Health Economics and nutrition.

Cost of undernutrition and its solution

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Dr Jan Van Emelen (MLOZ, B)
- Introduction
- Health economy
- Undernutrition
- Finding solutions in the healthcare system
- MLOZ experiences
Introduction : AIM : international association

An international association for universal principles
AIM
Association Internationale de la Mutualité
**AIM**
Association Internationale de la Mutualité

**Membership**
57 national federations
32 countries worldwide
Europe, Middle-East, Africa, Latin-America

**Activities**
Healthcare financing
Healthcare provision
Social services, pensions
For 240 mln citizens

**Values and principles**
Health and well-being
Autonomous management
Not-for-profit orientation
Solidarity

**Objectives**
Interest representation
Knowledge exchange
Lobbying
Promotion
The New Role of Healthcare Mutuals

AIM
Association Internationale de la Mutualité

The New Role of Healthcare Mutuals

Steering capacity

Direction of care

Engagement in healthcare management
Decentralize towards personal health

Quality of Life

Cost of Care / Day

Source: Freely adapted from Intel (2007)
Reimbursement

Criteria of choice:

• the quality of care
  – safety/risk management (risk of malpractice)
  – collaborative health care processes
  – improved time/healthcare
• the access to care
• the economic efficiency of care.
1. Health Economics

Cost/efficiency – expressed by DALY, HALE

Nutrition has a triple impact

- **Driver for healthcare costs**
  - Obesity and overweight
  - Malnutrition: Undernutrition in elderly persons
- **Driver for disability cost**
Driver for economic growth

Professor Robert Fogel- The Changing Body

300 years recent history studied relationship between parameters of nutrition– health and reproduction – demography - economic growth

Longevity in good health = consumer
Driver for health care costs

- Overweight - Obesity: consequences for diabetes (USA maps), coronary HD, mobility disorders, cancer, stroke, hypertension, ...
- Undernutrition: Some Regions of the world and the elderly people in Western world.
Driver for disability

Overweight, obesity and undernutrition are responsible for disability: work, sports, social,

Impact:?
2. Undernutrition

- Undernutrition is a **state of nutrition** in which a **deficiency** of energy, protein and other nutrients causes adverse effects on tissue or body form (body shape, size and composition), function or clinical outcome.

(prof. Rebecca Stratton RJ et al. 2003)

- Undernutrition is a **condition** for which a **management approach** in care is meaningful: prevention, early detection, early treatment, palliative treatment
Pathophysiology

In case of protein-energy undernutrition:

• Phase 1: use of the fat stores, easy recovery
• Phase 2: cachexia, with acute phase response, acute protein and muscular degeneration: great risk of no recovery, once installed.
Why frequent?

- Normal intake
  - Man 1600 Kcal
  - Female 1200 Kcal
- Older persons: >15% consumes < 1000 Kcal
Prevalence of undernutrition

• Many studies concludes that 15-25% of older persons living at home
• In Hospitals between 25 and 45%
• In Nursing Homes - The Netherlands: 18-28%, 17-65% : Stanga Z et al. 2004
Were do we find the malnourished?

(Elia 2009)

At any given point in time, > 3 million people in the UK are malnourished or at risk of malnutrition. Most are in the community. **This transforms to > 33 million people in Europe...**

Olle Ljungqvist MD PhD - Chairman ESPEN
The empty fridge
Impact

Medical impact
• Higher vulnerability to illness
• Impaired wound healing
• More infections
• Increased mortality
• Reduced effectiveness of drugs
• Increase in falls (Sarcopenia: often irreversible!)
• Inactivity, bedridden situations, pressure sores and tromboembolims
• Depression
• Confusion with slower recovery
• Etc (NICE, 2005)
Economic impact

- Hospitals: Nutrition Day Survey
- Care Homes: LPZ survey Netherlands
- Community: THIN (The health Improvement Network database) in UK (Guest JF et al Clin Nutr 2011, Mar 13)
## Hospitals

<table>
<thead>
<tr>
<th>BMI&lt;20 any wt loss</th>
<th>Total number identified malnourished from Nutritional day sample</th>
<th>Increased length of stay (days)</th>
<th>Cost per person for extended stay (€)</th>
<th>Total cost for malnourished group (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.666</td>
<td>6</td>
<td>1.015,32</td>
<td>2.706.843</td>
<td></td>
</tr>
<tr>
<td>BMI&lt;20, &gt;5% wt loss</td>
<td>2.079</td>
<td>5,2</td>
<td>879,94</td>
<td>1.829.395</td>
</tr>
<tr>
<td>BMI&lt;20, &gt;10% wt loss</td>
<td>1.316</td>
<td>7,4</td>
<td>1.218,38</td>
<td>1.603.388</td>
</tr>
</tbody>
</table>
Nursing Homes

- **Chart:**
  - **Title:** Cost of preventing and treating malnutrition per resident per year (Euros)
  - **Y-axis:** Cost (in Euros) ranging from 0 to 12,000
  - **X-axis:** Risk of Malnutrition
  - **Legend:**
    - General Nursing Home Population
    - Identified at risk of Malnutrition
    - Identified Malnourished
## UK: THIN (The health Improvement Network database) in UK

<table>
<thead>
<tr>
<th>Type of resource use (6mths)</th>
<th>malnourished</th>
<th>Non-malnourished</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP practice visit</td>
<td>18.90</td>
<td>9.12</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>% admitted to hospital</td>
<td>13%</td>
<td>5%</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Hospital admissions</td>
<td>0.24</td>
<td>0.12</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Drug prescriptions</td>
<td>29.26</td>
<td>19.06</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Clinical nutrition prescriptions</td>
<td>42.49</td>
<td>0.89</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Laboratory tests</td>
<td>2.65</td>
<td>1.21</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
## UK

<table>
<thead>
<tr>
<th>Type of resource use (6mths)</th>
<th>Incremental cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP practice visit</td>
<td>£ 339,44</td>
</tr>
<tr>
<td>Hospital admissions</td>
<td>£ 192,46</td>
</tr>
<tr>
<td>Drug prescriptions</td>
<td>£ 78,02</td>
</tr>
<tr>
<td>Clinical nutrition prescriptions</td>
<td>£ 146,03</td>
</tr>
<tr>
<td>Laboratory tests</td>
<td>£ 18,35</td>
</tr>
<tr>
<td>Medical devices</td>
<td>£ 116,61</td>
</tr>
<tr>
<td>Other resource use</td>
<td>£ 81,26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£ 1,003,01</strong></td>
</tr>
</tbody>
</table>
## UK

<table>
<thead>
<tr>
<th>Incidence of malnutrition</th>
<th>Total NHS cost, Billion £</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.02</td>
<td>1.23</td>
</tr>
<tr>
<td>0.04</td>
<td>2.46</td>
</tr>
<tr>
<td>0.06</td>
<td>3.69</td>
</tr>
<tr>
<td>0.08</td>
<td>4.93</td>
</tr>
<tr>
<td>0.10</td>
<td>6.16</td>
</tr>
</tbody>
</table>
New health economic evidence (Elia & Stratton 2009)

New UK costs of malnutrition exceed £13 billion (€15.5 billion)*

- Social care (children, family) (£0.472 billion)
- Other social care (adults) (£1.184 billion)
- Residential care (adults) (£1.246 billion)
- Home care (adults) (£0.62 billion)
- Nursing care (adults) (£0.655 billion)
- Primary care (£2 billion)
- Hospital outpatients (£0.5189 billion)
- Hospital inpatients (£5.489 billion)

*Transformed to Europe €171 billion
The healthcare cost of managing malnourished patients was more than twice that of managing non-malnourished patients, due to increased use of healthcare resources.

After adjusting for age and comorbidity, malnutrition remained an independent predictor of mortality.

Reducing the incidence of malnutrition with preventative strategies has the potential to decrease the burden it imposes on patients and the UK’s National Health Service and release healthcare resources for alternative use within the system.

*Health economic impact of managing patients following a community-based diagnosis of malnutrition in the UK. J. Guest et alii.*
Conclusion undernutrition

- High impact
- Multidisciplinary approach needed for screening, identification, early treatment,
- Fits the actual service model? Rewarding model?
- Priority?
3. Not only undernutrition is a problem

1. Chronic conditions leading cause of mortality and not well « managed»
2. Long Term care
3. Labor shortage
4. Budget restrictions
5. Quality and safety
6. More homecare instead of hospitalisation
7. Lack of coordination
8. IT is a catastrophe

Innovation is a duty: patient approach
Health care system

Functions

Governance

HR Management

Financing system

Service delivery

Services

Accessibility

Quality of Care

Financial contribution
Health care system

Fig. 4. Functions of health systems

Stewardship concerns financing, provision and resource generation. Resource generation concerns financing, provision and stewardship.
Problem allocation in HC system

- Political, data management, corporate governance
- Training
- Budget (macro), Financial model
- Governance
- HR Management
- Financing system
- Service delivery

Care model
- Acute
- Chronic
What to do?

• Governance :
  – Create political integration of prevention, cure, care,
  – Create cultural willingness to change (nutrition is a priority)
  – Set up data management system
  – Evolve towards Corporate governance
  – Innovative public health initiative for elderly people
  – Validation (at EU level) of programs for Risk management, Disease management, case management
What to do

• Services
  – Risk management, disease management case management
  – Chronic care model for each pathology and complex conditions
    • Standards of care
    • Services:
      – Detection, stratification, enrolment,
      – Medical management plan and follow-up
      – Patient empowerment
      – IT support
      – Assessment: medical, economic, patient satisfaction
What to do

• Human Ressources
  – Changing function discussion national and EU
  – Training

• Financial model
  – Macro: new budget allocation for chronic diseases (risk management, DM, Case management)
  – Microlevel: new rewarding system for health care provider, for patient and for insurance
  – Incentives for innovation
Public health initiative for elderly people

• Healthy ageing is a challenge for Europe. By 2025 about one-third of Europe’s population will be aged 60 years and over and there will be a particularly increase in the number of people aged 80 years and older. The countries of Europe must develop strategies to meet this challenge. Promoting good health and active societal participation among the older citizens will be crucial in these strategies.\[1\]

Joint action

- **Coordination** of partners’ actions to build capacity and to make it possible to voice and to influence;
- Raising **awareness** among policy and decision makers, especially the upcoming EU Presidencies. The goal of this action is to put public health and older persons on top of the agenda. Via EU Presidencies, EC and EP are to be convinced about the need for an EU framework;
- Design **health and chronic disease management** systems and tools with a focus on older persons, or to make sure older persons’ interests are incorporated in H&DM systems and tools;
- **Promotion of health literacy** among older persons and to help them to be independent and heard in EU debates and discussions about health care.
4. MLOZ experiences

Platforms for chronic diseases in the complementary insurance, launched in 2005: diabetes – obesity

Lessons:

• HIF is not the place for medical follow-up!
• Healthcare providers were not sufficiently included
Consortium Goals

1. Build a Disease Management System and integrate the existing applications/ initiatives into the system (focus on the selected pathologies)

2. Facilitate political lobbying for the implementation of this solution (financing/ legal framework/ adoption by professionals and patients)

3. Create Disease Management Company to bring Solutions to the market
Launch DM

- MLOZ:
  - Strategic planning at direction level ongoing
  - Research coaching starting including medical, legal, financial, economic results
  - Personal health record – ready in study
  - Partnership with health care providers, industry and insurers.

- AIM:
  - Working group Disease Management
  - Proposition EIP for chronic diseases.
Hurdles and success factors

• Hurdles
  – Political integration
  – Endorsing the concept by “Insurance Committee”
  – Financial environment – incentives for all
  – Implementation roadmap for concrete services

• Success factors
  – Driver
  – Critical mass
  – Support by RIZIV
  – International support
l’Union Nationale des Mutualités Libres regroupe :
de Landsbond van de Onafhankelijke Ziekenfondsen groepeert: