From the mid-nineties a joint venture between the Danish Veterinary and Food Administration, the Danish National Board of Health (NBH), politicians and an advisory board under the auspice of DAPEN (Danish Society for Clinical Nutrition and Metabolism) developed a strategic multi-modal approach to fight malnutrition including:

- The initiative “Better food for patients”
- National guidelines
- Accreditation of all Danish hospitals regarding undernutrition.

Contact person: Henrik Højgaard Rasmussen, Centre for Nutrition and Bowel Disease, Aalborg University Hospital, Denmark. E-mail: hhr@rn.dk
Initiatives and activities

EXPERTS
Strategy: How to increase focus on nutrition?

Politicians

Patients Organizations Press

Departments Hospitals

National Board of Health
Strategy and interaction between actors

**Experts**

1990 – Science - press

1995-2009 Advisory Board (DASPEN):

- What is the problem? Questionnaire-investigation
- How big is the problem? Prevalence-investigation
- Can we solve the problem? Tools, guidelines, education
- Does it work? Implementation-strategy
- Follow-up? Re-measurements and strategy for improvement

**Health care**

1995 Organisation
- Nutrition teams
- Regional nutrition committees
- Quality databases

2003-9 National Board of Health: (Better food for patients):
- National Guidelines
- Catalogue of ideas
- Grant for research
- DRG reimbursements
  - www.sst.dk

Accreditation
- 2008 Standards for clinical nutrition
  - www.ikas.dk

**Politicians**

1994 Minister for Health: Working group to review publicly provided meals

1997 National Food agency: Economic implications
- Nutrition higher priority

1999 Gouv’tl OOPS implementation projekt

2001 Council of Europe: Working group concerning European countries (barriers)

2003 Resolution

2005-9 Hearings
- With government (in TV, radio, newspapers)

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Accreditation
- 2008 Standards for clinical nutrition
  - www.ikas.dk
**Implementation**

**Scientific base:**
- DAPEN

**National Guidelines (NBH):**
- Screening tool
- Nutrition plan
- Monitoring

**Databases:**
- National indicator project (www.nip.dk)
- Good medical department (www.dgma.dk)

**Better food for the patients:**
14 projects supported by a grant
Available at www.sst.dk

**Local projects**

**Education**

**PATIENT**
Continuous quality improvement process
Quality evaluation of the nutritional care

Patient involvement

Cooperation between hospitals and primary health care

www.sst.dk
## Results

<table>
<thead>
<tr>
<th>Documentation of variables</th>
<th>Pre-measurement*</th>
<th>Re-measurement*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Weight?</td>
<td>74</td>
<td>81</td>
</tr>
<tr>
<td>Height?</td>
<td>40</td>
<td>74</td>
</tr>
<tr>
<td>BMI?</td>
<td>0</td>
<td>56</td>
</tr>
<tr>
<td>Patients with weight loss &lt; 3 months?</td>
<td>25</td>
<td>53</td>
</tr>
<tr>
<td>Patients with weight loss during hospitalization?</td>
<td>18</td>
<td>52</td>
</tr>
<tr>
<td>Energy intake &lt; 1 week?</td>
<td>31</td>
<td>64</td>
</tr>
<tr>
<td>Energy intake in patients with decreased food intake?</td>
<td>43</td>
<td>69</td>
</tr>
<tr>
<td>Screening?</td>
<td>15</td>
<td>61</td>
</tr>
<tr>
<td>Nutrition plan?</td>
<td>34</td>
<td>86</td>
</tr>
</tbody>
</table>

*Significant differences in all variables p < 0.05

Rasmussen HH Clin Nutr 2006
## Results

### NIP 2007
National Indicator Project  
*(cohort follow up study)*

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of patients N</th>
<th>Screening &lt; 2 days</th>
<th>Screening during hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apoplexia</td>
<td>8683</td>
<td>66 %</td>
<td>92 %</td>
</tr>
<tr>
<td>Femur fracture</td>
<td>6548</td>
<td>49 %</td>
<td>79 %</td>
</tr>
<tr>
<td>Heart</td>
<td>2231</td>
<td>84 %</td>
<td>--</td>
</tr>
<tr>
<td>Total</td>
<td>17462</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[www.NIP.dk](http://www.NIP.dk)
Results

Nutritional structure in Danish hospitals

Holst M Clin Nutr 2009
Audit of approx. 1500 records among 4,500 beds in Copenhagen

Copenhagen audit March 2006

Accreditation 2002 & 2005

- Screening?
- Weekly re-screening?
- If at-risk: nutrition plan?
- If at-risk: >75% req > 75% time?

% of cases

- September 2003
- March 2004
- May 2004
- September 2004
- March 2005
- May 2005
- September 2005
- March 2006
# Results

## A positive change among Danish doctors and nurses

<table>
<thead>
<tr>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person in dept. responsible for nutrition?</td>
</tr>
<tr>
<td>A nutrition plan should always be recorded?</td>
</tr>
<tr>
<td>In my department some patients gets insufficient nutrition with clinical complications?</td>
</tr>
<tr>
<td>In my dept. clinical nutrition has low priority?</td>
</tr>
<tr>
<td>I find it difficult to make a nutrition plan?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1997 (%)</th>
<th>2004 (%)</th>
<th>P - value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person in dept. responsible for nutrition?</td>
<td>20</td>
<td>68</td>
<td>P &lt; 0.0005</td>
</tr>
<tr>
<td>A nutrition plan should always be recorded?</td>
<td>82</td>
<td>92</td>
<td>P &lt; 0.005</td>
</tr>
<tr>
<td>In my department some patients gets insufficient nutrition with clinical complications?</td>
<td>48</td>
<td>22</td>
<td>P &lt; 0.0005</td>
</tr>
<tr>
<td>In my dept. clinical nutrition has low priority?</td>
<td>40</td>
<td>22</td>
<td>P &lt; 0.0005</td>
</tr>
<tr>
<td>I find it difficult to make a nutrition plan?</td>
<td>40</td>
<td>40</td>
<td>Ns</td>
</tr>
</tbody>
</table>

* Lindorff-Larsen K Clin Nutr 2007*
Results
Nutrition Standards and Indicators in the Danish Quality Programme (I)

• **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.

www.ikas.dk
Results
Nutrition Standards and Indicators in the Danish Quality Programme (II)

- **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
Future aspects

- **Stakeholder function** for clinical nutrition in Denmark

- **Action Network on Hospital Nutrition** within the European Region of the WHO.

- Systematic screening and registering of **five life style risk factors** (undernutrition, overweight, physical activity, smoking and alcohol) for all patients with a first contact to the hospital including DRG-coding for re-imbursement.

- Implementation of a **Scandinavian database** in clinical nutrition.

- Improving **food intake**

- **Education** in clinical nutrition for doctors.

- **National guidelines** in primary health-care
This was only possible by team-work including a lot of actors on the scene:

**Dedicated persons:**
Mette Holst, Centre for Nutrition and Bowel Disease, Aalborg University Hospital
Anne Marie Beck, Danish Veterinary and Food Administration
Karin Ladefoged, Dept Internal Medicine, Greenland
Michael Staun, Medical Gastroenterology, Rigshospitalet
Jens Kondrup, Nutrition Unit, Rigshospitalet
Jens Rickardt Andersen, Nutrition Unit, Rigshospitalet
Tatjana Hejgaard, National Board of Health
and many others ............................................

**Organisations:**
Danish Society for Clinical Nutrition and Metabolism (DAPEN)
Danish National Board of Health (NBH)
Danish Veterinary and Food Administration
ESPEN
Different medical specialities

**Medical companies and others:**
Health Care Consulting

**Politicians:**
Local and national

**Medias:**
TV, radio, newspapers
European championship in football 1992