital foodservices: development of a consensus pathway food waste audit tool

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Background: In some hospitals food waste has been reported as half of overall waste. Furthermore total hospital food waste has been measured as 37% preparation waste, 30% tray waste and 65% plate waste. Understanding the scope of this problem requires food waste to be measured, although no consensus method is available. Therefore, establishing a preferred method for conducting an aggregate food waste audit will provide hospital foodservices with the opportunity to measure their waste accurately.

Aims: (i) describe the methods and features of aggregate food waste audits used or developed for hospital foodservices and (ii) develop a consensus tool to support foodservices when conducting an aggregate food waste audit

Methods: Documents could be included in this review if they were: in a hospital foodservice for patient, staff and visitor feeding; included an aggregate waste audit method previously used or developed for use in a hospital foodservice; described the waste audit method; and was from the year 2000 onwards. There was no restriction on study design or location. Seven electronic databases were searched for peer reviewed literature and 17 Google Advanced searches were completed to locate grey literature using keywords related to hospital, food and waste. Data were extracted into a custom table designed for this review and the most common practices were synthesised to develop a consensus tool suitable for use in hospital foodservices (Figure 1).

Results: The research team located 8 peer reviewed papers and 9 grey literature documents. There was variability in data collection periods (1-30 days), the most common was 2 weeks (5/17). Foodservice staff were the most prominent group to collect waste (5/17) with some studies using a combination of researchers and foodservice staff. Only 3 documents reported training staff. Waste was measured mostly at all main meals (5/17) with other recommendations or methods measuring snacks, dessert or only two main meals. Plate waste was collected the most (14/17) followed by preparation waste (12/17) and unserved waste (11/17). Only 4 documents reported collecting food-related waste. Electronic scales were recommended by 12/17 documents to measure waste.

Conclusions: This review has consolidated the available evidence into a consensus tool for hospital foodservices to measure food and food-related waste (Figure 1). The tool provides different hospital foodservices with options to decide on an audit method that suits their kitchen’s needs. To demonstrate change in food waste the application of a reduction strategy followed by a subsequent re-audit is needed. Future research is required to apply and test this tool in practice.