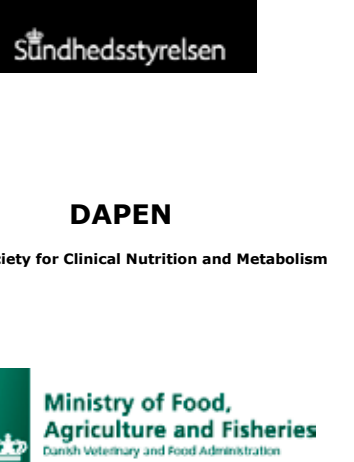


Fighting Malnutrition with a Multi-modal Strategic Approach: The Danish Experience 2007-9

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Rationale and brief description

Disease related malnutrition remains a major health problem and is still under-treated despite the evidence that nutritional treatment improves outcomes, reduces costs for care and improves QOL. From the mid-nineties a joint venture between the 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 national guidelines, the initiative "Better food for patients" and accreditation of all Danish hospitals regarding undernutrition.



Initiatives and activities: focusing the period 2007-9

The activities were based upon three levels (fig 1):

1. Experts (advisory board in DAPEN) identifying problems and formulation of the problem, collecting data and analysis, improving quality and evaluation.
2. Health care including both hospital and NBH making quality databases, guidelines and accreditation. Cooperation and networking between countries as well as educational aspects were important factors.
3. Politicians making recommendations and awareness. An interaction between the three actors continuously took place.

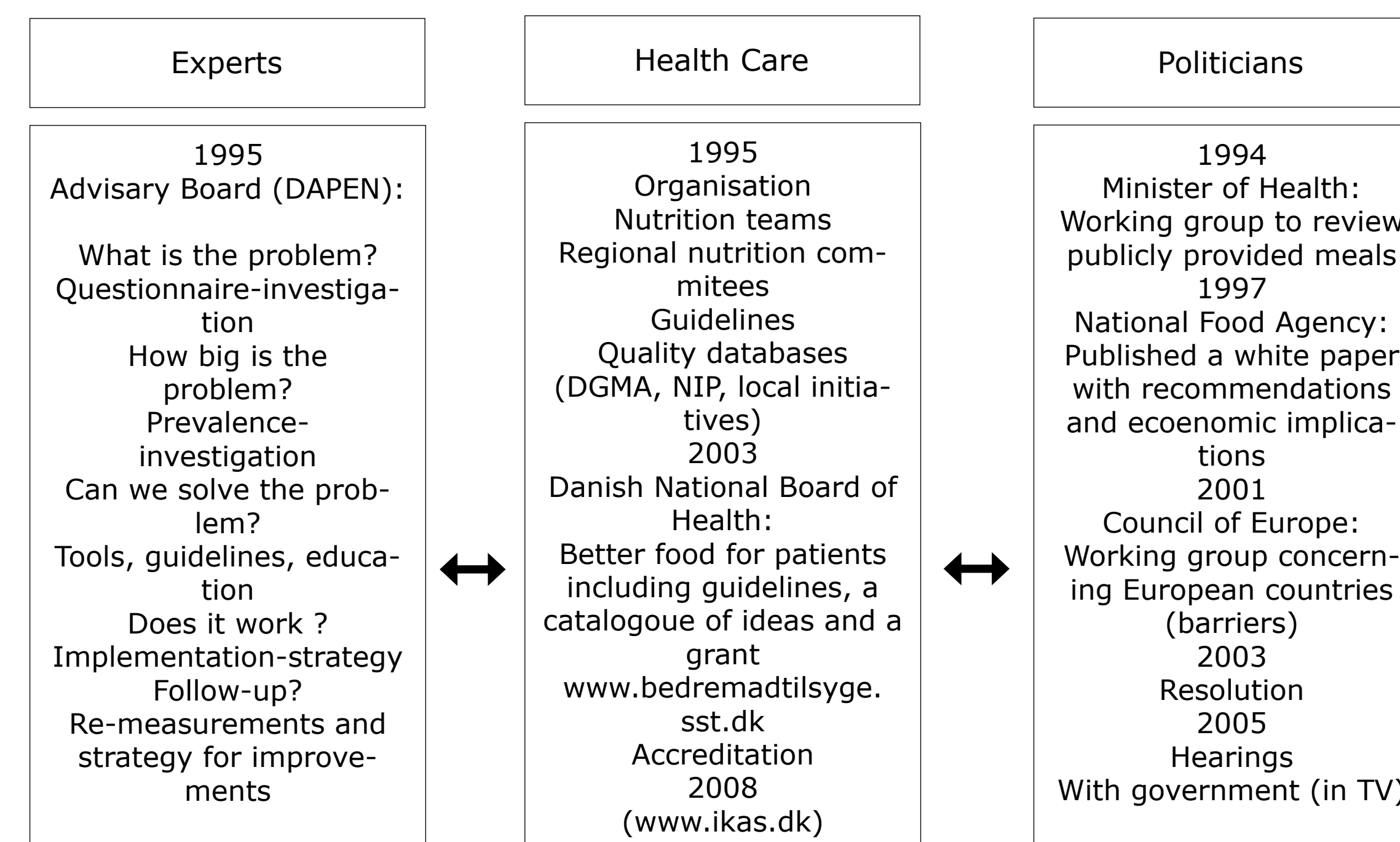


Fig 1. The strategic approach between experts, health care and politicians.

Implementation

The implementation procedure followed the continuous quality improvement process (1). A scientific base provided by DAPEN (advisory board) transferred into a common structure with national guidelines made by the NBA. Guidelines included a screening tool (NRS 2002) and recommendations for making a nutrition plan and monitoring. A basis for implementation was made by the initiative "Better food for patients" published as a report in 2007 (www.sst.dk) and implemented systematically throughout the country along with other specific implementation studies (1,2). Databases were introduced including nutritional parameters, i.e. the National Indicator Project (www.NIP.dk) and the Good Medical Department (www.DGMA.dk). Resources: Work done by DAPEN was voluntarily done by the members of the board and members of DAPEN with additional funding from external sources. External funding from the Danish Government and NBH was given.

Results

Results from the interaction between experts, health care and politicians:

1. Experts: An advisory board (DAPEN) made evidence-based information throughout Denmark during the last 15 years establishing systematic strategic information concerning awareness (3), prevalence of undernutrition (4), making tools (NRS 2002) (5), guidelines and education (6). Furthermore, an implementation strategy (1) and an evaluation (7) were made.
2. Health care: A convincing agreement between the structure for organising nutrition and good clinical practise was found (8). These results have led to a manifest of guidelines and a large growth of formal nutrition teams and competences over the past two years (fig 5). A formal cooperation between the three Scandinavian countries including NBH in each country was established, especially concerning awareness and making a common database. Formal education for nurses and dieticians were made as well at pre- and postgraduate education in clinical nutrition for doctors.

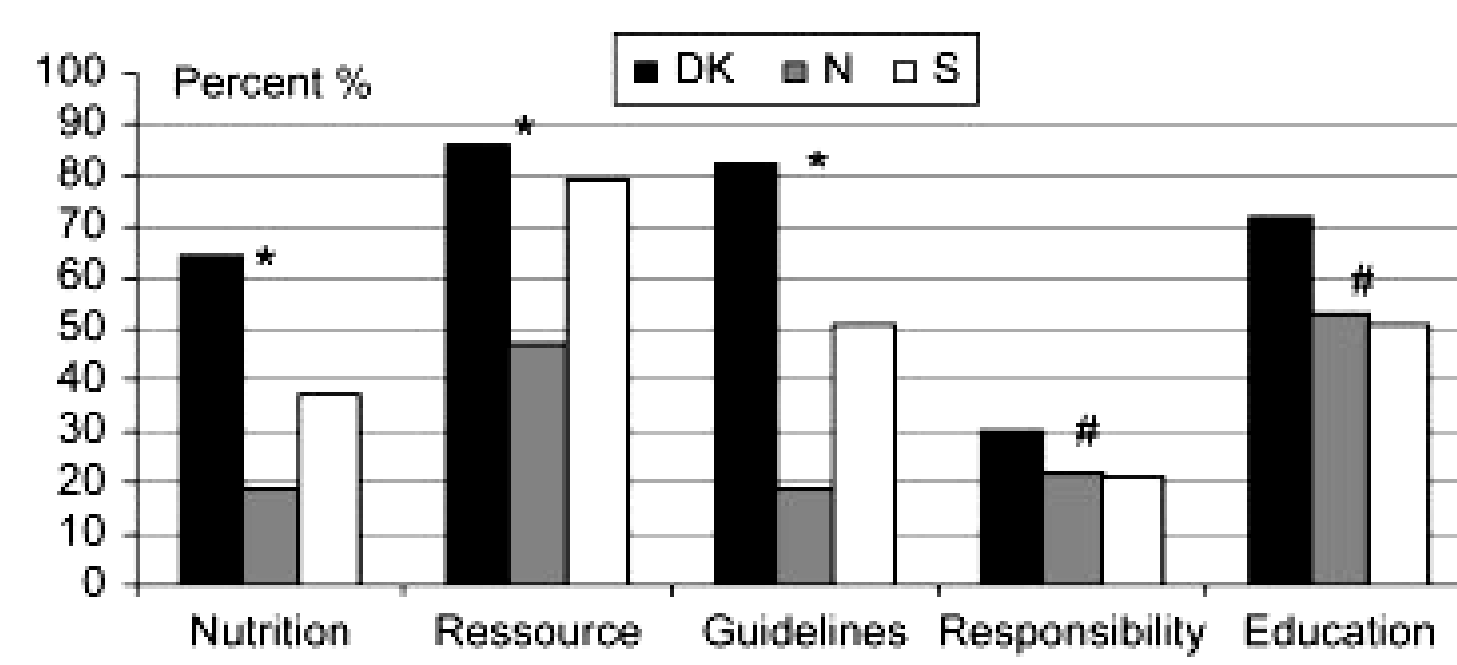


Fig 5. Nutritional structure in Denmark, Norway and Sweden in 2008 (7).

Results from a national database are shown in Fig 4.

NIP 2007 National Indicator Project (cohort follow up study)			
Disease	Number of patients	Screened < 2 days	Screened during hospital
Apoplexia	8683	66 %	92 %
Femur fracture	6548	49 %	79 %
Heart	2231	84 %	--
Total	17462		

Fig 4. NIP database in clinical nutrition 2007.

The initiative "Better food for patients" (www.sst.dk), created:

- National guidelines 2008
- A catalogue of ideas
- Fourteen projects that contributed experience from goal-oriented initiatives regarding patients at nutritional risk (2007).

Accreditation in all Danish hospitals 2009

These efforts ended ultimately up with accreditation within nutrition. The standards in clinical nutrition were made by a multidisciplinary group of 10 persons, and were evidence-based according to the NBH and ESPEN guidelines (Fig 5). IKAS (the Danish accreditation organization) and the Danish Healthcare Quality Programme deliver a web-based IT-system, known as TAK, containing the standards that support and facilitate the process from the time of receipt of standards to final accreditation (www.IKAS.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.

Fig 5. Standards in clinical nutrition for accreditation of all Danish hospitals 2009

3. Politicians: DAPEN has raised awareness by contacting Ministers and government officials using evidence-based information, websites and media campaigns (9). In cooperation with DAPEN, NBA launched national guidelines, projects and initiated accreditation in clinical nutrition in all Danish hospitals. Overall, the management and perception of hospital undernutrition showed a positive change among Danish doctors and nurses (7). However, i.e. knowledge still needs room for improvement (10, 11). Despite a positive attitude to clinical nutrition, nutritional intake also needs improvement (DGMA and 12).

Conclusions including relevance to nutrition policy

The innovative and strategic fight against malnutrition in Denmark has resulted in establishing national guidelines and accreditation in all Danish hospitals concerning nutritional aspects. This was achieved by a multi-modal approach including:

- Cooperation between DAPEN, National Board of Health, Danish Veterinary and Food Administration and politicians as well as industry and local forces.
- Systematic evidence-based approach to the nutritional pathway made by experts in the field.
- Making awareness by including education, tools and contact to medias
- National guidelines made by the Danish National Board of Health
- A basis for an implementation procedure was established.
- Creating national funding for projects in clinical nutrition
- Emphasizing the importance of the structure as a solid ground for the implementation procedure.
- Follow-up studies to insure that the goals were achieved
- Establishing national accreditation within nutrition

This initiative and strategic approach would be of interest on a European level because it is evidence-based and in accordance with the ESPEN guidelines.

Future aspects: The action plan for clinical nutrition in Denmark for the next 1 to 3 years includes the following elements:

- Implementation of nutrition standards and indicators in the Danish Quality Programme (accreditation) 2009.
- Establish a stakeholder function for clinical nutrition in Denmark
- Initial steps has been taken in order to establish an 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-imburement.
- Improvement of the transition in and out of hospital for patients with disease-related malnutrition, including development of national guidelines in primary health-care in collaboration with NBH.
- Implementation of a Scandinavian database in clinical nutrition.
- Concerning the five new regions in Denmark: Making new structures, politics and guidelines in clinical nutrition.
- Improvement of education in clinical nutrition for doctors.

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