Dietitians’ Session
SURVEY OF NUTRITION SUPPLY
The French Experience

Jean-Fabien Zazzo
SURVEY OF NUTRITION SUPPLY
The French Experience

Jean-Fabien Zazzo, MD
CNANES (Health Department)
CLAN AP-HP coordinator
# Hospital beds in France

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
<th>nb per 1000 inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total in France</strong></td>
<td>498,929</td>
<td>8,5</td>
</tr>
<tr>
<td>Public</td>
<td>375,334</td>
<td>6,4</td>
</tr>
<tr>
<td>Private (non profit)</td>
<td>24,782</td>
<td>0,4</td>
</tr>
<tr>
<td>Private (with profit)</td>
<td>98,813</td>
<td>1,7</td>
</tr>
</tbody>
</table>
Survey of nutritional status, food provision and effective food intake

in patients hospitalized in AP-HP hospitals

Zazzo JF, MD, Puissant MC, RCD, Aubert P, MD, Melchior JC, MD

January - March 2002
Study over a 4 days period

884 patients
  - 472 adults (acute care setting)
  - 178 children
  - 234 elderly (long-term facility)

7018 meals evaluated (by 12 dietitians), distributed in heated trolleys to wards
  - 3316 to adults
  - 1115 to elderly
  - 2587 to children

738 full day provisions
  - 394 days (acute care setting)
  - 129 days (paediatrics)
  - 215 days (elderly)
PREVALENCE OF MALNUTRITION

(First day of study)

<table>
<thead>
<tr>
<th></th>
<th>paediatrics</th>
<th>adults</th>
<th>elderly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malnourished</td>
<td>20,2 %</td>
<td>44,6 %</td>
<td>43,0 %</td>
</tr>
</tbody>
</table>

BMI and/or recent weight loss or weight:height chart for children
Mean BMI in adults according to length of hospital stay before survey

See Carol Braunschweig et al. Impact of declines in nutritional status on outcomes in adult patients hospitalized for more than 7 days. J Am Diet Assoc 2000;100:1316-1322
# Hospital supply and estimated calorie needs for adults

(Harris-Benedict × metabolic stress factor)

<table>
<thead>
<tr>
<th>Calorie needs (kcal/j)</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
<th>mediane</th>
</tr>
</thead>
<tbody>
<tr>
<td>adults (456)</td>
<td>1668,0</td>
<td>367,0</td>
<td>976</td>
<td>2828</td>
<td>1629</td>
</tr>
<tr>
<td>surgery (114)</td>
<td>1786,6</td>
<td>328,6</td>
<td>1067</td>
<td>2643</td>
<td>1769</td>
</tr>
<tr>
<td>Gastroenterology (91)</td>
<td>1727,0</td>
<td>400,4</td>
<td>986</td>
<td>2681</td>
<td>1710</td>
</tr>
<tr>
<td>Internal medicine (127)</td>
<td>1544,8</td>
<td>374,6</td>
<td>976</td>
<td>2828</td>
<td>1487</td>
</tr>
<tr>
<td>Pneumology (124)</td>
<td>1642,3</td>
<td>325,8</td>
<td>1103</td>
<td>2618</td>
<td>1572</td>
</tr>
</tbody>
</table>

**MEAN DAILY SUPPLY** 1758 kcal

Some patients need less, some patients need more
## Daily provisions according to patients’ needs

Energy needs: HB equation x metabolic stress factor (1.0 to 1.3)
Protein needs: 1,2 g/kg actual body weight

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage of patients with ENERGY provisions inferior to their needs</th>
<th>Percentage of patients with PROTEIN provisions inferior to their needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>paediatrics</td>
<td>12.5 %</td>
<td>9.4 %</td>
</tr>
<tr>
<td>adults</td>
<td>26.9 %</td>
<td>45.0 %</td>
</tr>
<tr>
<td>Elderly patients</td>
<td>1.5 %</td>
<td>25.9 %</td>
</tr>
</tbody>
</table>
• nutrition supply, in hospitals, is similar to that of other European countries
• this supply provides about 2000 kcal/day
• mean protein content is 60 g/day
• hospital catering is in charge of supplying a standardised meal….
• except for patients receiving a modified diet (medical dietetic order)
• meals are not tailored (according to metabolic stress, disease, nutritional status,…)
• nutrition needs for individuals with illness are not established
• they are mostly increased and not balanced by an equal provision
The meal-portion method was designed to estimate calorie and protein consumption from the portion of the food items actually eaten by the patient, which is evaluated at the time plates and dishes are cleared away.

Dietitians quoted in one-quarter-portion meals

The calorie and protein contents of the meals and intake by patients were calculated from the food composition tables.
## Daily intake: results

<table>
<thead>
<tr>
<th>Group</th>
<th>Percentage of patients who consumed less than their <strong>CALORIE</strong> needs</th>
<th>Percentage of patients who consumed less than their <strong>PROTEIN</strong> needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>paediatrics</td>
<td>37.5%</td>
<td>21.9%</td>
</tr>
<tr>
<td>adults</td>
<td>73.1%</td>
<td>85.0%</td>
</tr>
<tr>
<td>elderly patients</td>
<td>19.1%</td>
<td>66.3%</td>
</tr>
</tbody>
</table>
### Reasons for insufficient food intake

#### Medical reasons

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>paediatric</td>
<td>32.1%</td>
</tr>
<tr>
<td>adults</td>
<td>36.3%</td>
</tr>
<tr>
<td>geriatry</td>
<td>30.8%</td>
</tr>
</tbody>
</table>

#### Logistic reasons

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>paediatric</td>
<td>53.6%</td>
</tr>
<tr>
<td>adults</td>
<td>42.0%</td>
</tr>
<tr>
<td>geriatry</td>
<td>42.5%</td>
</tr>
</tbody>
</table>

#### Other reasons

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>paediatric</td>
<td>14.3%</td>
</tr>
<tr>
<td>adults</td>
<td>21.7%</td>
</tr>
<tr>
<td>geriatry</td>
<td>26.7%</td>
</tr>
</tbody>
</table>
Percentage of tray provided not consumed, partially consumed or totally consumed

- 1.7% meal not consumed
- 68.4% meal partially consumed
- 30% meal consumed

Total surgery gastroenterology internal medicine pneumology
Main causes for partial food intake

- anorexia
- food is not suitable
- problems with comprehension
- other causes pts related
- inadequate eating ustensils
- eating ustensils not available
- help with eating not done
- offer is too much
- quality or presentation is poor
- too big volume
- other personal causes

Percentage of 3316 meals evaluated in adults
Daily deficit for energy and protein

Adults

Energy: 687 ± 502 kcal

Protein: 37 ± 27 g
PROJECTS in FRANCE

• a national response
• a professional response
Programme for Action in Nutrition in France 2001-2005

Nutrition disorders in hospitals: prevent, detect and treat

AIMS

• at least, one dietetic consultation in each hospital
• a simple technic for diagnosis of nutritional status
• guidelines for clinical practice
• teaching nutrition in medical and nurse schools
• improving diffusion of updated nutritional data and scientific advances through a network programme
• improving management of feeding and clinical nutrition in hospitals
A decree was published on March 2002 specifying how to improve quality of nutrition care in French hospitals.

CLAN: Comité de Liaison Alimentation Nutrition

A national response

* in GB Nutrition Steering Committee
A governmental order was published to create a national committee (29th of March 2002)

- recommend a national programme of education for all professionals
- offer simple tools to detect malnutrition
- specify nutritional requirements for sick patients (AFSSA working group)
- audit nutritional care (annual questionnaire)
- measure patient satisfaction

CNANES
Comité National Alimentation Nutrition des Établissements de Santé
Improve number and qualification of dietitians in France

4000 dietitians (70% in hospitals)
- 1/117 beds (from 1/800 to 1/38 beds)
- small hospitals (less than 400 beds): no DTT

Training
- "Brevet de technicien Supérieur" (50 weeks)
- "Diplôme Universitaire de Technologie" (2 years)
• nutrition as an important part of overall management
• nutritional screening at admission in the ward
• nutritional care plan in undernourished patients or to be at risk
• monitoring during hospital stay
• notify, in the medical chart, nutritional care plan

Probably the most difficult!
New guidelines for nutrition supply are offered........

- menus do not always take the needs into account
  (to calculate at admission, within 48 hours, needs in energy and protein according to nutritional status and stress factors - notified in the medical chart)
- provide fortified and/or modified-consistency meals
  and/or between-meal snacks (undernourished, elderly, patients with disability etc...)
- provide appropriate food choices
- improve general appearance and presentation
Is this policy successful?

- Number of CLAN improves in French hospitals
- All hospitals (97%) have quality control mechanisms in place
- Patient satisfaction is monitored
- A national training programme will be “on line” on December 2005 (Health Department web site)
- Clinical tools for malnutrition identification are available
- Detection of malnutrition and nutritional requirements are now included in Hospital Accreditation Schemes (since January 2005)
Comité Liaison Alimentation Nutrition (CLAN)

National survey 2004

CNANES
Health Department
Percentage of CLAN in French regions
(number of hospitals with a CLAN/number of hospitals in the area) × 100
a CLAN is more likely to be found when...

- catering is public or private without profit
- the number of meal prepared is important
- the number of dietitian is high
- hospital authorities favour a nutritional care policy
- there is a programme of education and training for the whole staff
- there is a nutrition team including a dietitian, a senior clinician with a special interest in nutrition and a senior nurse
Is this policy successful?

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Hospital malnutrition is too often a lack of food (provision and/or intake) and induces diseases, unacceptable length of stay and costs.
The cost of waste was based on an estimated cost of food materials only (excluding labour and overheads)

Breakfast: 0.782 euros
Lunch: 1,668 euros
Dinner: 1,608 euros

For 100 euros invested, 40 euros are wasted.
Key-words

- food provision
- food intake
- malnutrition
- calorie needs
- CLAN
- CNANES
- hospital accreditation
- food wastage
Some references

- Report by a working party of the BAPEN. Hospital food as treatment. Allison SP editor, May 1999
- Braunschweig C et al. Impact of declines in nutritional status on outcomes in adult Patients hospitalized for more than 7 days. J Am Diet Assoc 2000;100:1316-1322