Management of malnutrition in hospital and post-discharge

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Observations and reflections
The Skeleton
in the Hospital Closet

As awareness of the role of nutrition in recovery from disease increases, physicians are becoming alarmed by the frequency with which patients in our hospitals are being malnourished and even starved. One authority regards physician-induced malnutrition as one of the most serious nutritional problems of our time.

by CHARLES E. BUTTERWORTH, Jr., M.D.
Why are the skeletons still hiding in the hospital closet?

Because they had no body waiting for them at home.
Is our inpatient model of care failing?

Increased inpatient acuity
Demographic changes
Increased life expectancy
Decreased length of stay
Value not volume
Unfunded service demands
Digital transformation: ↑ screening & referral

EMR-GEDDON
Are ‘at risk’ inpatients receiving timely, appropriate nutrition care?

<table>
<thead>
<tr>
<th>SIMPLE sites baseline audit findings preliminary data: n=350; 6 sites (%)</th>
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<tr>
<td><strong>Audit</strong></td>
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<td>at risk with documented malnutrition diagnostic assessment</td>
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<td>at risk receiving food and nutrition prescription</td>
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<td><strong>PREMS</strong></td>
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<td>‘Somebody has told me that I am at risk of malnutrition’</td>
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<td>‘I have received information about being at risk of malnutrition’</td>
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<tr>
<td>‘I mostly receive help with my meals when I need it’</td>
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<td>‘I have a plan for ongoing nutrition care’</td>
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**Patients receiving comprehensive malnutrition care: 23%**
Is our care high value or high volume?

Values based healthcare

**High value healthcare**
- Outcomes that matter to the patient
- The cost or resources of providing care

**Low value healthcare**
- Services that deliver very small health benefits
- The cost or resources required to provide care
What do our inpatient dietitians think about this?

5.2

The time I spend in this ward represents high value for taxpayers and healthcare funders:

Never 1 2 3 4 5 6 7 8 9 10 Always

6.2

My skills, knowledge, and intellectual abilities are under-used in this ward:

Never 1 2 3 4 5 6 7 8 9 10 Always
Are our inpatient dietitians enjoying their work?

**Average dietitian workforce experience score**

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<td>Very</td>
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Estimated score: 4.7
Are there any low value care opportunities for potential disinvestment?

- 9 nominal group technique workshops conducted across eight sites.
- Dietitians (51) and assistants (12) identified 101 low value dietetic actions considered suitable to replace with systematised, interdisciplinary alternatives.
- Spread across screening (n=5), assessment (n=31), diagnosis (n=2), intervention (n=45), and monitoring and evaluation (n=18) domains of the nutrition care process.
- Actions that received the highest number of nominal group technique votes were:
  - comprehensive dietitian assessments for low risk referrals (n=50)
  - dietetics follow-up reviews where unlikely to add substantial benefit (n=32)
  - individualised inpatient educations by dietitian where specialised education or counselling were considered low-value (n=28)
  - individualised food and fluid support for patients who do not require specialised dietitian care (n=22)
Should we be reinvesting outside the 4 walls of the hospital?

- Screening and malnutrition care hospital focussed
- Resources for malnutrition care stacked in hospitals
  - 2% the total malnutrition burden is accounted for by hospital patients at any one time
  - 90% of malnutrition originates and exists outside of hospitals and residential aged care homes
- >½ ‘at risk’ do not report awareness of a post-discharge nutrition care plan
- Post-hospital nutrition care and dietetics follow-up is only provided for a select few

Elia, 2015
Laur et al, 2018
Laur et al, 2017
Keller et al, 2017
Bell et al, 2019
Are we failing to engage the right people?

To deliver the right nutrition care?

At the right place?

And at the right time?
Is it because nobody cares?

“the culture... hospital wide is very task oriented and nutrition is one of those things down the bottom”

“We’re forgetting the basics; it’s all about the bling, bling, kind of things”

Bell et al, 2013
Laur et al, 2015
Am I even asking the right questions?

Do I already think I know the answers?
Malnutrition is a wicked problem

- No gold standard screen or diagnosis
- Multiple aetiologies
- No single, clear intervention
- Socially complex
- Not the responsibility of single stakeholder / professional group
- Characterised by chronic policy failure
- Solutions require behaviour change across complex systems

Rittel & Webber, 1973
Young et al, 2015
Wrong answers to the wicked problem of malnutrition:

- Relying on single screening tools or focal points of identification
- Assuming knowledge of the underlying cause and the best treatment option
- Applying ‘one size fits’ all approach to interventions
- Relying on a specialist dietitian to deliver nutrition care for all ‘at risk’ patients
- Focusing just on the patient in front of you instead of local and global policy and practice
- Stacking all eggs into a single [hospital] basket
Some key steps to improving wicked problems...

- Articulate key problems, barriers and enablers
- Engage all relevant players from the start – experience-based co-design approaches
- Identify and support leaders, facilitators, and change champions
- Build strong relationships within teams
- Build in sustainability and spread from the start
- Consider and synthesize existing knowledge
- Measure the right things
- Build reasons to change
Some key steps to improving wicked problems...

• Apply, tailor, and/or develop models that ‘manage’ wicked problems
• Target individual, inner, and outer behaviour changes across interventions, policy and practice
• Leverage data and technology opportunities
• De-implement to reinvest elsewhere
• Break bad habits and build good ones
• Actuate opportunities, offers, cash and in-kind support
• Consider, measure and evaluate feasibility, implementation, and process measures
• Apply multiple measures from multiple angles to demonstrate outcomes and sustain change
• Educate, communicate, market, and disseminate
• Abandon linear approaches and embrace a messy world
Real world examples

1. Multi-modal, multidisciplinary nutrition care in hip fracture
2. SIMPLE
3. More-2-Eat
Articulate key problems, barriers, enablers to improving nutrition care for patients

Changing nutrition care practices in hospital: a thematic analysis of hospital staff perspectives

Celia Laur, Renata Valaitis, Jack Bell and Heather Keller

BMC Health Services Research
Articulate key problems, barriers, enablers

- Only 2 patients met requirements for protein and energy
- Malnutrition >50% with additional 11% incidence
- Patient perceptions that malnutrition and (or) inadequate intake were not a problem
- Patient and clinician perceptions that treatment for malnutrition was not a priority.

Bell et al, 2013
Engage all relevant players from the start

Original Communication

“\textit{I Wouldn’t Ever Want It}”: A Qualitative Evaluation of Patient and Caregiver Perceptions Toward Enteral Tube Feeding in Hip Fracture Inpatients

Patricia C. King, MDietSt\textsuperscript{1}; Sally E. Barrimore, MNutDiet\textsuperscript{2}; Ranjeev C. Pule, MBBS, FRACP\textsuperscript{2}; and Jack J. Bell, PhD\textsuperscript{1,2}

An inductive qualitative study exploring the perceptions of hip fracture inpatients and caregivers toward Enteral Tube Feeding
Engage all relevant players from the start

Modified Delphi process allowed consensus to be developed based on better practices

Evidence-informed, consensus based pathway for nutrition care

Attention to feasibility has created a pathway with greater implementation potential

External validation with practitioner groups promoted a conceptually easy to use format.

Established multidisciplinary clinician consensus and support for an ‘Enteral tube feeding decision support tool’ to be applied across acute hip fracture settings
Identify and support leaders, facilitators, and change champions

“Key functions of the facilitator role were:
• building relationships and trust;
• understanding the problem and stimulating change through data;
• negotiating and implementing the change; and
• measuring, sharing and reflecting on success.

Facilitators can support iterative improvements through building trust and relationships, co-designing strategies with champions and teams and developing internal capacity for change”
Build strong relationships within teams
Build in sustainability and spread from the start
Build in sustainability and spread from the start

Pragmatic action research enables:

• Research to be conducted as part of routine clinical practice
• Engagement of the multidisciplinary healthcare workers as co-researchers to identify and implement practical, sustainable solutions
• An effective vehicle for complex organisational change
• Demonstrated improvements in related patient and healthcare outcomes at the bedside
• High translation validity and relevancy to clinical practice
Consider and synthesize existing knowledge

Systematic review:

Nurses are well placed to lead the essential processes of nutritional care to older adults, and can safely provide:

- oral nutritional supplements
- food/fluid fortification or enrichment
- dietary counselling and education to older adults

Interventions to prevent and treat malnutrition in older adults to be carried out by nurses: A systematic review

Debbie ten Cate MSc, RN, Roelof G. A. Ettema PhD, RN, Getty Huisman-de Waal PhD, RN, Jack J. Bell PhD, AdvAPD, Remco Verbrugge MSc, MANP, RN, Lisette Schoonhoven PhD, RN, Marieke J. Schuermans PhD, RN, On behalf of the Basic Care Revisited Group (BCR)

ten Cate et al, 2020
Measure the right things

All tools failed to predict a considerable number of patients with malnutrition. This may result in the under-diagnosis and treatment of malnutrition, leading to case-mix funding losses.

- The ASA score is independently associated with 12-month mortality; this was not replicated using either version of the CCI.
- The data does not suggest using the CCI in registry level datasets for the purposes of predicting 12-month mortality.
Build reasons to change

- Malnutrition is associated with time to mobilise, favourable discharge destination, and mortality

- Logistic regression analysis demonstrated that malnutrition independently predicts 12-month mortality
Apply and develop models that ‘manage’ wicked problems

... more comprehensive preoperative assessment, shorter times to theatre, reduced post-operative complications and diminished mortality rates when the principles undermining this unit are instituted

A multidisciplinary, multi-modal nutritional care model:
- Reduces barriers to intake
- Improves total protein and energy intake
- Reduces malnutrition incidence
- Increases home discharge rates
Apply and develop models that ‘manage’ malnutrition in the inpatient setting

SIMPLE

INPAC & More-2-Eat

Bell et al, 2018
Keller et al, 2017
A locally tailorable, complex healthcare intervention.

- More appropriate nutrition care to more patients
- Higher value care
- Better workforce experience
- Increased opportunities for full and expanded scope of practice
- Standard V bonus points
Bell et al, 2018

**Standard Nutrition Care:**
Multidisciplinary team & carers

- Food & nutrient delivery
- Avoid prolonged NBM
- Limit unnecessary mealtime interruptions
- Selective high quality menu
- Assist with menu selection
- Pre-meal preparation
- Feeding assistance & encouragement
- Adequate time to eat
- Support food intolerances, allergies or specific requirements
- Avoid unnecessary dietary restrictions
- Identify ongoing poor intake / nutritional deterioration during admission

**Education**
- High quality nutrition education materials
- Nutrition care marketing / communications
- Staff inservices / professional development

**Coordinated nutrition care**
- Nutrition care procedures / guidelines
- Minimise medical related barriers to intake
- Manage swallowing & diet related issues
- Nutrition audits, quality activities and research
- Nutrition governance processes

**Supportive Nutrition Care**
Multidisciplinary team & carers

- Standard nutrition care +

- Food & nutrient delivery
- High protein/energy appropriately textured menu
- Selective mid-meal trolley
- After hours special meals
- 80mLs TDS 2 cal/ml supplement
- Standard tube feeding protocols

**Education**
- Basic inpatient education provided

**Coordinated nutrition care**
- Individualised mealtine encouragement
- Medication review
- Co-morbidity optimisation
- Malnutrition diagnosis & documentation
- 3 day food chart
- Weekly weight
- Team delegate documents & provides discharge plan to patient & care provider

Refer for specialised nutrition care if specialised nutrition care criteria met

**Specialised Nutrition Care**
A medical nutrition therapy (Dietitian / Nutrition Support team or Medical specialist) inpatient referral or review is indicated for:

- Supportive nutrition care +

- Food & nutrient delivery
- Patients commenced on standard feeding protocols
- Supportive nutrition care patients with ongoing inadequate protein/energy intake who are considered appropriate for enteral or parenteral tube feeding
- Other patients with complex nutritional needs who will benefit from highly specialised nutrition care

**Education**
- Acute inpatient education that is not medically appropriate to be delivered in an outpatient or community setting

**Coordinated nutrition care**
- Dietitian documents & provides discharge plan to patient – care provider for any patient still under specialised nutrition care at time of discharge
- Dietitians / Nutrition Support Teams should discharge patients back to Supportive Nutrition Care once Specialised Nutrition Care Criteria are no longer met. This must be documented in the medical record.
Model & toolkit

Rationale and developmental methodology for the SIMPLE approach: A Systematised, Interdisciplinary Malnutrition Pathway for implementation and Evaluation in hospitals

Jack J. BELL1,2,3, Adrienne YOUNG4,5,6, Jai IRLL3, Merrilyn BANKS7, Tracy COMANS6, Rhannon BARNES8 and Heather H. KELLER1,9

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simple@health.qld.gov.au
Target behaviour changes across policy, guidelines and practice
Leverage data and technology
De-implement to re-invest

Rushton et al, 2021
Actuate opportunities, offers, cash and in kind support

Local and global networks and teams
Students, HDRs, Post-docs
Partners and collaborators
Funders
- MRFF
- AusHSI
- AHPOQ
- TVN Canada
- Canadian Frailty Network
- The Common Good
Consider and evaluate feasibility

Researchers should consider a ‘silver standard’ of research and practice evaluation such as pragmatic, registry-based cluster randomised trials to ensure feasibility, relevancy and applicability when evaluating nutritional interventions in this cohort.
Apply multiple measures – patient and healthcare outcomes

Multidisciplinary, multi-modal nutritional care in acute hip fracture inpatients – Results of a pragmatic intervention


A multidisciplinary, multi-modal nutritional care model:
• Reduces barriers to intake
• Improves total protein and energy intake
• Reduces malnutrition incidence
• Increases home discharge rates

Implementation of nutrition screening and diagnosis is feasible and leads to appropriate care.
INPAC promotes efficiency in nutrition care while minimizing the risk of missing malnourished patients
The estimated cost effect of poor screening tool sensitivity on a 16-bed hip fracture unit ranged from AUS$46,506 to AUS$228,896 per year.

Routine nutrition assessment should replace nutrition risk screening in hip fracture settings with a high prevalence of malnutrition reliant on case-mix funding.
Educate, communicate, market, and disseminate

- >30 related manuscripts, book chapters
- >50 presentations eg. Joint CNS and ASPEN Malnutrition week
- Advocacy and representational roles
  - Canadian Malnutrition Task Force
  - Canadian Nutrition Society
  - Fragility Fracture Network (Global)
  - Dietitians Australia
  - ANZ Hip Fracture Registry
  - NNEdPro
Advancing education through global knowledge networks, collaboratives and advocacy
Abandon linear approaches and accept complexity as the uncomfortable reality

Bell et al, 2018
Keller et al, 2017
Laur et al, 2017; 2018
Summary of my reflections on top of a mountain...

There is no perfect solution to the wicked problem of malnutrition

• Can we resolve malnutrition in hospital? Probably not in most cases
• Can we manage malnutrition in hospital? The answer might be SIMPLE...
• Should we be doing more than inpatient chocolate and strawberry waitressing? Survival of our patients and profession depends on ditching the latter...
• Should we be looking to outside the 4 walls of the hospital? Tune in to Heather Keller tomorrow.
References:


References

References


McNiff, J. and J. Whitehead, All you need to know about action research. 2nd ed. 2011, Los Angeles: SAGE. vi, 274 p.


References


