Monitoring of nutritional status in hospitalized patients: the Australian experience (OP008)

E. Agarwal (Australia)
The Australasian Nutrition Care Day Survey: Investigating nutritional issues in acute care hospitals

Ekta Agarwal
PhD Candidate
The University of Queensland
Australia
Email: e.agarwal@uq.edu.au
Why

nutritionDay:

• 1-day cross-sectional food intake audit + outcomes evaluation

• 2006: >16000 patients from 25 countries in Europe
  ▪ > 50% did not eat all the offered food
  ▪ ↓ food intake → 30-day in-hospital mortality
Literature Review

• In Australian & New Zealand hospitals:
  – ? food intake
  – Malnutrition prevalence: 11 – 76%\(^{(1-8)}\)
  – ? Independent association:
    • Poor food intake & health-related outcomes
    • Malnutrition & health-related outcomes

Aims

To evaluate:

- The *independent* association of malnutrition and decreased food intake with health-related outcomes of acute care patients

- Nutrition care practices in acute care hospital wards
Methods:

Phase 1
- Nutritional status
- 24-hour food intake

Phase 2
- Health-related outcomes
- Disease type and severity

Phase 3
- Nutrition screening & rescreening
- Nutrition support
Mild-moderate / Severe Malnutrition\(^1\):

“BMI < 18.5 kg/m\(^2\) OR unintentional loss of weight (5-9% / 10%) with evidence of suboptimal intake resulting in mild-moderate / severe loss of subcutaneous fat and/or muscle wasting.”

\(^1\)National Centre for Classification in Health (2009)
Phase 1

>300 dietitians from participating hospitals collected data

**Nutritional Status**

- Weight
- Height
- MST

**Food Intake**

24-hour intake hospital food (Main meals, snacks):
0, 25, 50, 75, 100%

Type of diet
Reasons for not eating

**BMI**

MST score ≥ 2

**SGA**
Original article

Nutritional status and dietary intake of acute care patients: Results from the Nutrition Care Day Survey 2010

Ekta Agarwal a,⁎, Maree Ferguson b, Merrilyn Banks c, Judith Bauer a, Sandra Capra a, Elisabeth Isenring a,b

a School of Human Movement Studies, The University of Queensland, QLD 4072, Australia
b Princess Alexandra Hospital, Brisbane, QLD 4102, Australia
c Royal Brisbane and Women’s Hospital, Brisbane, QLD 4029, Australia
Phase 2

Data collected 3 months post- Phase 1 (Health records dept.)

• Health – related outcomes:
  – LOS
  – Readmissions
  – 30-day and 90-day in-hospital mortality

• Disease type: AR-DRG codes → Major Diagnostic Categories

• Disease severity: Patient Clinical Complexity Level scores

• Statistical analyses:
  – Trimming methodology (LOS data)
  – Multiple regression analyses
THE INDEPENDENT IMPACT OF MALNUTRITION AND DECREASED FOOD INTAKE ON LENGTH OF STAY, READMISSION, AND MORTALITY IN ACUTE CARE PATIENTS

Eskia Agrama1, Maeve Ferguson1, Merrily Beale1, Marjorie Bateman1, Judith Bauer1, Sandra Capra1, Elizabeth Irving1,2
1 The University of Queensland, Brisbane, Queensland, Australia; 2 Princess Alexandra Hospital, Brisbane, Queensland, Australia; 3 Royal Brisbane and Women’s Hospital, Brisbane, Queensland, Australia; 4 The University of Wollongong, Wollongong, New South Wales, Australia

Introduction
Confounders such as type and severity of disease have rarely been controlled for while evaluating the association between nutritional issues and health-related outcomes.

The Australasian Nutrition Care Day Survey (ANCDS) is the first multicentre study in Australian hospitals to control for these confounders while exploring if malnutrition and poor food intake have an independent association with health-related outcomes in acute care hospital patients.

Methods
The ANCDS was conducted in two phases in 56 hospitals across Australia and New Zealand:
Phase 1: Evaluation of:
- Nutritional status: Subjective Global Assessment
- Food Intake: for a 24-hour period recorded as 0, 25, 50, 75, 100%
Phase 2: Data collected 90-days postPhase 1:
- Outcomes: Length of hospital stay (LOS), readmissions, in-hospital mortality
- Disease type: Major diagnostic categories
- Disease severity: Patient Complexity Level Scores (PCCS scores)

Statistical tests were performed using PASW Statistics 18. Multiple regression analyses were used to control for confounders. Statistical significance was set at p < 0.05.

Sample characteristics:
- N= 3122 patients
- 53% males, Mean age: 65 ± 18y
- 32% Malnourished
- 23% consumed ≤ 25% of the offered food

Results
- Malnutrition was associated with longer LOS, readmissions and in-hospital mortality (p < 0.05);
- Consumption of ≤ 25% of the offered food was associated with in-hospital mortality (p < 0.05);
- Malnutrition and consumption of ≤ 25% of the offered food were independently associated with in-hospital mortality (p < 0.05).

Conclusions
- In contrast to age, disease type and severity, malnutrition and poor food intake are modifiable risk factors for health-related outcomes in acute care patients.
- Findings from the ANCDS accentuate the importance of implementing evidence-based nutrition care practices in hospitals.


• Poster presentation: Sunday, 9th September 2012 (12.30 – 2pm)

• Manuscript under review
Phase 3

- **Questionnaire** - completed by Directors (Nutr & Diet Dept.)

- **Practices related to:**
  - Nutrition Risk Screening & Rescreening
  - Nutrition support
Nutrition care practices in hospital wards: Results from the Nutrition Care Day Survey 2010

Ekta Agarwal a,*, Maree Ferguson a, b, Merrilyn Banks a, c, Marijka Batterham d, Judith Bauer a, Sandra Capra a, Elisabeth Isenring a, b

a The University of Queensland, School of Human Movement Studies, St Lucia, Brisbane, QLD 4072, Australia
b Princess Alexandra Hospital, Brisbane, QLD 4102, Australia
c Royal Brisbane and Women’s Hospital, Brisbane, QLD 4029, Australia
d The University of Wollongong, Wollongong, NSW 2522, Australia
The Australasian Nutrition Care Day Survey (2010)

- 3122 participants : 370 wards : 56 hospitals in AUS & NZ
- 20% of AUS & 38% of NZ hospitals (>60 beds)
Key Findings:

**Phase 1**
- Malnutrition prevalence: 32%
- 70% participants did not eat all the offered food
- “Not hungry”

**Phase 2**
- Malnutrition $\rightarrow$ prolonged LOS, 90-day in-hospital mortality
- $\leq 25\%$ food intake $\rightarrow$ 30- and 90-day in-hospital mortality

**Phase 3**
- Nutrition screening not done in $\sim 40\%$ of wards
- Malnutrition Screening Tool
- Dietitian referral
Challenges

• Encouraging hospitals to participate in the study
  – Validated nutrition screening & assessment
  – Insight into nutritional issues, identify areas for improvement
  – Individualised results along with overall results

• Patient Consent
  – Prevalence of malnutrition: Under-reported

• Providing training on data collection methodology
  >300 dietitians
  – Webinar-based training sessions (AuSPEN)
  – Written explanation sheets
Recommendations

• Participate!!
  – Insight into nutritional issues
  – Raises awareness
  – Teamwork

• Nutritional screening and assessment component using validated methods
Acknowledgements

• Supervisory team:
  – Dr Liz Isenring
  – Dr Maree Ferguson
  – Dr Merrilyn Banks

• Assoc. Prof. Judy Bauer and Prof. Sandra Capra (C-Diet-R)

• Dr Marijka Batterham

• Australasian Society of Parenteral and Enteral Nutrition (AuSPEN)

• Queensland Health

• Participating hospitals
```
"..Thousands of patients are annually starved in the midst of plenty .."
Florence Nightingale, 1859
```