Sally McCray has been the Director of Nutrition and Dietetics at Mater Health, Brisbane since 2001. Mater Health includes adults, maternity and paediatric public and private hospitals across three Brisbane campuses. Sally has worked in a number of hospitals in Australia as well as in Canada over her 23 years as a Registered Dietitian. She has experience within a number of different healthcare foodservice models as well as in restaurant and hotel foodservice environments. She holds an Honorary Adjunct Assistant Professor position with the Faculty of Health Sciences and Medicine at Bond University, Queensland and is an Honorary Fellow at Mater Research Institute – The University of Queensland, Australia.

One of Sally’s particular areas of interest is the development and implementation of innovative foodservice models to achieve optimal patient clinical outcomes, healthcare cost management and of course customer satisfaction. She is particularly interested in the clinical benefits of foodservice models as they relate to patients’ nutritional intake and possibly as a tool to address the global issue of malnutrition risk in the healthcare setting. Her current research is focused on a “balanced scorecard model” in regards to measuring and documenting the benefits of room service and she is currently pursuing the question “Is room service a new treatment to help manage malnutrition?”
Do You Want To Provide Food or Do You Want Your Patients to Eat?

Room service improves nutritional intake in hospital

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Challenges/ Drivers?

- 7 Hospitals
- Public and Private services
- Adults, Maternity and Paediatric facilities

Financial
- Cost containment/ budget restrictions
- Manage to budget
- Control musher (DBB) footers/ schedules

Systems and processes
- Mass food production
- Traditional manual models – slow to embrace technology
- Operational schedule ≠ clinical schedule

Clinical care
- Increasing clinical complexity
- EBP/ research underpins care
- National standards (NSQHS)
- Increasing complexity of diets
- Menu design and nutritional quality
- Clinical schedule ≠ operational schedule
- Malnutrition prevalence

Mission Vs. Margin
"Nutrition Vs. Foodservices"
Malnutrition – The Clinical Issue

- Prevalence well recognised in the acute setting
  - 25-80% (higher in the elderly, cancer population, long stay units)
- Increased LOS; higher treatment costs (Norman K et al. Clin Nutr, 2008; 27:5-15)
- Increased pressure injury prevalence (Banks M et al. Nutrition 2010; 26:886-882)
- Risk of infection (Fry DE et al. Arch Surg, 2010; 145:151)
- Risk of falls (Bauer JD et al. J Hum Nutr and Diet 2007; 20:558-564)
- Poor hospitalisation outcome, increased costs (Lim, SL et al. Clin Nutr, 2012; 31: 345-350)

Nutritional Intake and Malnutrition

The Australasian Nutrition Care Day Survey, 2010

- 56 hospitals; 3122 patients; Australian and NZ
  - 32% malnutrition prevalence

Outcome data

- Malnourished pts. 1.5 times more likely to die within hospital within 30 days
- 90 day outcome data, risk factor for death increases four times
- 50% longer LOS
- Greater readmission rates (36% vs. 30%)
- 1 of 3 malnourished pts. eat <25%; 1 of 5 well nourished pts. eat <25%
- Malnutrition and poor food intake are independently associated with in hospital mortality

Cancer pts. 1.7 times more likely to be malnourished; prevalence of 50-80% (Boltong A et al, Australian Health Review, 2013)

Nutrition Day Survey, Europe 2006

- 16,455 patients; 256 hospitals; 25 countries
- 60% patients did not eat full meal
- Progressive increase of 30 day mortality with decreased food intake
  - <1% eating full meals vs. 6% < 25% intake vs. 9% eating nothing
  - Reasons: Not hungry (43%); normally eat less; don’t like taste; don’t want to eat; nausea
  - Recommendations (UK NICE): fortified food, additional snacks/ sip feeds, enteral/ parenteral nutrition
Mater Health – Malnutrition Audits

- Prevalence is 24-27%
- Highest prevalence and numbers in oncology wards
- Highest prevalence in >65 years; as age increases prevalence increases
- Highest prevalence in LOS >21 days; as LOS increases, prevalence increases
- Between 11-50% are on a restrictive diet, varies by facility*
- 28% of pressure injury pts. (n=18) were malnourished

- Intake is <60% requirements

Pre 2013....

<table>
<thead>
<tr>
<th>Model</th>
<th>Issues</th>
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<tbody>
<tr>
<td>Fully manual, paper based menu; cook fresh</td>
<td>Manual system – inefficiencies/paper waste</td>
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<tr>
<td>Manual recipes (limited analysis)</td>
<td>Poorly integrated menu – production load</td>
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<tr>
<td>Approx. 900 meals; 3 x day</td>
<td>Poor nutritional analysis of menu</td>
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<tr>
<td>Approx. 80 diet types + combinations (low integration in menu)</td>
<td>Significant wastage of supplements</td>
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<tr>
<td>Standard mid meals/ supplements/ fortification</td>
<td>High plate waste (30%) and kitchen waste</td>
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<tr>
<td>Meal order taken up to 24hrs in advance</td>
<td>Many late meal deliveries/default meals</td>
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<tr>
<td>Low/ no interaction with patient meal ordering</td>
<td>Poor nutritional intake – approx. 60% requirements</td>
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<tr>
<td>Meals delivered at set meal times (unchanged)</td>
<td>Patient feedback</td>
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Room Service Choice on Demand ™

“The right meal to the right patient at the right time”

1. Significant shift from healthcare foodservice focus to a hotel foodservice focus
   whilst still maintaining healthcare risk management and clinical acuity framework

2. Focus on patient driven care
   - Shift to customer focused service vs hospital driven timetable
   - Shift to greater patient engagement and participation

Operationalizing Room Service

1. Redesign of kitchen
2. Redesign of menu - 1 hotel style a la carte menu (challenge to integrate diets)
3. Redesign of meal process - meal order and timing driven by the patient

   - Implementation of electronic menu management system
   - Strong customer focus – training, service delivery
   - Integrated multidisciplinary team; focus on nutrition
The Menu

- 1 ‘a la carte’ restaurant style menu
- 97% diets integrated
- 0630-1900hrs service
- All day breakfast
- “Build your own” concept/ flexibility
- Educational symbols

Room Service Choice on Demand

- Patient phones when ready to place order (6.30am - 7.00pm)
- Food is made to order and assembled in kitchen
- Expediter checks the tray for all items
- Meal is delivered within 45 mins of order
- Tray is tracked through software and picked up 1 hr after delivery

Measuring Outcomes

Mater Food and Nutrition Balanced Scorecard

<table>
<thead>
<tr>
<th>Financial performance</th>
<th>Reducing food costs</th>
<th>FTE neutral</th>
<th>Reduced waste ?</th>
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<tr>
<th>Patient experience</th>
<th>Improved patient satisfaction (Press Ganey)</th>
<th>Consumer engagement (Standard 2)</th>
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<tr>
<th>System integration and change</th>
<th>Manual → electronic</th>
<th>Process efficiencies</th>
<th>Patient identification (Standard 5)</th>
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<tr>
<th>Clinical care and outcomes</th>
<th>Reduction errors/ default meals</th>
<th>Increased nutritional intake (Standard 12)</th>
<th>Increased patient safety/ monitoring</th>
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Financial sustainability
Put the patient first
Be responsive

Australian National Hospital Accreditation Standards
Nutrition (Standard 12), Consumer Engagement (Standard 2), Patient Identification (Standard 5)
Mater Food and Nutrition Balanced Scorecard

1. Financial Savings
   - Reduced patient food costs (15-20%)
   - Improved stock control/purchasing
   - FTE neutral
   - Reduced plate waste/production waste
   - Nil incorrect/default meals

2. Patient satisfaction
   - Improved Press Ganey scores
   - Better menu integration and choice/availability
   - Greater patient interactions and engagement
   - Nil default meals

3. System integration and efficiencies

4. Clinical Outcomes

Sally McCray, Director Nutrition and Dietetics, Mater Group, Brisbane
**Mater Food and Nutrition Balanced Scorecard**

### 1. Financial
- Reduced food costs – 15-20%
- Improved stock control/purchasing
- FTE neutral
- Reduced plate waste/production waste
- Nil incorrect/default meals

### 2. Patient satisfaction
- Improved Press Ganey scores
- Better menu integration and choice/flexibility
- Greater patient interactions and engagement
- Nil default meals

### 3. System integration and efficiencies
- Manual → electronic
- Integrated patient safety measures – compliance, identification, audit data
- Evidence for national standards
- Nutrition embedded into the MDT

### 4. Clinical Outcomes
- Nil default/wrong meals
- Improved management allergies and intolerances
- Patient satisfaction = nutritional intake?
- Improved nutritional intake

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**National Accreditation Standards**

II. Provision of Care

1. Assessment and care planning ensure that current and ongoing needs of the consumer/patient are identified.

2. The organisation ensures that the nutritional needs of consumers/patients are met.

3. Systems for ongoing care and discharge/transfer are coordinated and effective and meet the needs of the consumer/patient.

4. The care of dying and deceased consumers/patients is managed with dignity and comfort and family and carers are supported.
Nutritional Intake Data Collection
(Mobile Intake™ - November 2016)

- Document intake as trays collected
- Mobile tablet device/ ipads
- Nutritional intake : Plate waste
- Screen displays exact food served to patient
- % intake : waste & reasons
- Nutrient contribution by meal, day, series of days

Financial Performance
- Reduced food cost and waste
- Enhanced stock control and purchasing; forecasting
- Reduced kitchen and plate waste
- Reduced paper
- Use of seasonal produce

Patient Satisfaction
- Right meal at the right time
- Menu responsive to patient preferences and clinical needs
- Improved menu variety and quality
- Taste, temperature, service improvements

Clinical Outcomes
- Efficient processes
- Overcome paper and manual processing problems
- Introduce patient identification process
- Nutrition embedded into clinical care environment

Mater Food and Nutrition Balanced Scorecard

Key Learnings
- Patients know what they want and when they want it
- Increasing role of consumers in their healthcare decisions ➔ participatory medicine
  ➢ Our role is to provide a safe and clinically appropriate framework and environment to assist consumers to do this
- There are key points in the foodservice process that we can manipulate to enhance outcomes
- Use of electronic menu management system and process redesign allows integration of nutritional requirements and intake monitoring into daily clinical care
The Patient Foodservice Process → the points to manipulate

1. Menu content: quality/design/choice
   • Nutritional quality
   • Cost management
   • Integrated; ↓ production load

2. Meal order timing
   • Patient schedule vs. hospital schedule (closer to meal time)
   • ↓ changes/defaults/waste
   • ↑ patient satisfaction

3. Meal ordering interaction
   • Patient schedule vs. hospital schedule
   • ↑ nutritional intake
   • ↑ engagement/patient satisfaction
   • ↓ waste

4. Meal delivery
   • Increased intake
   • Increased satisfaction
   • Decreased waste
   • Decreased cost
   • Increase efficiencies
   • Increase safety
   • Increased data

Barriers to Nutritional Intake – patient perspective

(Hiesmayr et al. Clinical Nutrition 28, 2009, 484-491)
• Reasons: not hungry (43%); normally eat less; don’t like taste; don’t want to eat; nausea

(Mater Private Hospital Room service implementation, 2013)
• Reasons: satiated (53%), discomfort/nausea/unwell, taste/temp/dislike, poor appetite, default meal (no choice)
• “Keep calm and protect mealtimes: But what is the evidence? The findings of a systematic review and meta analyses” Porter et al, AuSPEN 2016
  ➢ 150 studies retrieved; 7 met criteria; 3 original research papers
  ➢ No stat significance; insufficient evidence for PM implementation

• “Evaluating an innovative foodservice approach to malnutrition in healthcare” Collins et al, AuSPEN, 2016
  ➢ High energy menu; enhanced mid meal service (visual tools); greater patient interaction
  ➢ Improved intake; no change patient satisfaction; study underpowered

The solution to poor nutritional intake?
• Reasons: Not hungry, feeling full, nausea, feeling unwell, poor appetite…..
• Recommendations: fortified food, additional snacks/ sip feeds, high energy menu, protected meal times?

OR……..
• Provision of
  ➢ a wide range of……
  ➢ high quality foods……
  ➢ at times that patients feel like it?

……..Room Service Choice on Demand?

Our Future?
• Room Service across public and private hospitals and a range of cohorts (adult, maternity and paediatric)
• Ensure routine outcome measurement
  ➢ Mobile Intake™
  ➢ Evidence based foodservice models
• Further research into solutions for improving nutritional intake malnutrition risk and prevalence

• Foodservice models as a primary clinical treatment?
• “In summary...... **malnutrition** might be one of the most important factors that interferes in health and disease in the hospital setting.....

....... The best decision is to treat the disease and **nourish the patient**....

.......therefore it is fundamental to understand the **significant role that nutritional therapy plays** in improving the outcome of those who cannot or may not eat during their disease process, similar to what **hemodialysis** represents to patients with renal failure or ventilatory support to those with respiratory failure.”


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**Do You Want To Provide Food or Do You Want Your Patients to Eat?**

Room Service......... A new clinical treatment for malnutrition risk?

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