



Fundamentals of Sustainable Health Systems

Cases & Faces of Sustainable Healthcare

Hotspot: Food Sustainability

Case study: Hotel-style hospital room service at Mater Hospitals, Australia

Setting: Mater Hospitals, Australia

- Established in 1906
- Catholic, not-for-profit healthcare organization with 7,500 employees spread across a mix of seven public and private hospitals
- Mater Private Hospital Brisbane is the largest of the private facilities, with 238 beds. It was here that the hotel-style room service model was first implemented
- Mater's community-based hospitals, Mater Private Hospital Redland and Mater Private Hospital Springfield, offer medical and surgical services to support their local areas
- Collectively, these facilities provide care for approximately 500,000 patients annually
- Mater is built "on a foundation of collaboration and a shared vision as a Catholic ministry to meet unmet community need"
- The organization has a prominent environmental sustainability mandate, with a commitment to embed sustainability "into every layer of [its] institution"

As is the case in most hospitals, patients at Mater used to indicate their menu selections on a paper menu well in advance of mealtimes. Meals were then prepared in bulk and delivered at fixed times regardless of the patient's schedule. This system frequently resulted in order mix-ups and patients who were dissatisfied with their meals, with both problems producing a significant amount of food waste. Moreover, patients had suboptimal nutritional intake—a globally recognized problem for patients in acute-care settings, with 30 percent at risk of malnutrition.

In light of these ongoing issues, Sally McCray, Director of Nutrition and Dietetics, David Terrill, Room Service Project Manager, and Liam O'Toole, Food Service Manager, came together to explore potential changes to Mater's patient food service that would improve patient nutrition, safety, and satisfaction. In order to assess different meal service models, the team toured several US hospitals in 2003. They emerged with an appreciation of diet office technology and software, as well as an interest in hotel-style room service.

In 2012, the team built a business case for diet office technology that would facilitate room service ordering at Mater's Private Hospital Brisbane. In an effort to make the strongest possible case to hospital leadership, they hired North American healthcare consulting firm DM&A to help plan and support the initiative. They framed the project objectives as follows:

- Improve patient satisfaction scores
- Lower food waste
- Improve patient safety
- Improve workflows—less paper, less manual input
- Improve patient nutrition

The management team agreed to a tender process and accepted submissions from several diet software vendors, ultimately selecting CBORD to provide Nutrition Service Suite® (NSS), diet office automation, along with Room Service Choice®, a technology that supports a call center and bedside assistance with mobile meal ordering technology.

CBORD worked closely with Mater's IT team to build and test the necessary interfaces, to install the required technology in the kitchen, and to train food service staff on the software. Meanwhile, DM&A provided on site coaches to help with design, workflow, and customer service training. These efforts were complemented by Mater's recent hiring of a top executive restaurant chef, whose focus on upscaling the menu also included an emphasis on attractive food presentation (which is linked to increased patient satisfaction).

The "Room Service" concept was implemented in 2013. Under the new system, patients were able to order off an electronic menu across extended hours, and their meals were delivered within 45 minutes. The electronic system that was

developed to take these personalised meal orders was also able to track each meal delivery and monitor a patient's meal order pattern and nutritional intake to ensure that their nutritional requirements were being met.

Familiarizing food service and clinical staff with this new model was initially a challenge, not only because it involved learning a new technology, but also because it required the adoption of a new approach to scheduling clinical care—one that took patient-preferences around mealtimes into account.

Despite these initial challenges, the project has been deemed a resounding success, with a comprehensive analysis of key outcomes—including nutritional intake, waste, food costs, and patient satisfaction—revealing a series of wins.¹ Overall average plate waste has reduced from 29% to 12%, with the greatest reduction occurring in oncology and surgery (typically the hardest patients to feed); the oncology group, for example, saw a reduction in plate waste from 34% to 6%. Decreased food waste is important from a sustainability perspective because it keeps avoidable waste out of the waste stream. Reductions in waste also produce cost savings for the organisation—overall food cost has decreased by over 15% (over \$500,000) in one year. Costs are also saved because the project has resulted in improved patient nutrition, including an increase in total energy and protein intake, as well as in energy and protein as a percentage of patient's requirements. These patients are at far less risk of malnutrition and its costly consequences, such as a longer hospital stay, greater risk of complications, and poorer in-hospital clinical outcomes. Finally, patient safety has improved because the electronic system includes restrictions based on food allergies and requirements, avoiding the potential errors associated with manual entry.

The program has expanded, and Mater's Room Service model currently delivers over 2,000 patient meals a day out of three kitchens across two campuses. In recognition of the extent to which the new food service system had enhanced the safety and clinical monitoring of its patients' food intake, Mater Hospital won the 2014 Private Hospital Association of Queensland award for non-clinical innovation and the overall prize for innovation in the state. In 2018, Mater Dietetics and Foodservices team won two awards at the 2018 Clinical Excellence Showcase Awards: the People's Choice Award for Best Presentation and the Contagion Award (Idea most likely to spread).

¹ An evaluation of outcomes is only possible when baseline data are collected – a task the project team was careful to undertake at the outset of the project.

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