Better hospital food for patients – experiences from Denmark

Henrik Højgaard Rasmussen
Better hospital food for patients – experiences from Denmark
"Hospitals should be restaurants"

Danish politician

A la carte model

Exciting choices

More delicious

The patient in focus

A success

Not expensive

Serving within half an hour
Should a doctor talk about food?
I am **not** going to talk about **FOOD**

but

about the **context of the structured nutritional process to improve food intake and clinical outcome** ...............
Driving forces:
- Nutrition science
- Food policy
- Food culture

Context of the structured process

Patient

Ambiance
- Serving
- Distribution

Screening
- Monitoring
- Menu

Preparation
- Recipes
- Artificial feeding

Kitchen
- Companies

Nutritional care practice

Nutrition plan

Assessment

Screening

Monitoring

Nutrition plan

Oral supplements

Counselling

Energy- and protein rich meals

In-between meals

Food serving systems

In-between meals

Nutritional assessment

Risk factors

GI-tract

Anthropometry
BIA
HGS

Biochemistry

BMR
What is going wrong?

- Hospital patients only eat about 30-60% of their requirements.
- Hospital undernutrition can largely be attributed to inadequate food intake notwithstanding sufficient food provisions.
- Large amount of plate waste and ineffective use of health care resources.

  Almdal T Clin Nutr 2003, Thibault R Clin Nutr 2010,

- Decreased food intake at meals has in itself been found to be an independent risk factor for hospital mortality (adjusted for age, severity of disease, LOS).
Mortality and food intake in European Hospitals

Nutrition Day Study

Adjusted Cumulative Incidence for Death in Hospital

Probability for Death in Hospital

Permutation Test p-values
(30 day mortality)

Length of Hospital Stay

Prevalence of Patients at Nutritional Risk in Danish Hospitals by NRS 2002

Rasmussen HH et al Clin Nutr 2004
# Nutritional care


<table>
<thead>
<tr>
<th>Information in records</th>
<th>% (at-risk:not at risk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Weight</td>
<td>64 (similar)</td>
</tr>
<tr>
<td>Recent weight loss</td>
<td>12 (19:7)</td>
</tr>
<tr>
<td>Recent dietary intake</td>
<td>20 (33:10)</td>
</tr>
<tr>
<td>Plan (req, food type, monitoring)</td>
<td>14 (33:8)(^1)</td>
</tr>
</tbody>
</table>

\(^1\) Related to recent weight loss and severity of disease, but not to BMI or recent intake.
A common core of barriers?

- **The structure**
  - Defined responsibility
  - Education/knowledge
  - Influence of the patients
  - Cooperation among the staff
  - Hospital managers/leading persons

- **Nutrition care process (practice):**
  - Screening ➔ Plan (requirements, meals) ➔ Monitoring (food registration/food intake)
  - Lack of appetite and unsuitability of the hospital food

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*Beck AM Clin Nutr 2001 and 2002*
*Rasmussen HH Clin Nutr 2006*
*Kondrup J Clin Nutr 2002*
Improving food intake in hospitals is a complex and multifactorial process.

A number of national initiatives have been taken in Denmark for improving food intake:

- Nutritional risk screening (NRS 2002)
- National nutritional care guidelines ([www.sst.dk](http://www.sst.dk))
- Better food for patients – project (grant from National Board of Health) ([www.sst.dk](http://www.sst.dk))
- Accreditation of hospitals for nutritional care ([www.IKAS.dk](http://www.IKAS.dk))
- Educational seminars
- Quality improvement studies
Standard for procedures

Screening

- At risk
  - REQ
  - Feeding
  - Plan for monitoring

Assessment

Specific Care Plan

- Monitoring & adjustment

Standard Care Plan

Monitoring

All patients

- Not at risk
- Ordinary food etc.

ESPEN guidelines 2004
Quality evaluation of the nutritional care

Patient involvement

Cooperation between hospitals and primary health care

www.sst.dk
STANDARD I: Patients in hospitals are assessed for nutritional risk.

INDIKATOR 1: Guidelines for screening patients to identify patients at nutritional risk. They should as a minimum include:
- A clear division of responsibility for screening and nutritional therapy.
- Description of screening method and patients to be screened.
- When patients should be screened, and reasons why patients have not been screened.
- A nutrition plan for patients at nutritional risk

INDIKATOR 2: Leaders and staff knows and uses the guidelines.

INDIKATOR 3: Nutrition screening should be documented in the records.

INDIKATOR 4: On the basis of quality assessment leading staff will make steps for quality improvements.
STANDARD II: Patients in hospitals at nutritional risk will get an individual nutritional therapy.

INDIKATOR 1: Guidelines for a nutrition plan and monitoring. These should include:
- Assessment of energy- and protein needs according to recommendation from National Board of Health
- Prescribing a diet
- Registration of food intake and calculation of energy- and protein intake. Furthermore weight should be monitored.
- Indication for modifying the nutrition plan.

INDICATOR 2: Leaders and staff knows and uses the guidelines.
INDICATOR 3: Documentation in records for nutritional needs (energy- and protein).
INDICATOR 4: Documentation in records for the diet prescribed.
INDICATOR 5: On the basis of quality assessment leading staff will make steps for quality improvements.

www.ikas.dk
Nutritional structure in hospitals: Denmark, Norway and Sweden
Audit of approx. 1500 records among 4500 beds in Copenhagen

Copenhagen audit March 2006

Accreditation 2002 & 2005
Proportion of patients receiving ≥75% of requirements (N)

- <75%
- ≥75%

Phases and groups:
- Phase 1: (83) patients
- Phase 3: (137) patients
- Control >3d: (96) patients
- Team >3d: (90) patients

Team of nurse & dietitian:
motivation of patient and staff
rigid planning and supervision

Staff

Percent of patients

Can attitude be changed among the staff concerning hospital undernutrition?

Original Article

Management and perception of hospital undernutrition—A positive change among Danish doctors and nurses

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Implementation of Good Nutritional Practice: A One-year Multi-modal Intervention Study

The MORE study

Aalborg University Hospital

PP152-SUN (poster)
Methods

• Baseline measurements were followed by a 12 months intervention period and follow-up measurements.

• *Inclusion:* All adult hospitalized patients (> 3 days of admittance) at a randomly selected day were included (N = 546 patients)

• *Setting:* A university hospital with 990 beds and all specialities.

• *Baseline measurements (and follow-up measurements):*
  
  • Record audit for demographics
  • Screening for nutritional risk (NRS 2002)
  • Nutrition plan
  • Monitoring (energy- and protein intake by 24-hour recall interviews)
  • Each department had their own results from the baseline measurement presented, together with the overall hospital results
  • A questionnaire investigation was made including patients before and after the intervention
Multimodal interventions
12 months period

• Education for all clinical staff
• Local investigations of barriers towards GNP
• Action plans were then made and implemented to improve GNP
• Standard nutrition plans for eight diagnoses
• Improved hospital food (both for patients and staff)
• Education of kitchen staff
• Improved environments in the dining rooms (supervised by a research team of architecture and design in “food-scapes”)
• Personas
• Events, TV, press
• Cantinas were improved

Statistics: Mann-Whitney and Kruskal-Wallis test was used for ordinal data, and Pearson Chi square test for nominative data. P values <0.05 were considered significant.
Culinaric screening and
the delicacy wagon

In-between meals

Screening
Nutritional care process

Screening

E-intake > 75%
P-intake > 75%

Baseline
Follow-up

\[ p < 0.001 \text{ for all variables} \]
Methods

- A multi-modal three month intervention including departments of infectious diseases, haematology and heart-lung surgery at Aalborg University Hospital.

Interventions:
- Improving environmental aesthetics
- “Welcome-tray” with a special serving and written materials about food and nutrition
- Interview, which aimed to categorize patients into types associated with a specific menu and serving
- Improved menus and toppings to improve the delicacy impression on the plate.
- Food registration
Environment can improve energy intake

Energy intake

- Baseline
- Follow-up

Number of patients, %

- <25%
- 25-49%
- 50-74%
- ≥75%

Requirement fulfilled
Good nutritional practice (GNP) is a complex and multifactorial process to improve food intake.

- GNP needs a multimodal approach both at a local and a national level.
- National/local guidelines.
- Accreditation/audit procedure (ex. study, act, plan, do).
- GNP should include (based on ESPEN guidelines):
  - Process (ex. screening).
  - Structure (ex. nutrition teams).
  - Result (ex. food registration).

- We need a more tight and well-defined feeding algorithm including assignment of responsibilities (and doctors role).

- **Driving forces**: science, food policy, and food culture/environment.
Let's join the forces