International experience with chronic disease management: implications for East Asia

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...serving the health and well-being needs of people 50 and older.
Agenda

- Defining chronic disease
- Scale of chronic disease
- Defining chronic disease management
- Evidence on disease management
- US experience
- UK experience
- Global experience
- Implications for East Asia
What do we mean by chronic disease?

- WHO defines chronic disease as cardiovascular disease, diabetes, chronic respiratory disease, and certain cancers.

- All of these have in common that they are caused predominantly by smoking, poor diet, and physical inactivity.

- But there are also neurological, rheumatological, and other chronic conditions, even including cancer and AIDS.
Did you know?

35 000 000 people died from chronic diseases in 2005.

60% of all deaths are due to chronic diseases.
Chronic diseases:
- Heart disease: 30.2%
- Cancer: 15.7%
- Diabetes: 1.9%
- Other chronic diseases: 15.7%

Infectious diseases:
- HIV/AIDS: 4.9%
- Tuberculosis: 2.4%
- Malaria: 1.5%
- Other Infectious Diseases: 20.9%
- Injuries: 9.3%

Global Causes of Death (2006)

The total number of people dying from chronic diseases is double that of all infectious diseases including HIV/AIDS, tuberculosis and malaria (Nature, 2007).

Source: The Economist, August 11, 2007; WHO
Risks are increasing

Projected prevalence of overweight (BMI$^*$ $\geq$ 25 kg/m$^2$), women aged 30 and above, 2005

Projected prevalence of overweight (BMI$^*$ $\geq$ 25 kg/m$^2$), women aged 30 and above, 2015
Shifting Patterns of Global Health

Deaths, % of Total, 2005

Countries by Income

Low

Lower-middle

Upper-middle

High

Total Deaths, M

13.7

12.3

2.5

13.2

0.5

2.7

0.5

7.1

Forecast Deaths, 2006-2015, % Change

Infectious diseases

Chronic diseases

Source: The Economist, August 11, 2007; WHO
Age-adjusted* death rates for total cardiovascular disease, diseases of the heart, coronary heart disease, and stroke
United States, 1900-1996

*Per 100,000 population, standardized to the 1940 U.S. population.

Patients with five or more chronic conditions account for two thirds of Medicare spending.

Percent of Medicare Spending per Person by Number of Chronic Conditions
(Average Annual Expenditure)

- 0 Chronic Conditions: 1% ($160)
- 1 Chronic Condition: 3% ($980)
- 2 Chronic Conditions: 7% ($1,760)
- 3 Chronic Conditions: 10% ($2,940)
- 4 Chronic Conditions: 13% ($4,750)
- 5+ Chronic Conditions: 66% ($13,730)


From “Chronic Conditions: Making the Case for Ongoing Care”, Johns Hopkins University for the Robert Wood Johnson Foundation, December 2002
Multiple chronic conditions lead to an increase in unnecessary admissions to hospital

Source: U.S. 2001 Medicare Standard Analytic File
But healthcare systems are poorly suited to patients with long term conditions

“We're practising 19th century medicine in the 21st century…we still have a system built around individual care events, like office visits and hospital admissions. The epidemiology is out of synch with the system.”

Dr Bob Kane
Problems with the current system

- Many treatments do not follow the best evidence (“rule of halves”)
- Care is rushed and too dependent on patients initiating it at time of ‘crisis’
- Clinicians have little time devoted to assessing function, advising on self care and behavioural change, or addressing functional, social, and psychological needs
- Care is fragmented with poor coordination across providers
What is disease management?

“A system of coordinated healthcare interventions and communications to help patents address chronic conditions and other health conditions.”

RAND, 2007
Chronic disease management

Intensity of the Intervention

High intensity (e.g., home visit)

Moderate intensity (e.g., personalized telephone calls)

Low intensity (e.g., prerecorded telephone messages)

Target Population

Healthy At-risk Manifest chronic condition Severely ill
# Evidence on the effectiveness of chronic disease management

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<th>Health-related</th>
<th>Disease Control</th>
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<th>Healthcare Utilization</th>
<th>Financial Outcomes</th>
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<td>Changes in Utilization of Services</td>
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<td>Satisfaction, Quality of Life, Etc</td>
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<td>CHF</td>
<td>Improved</td>
<td>Inconclusive evidence</td>
<td>Improved</td>
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<td>Reduced hospital admission rates</td>
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<tr>
<td>Diabetes</td>
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<td>COPD</td>
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<td>Depression</td>
<td>Improved</td>
<td>N/A</td>
<td>Improved</td>
<td>Inconclusive evidence</td>
<td>Increased utilization</td>
<td>Increased cost</td>
<td>Improved</td>
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Return on investment for disease management programmes

ROI will vary based on the nature of the disease & the age of the population
Evidence on chronic disease management: general conclusions

- Limited amount of high quality of evidence (and very important to remember that absence of evidence is not evidence of absence of effect)
- Improves processes of care
- Patients and carers like it
- Lack of evidence on improved outcomes
- Little evidence of better utilisation—except for reduced hospital admissions among patients with congestive heart failure
- Does not seem to reduce costs when everything factored in, including costs of the programme
Evercare

- Evercare, developed by the UnitedHealth Group, is one example of chronic disease management
- Developed initially by two nurses working in nursing homes in Minnesota
- Has become a sizeable business operating in many states and helps not only patients in nursing homes but people at all levels through from healthy to end of life care
- Biggest “return” comes from those with multiple conditions
Evercare “case management” of the elderly: the bare bones

- Patients at high risk of needing care, including unplanned hospital admission, are identified, preferably through use of data in risk stratification
- They are assigned a highly trained, generalist case manager to care for them and coordinate their care from others
- Case managers care for about 50 to 80 patients
  - Visit them regularly
  - Provide clinical care
  - Coordinate care
  - Coach in self care
  - Champion their cause
  - Communicate, communicate, communicate
- The programme needs many elements: builds on existing systems, doesn’t replace them; execution is key
- Data driven
- Rigorous monitoring
Evaluation of Evercare for US government

- Evercare patients were compared with two control groups
  1) patients in the same nursing home who were not in the programme
  2) patients in homes without Evercare nurse practitioners

- The Evercare patients showed statistically significant differences (p<.0001) compared to both control groups in the following areas:
  - Hospital admissions per 100 patients lower by 48-49%, but patients needed more intensive bed days in nursing homes
  - Hospital days lower by 57% (same for both controls)
  - Emergency room visits per 100 patients lower by 48-55%
  - Number of persons with A&E visit lower by 46-53%

- No adverse effects on quality

The Effect of Evercare on Hospital Use JAGS, Oct. 2003
Evercare in England

- An experiment from 2002 to 2004
- UHG trained NHS staff and managed the process
- NHS deemed the experiment a success and introduced a scheme based on Evercare across the NHS
Results in relation to aims

1. To improve the health care and satisfaction of frail, elderly patients with long term condition and their carers
   - Strong evidence that this happened

2. To change health services so patients receive better care
   - Some evidence

3. To increase the amount and coordination of primary care received by these patients and reduce inappropriate emergency admissions to hospital
   - More primary care, GP consultations same but more valuable, home visits down, hospital admissions unclear, length of stay down

4. To develop the skills of nurses working with these patients and to improve their professional satisfaction
   - Good evidence
What we learnt

1. It is possible to adapt chronic disease systems developed in one health system to another—but it is adaption not just importation.
2. Aim for patient/carer as the source of control.
3. Take an individualised, whole-person approach to function, independence, comfort, quality of life.
4. Predict and proactively manage, not just diagnose and reactively treat.
5. Make decisions based on data.
6. Provide care in least invasive manner, in least intensive setting.
7. Focus first on multiple chronic conditions rather than individual diseases.
8. Primary care the organising platform for care coordination.
9. Hands on clinical care, not just telephone-based support.
10. Execution is key, and it requires considerable expertise.
11. It takes time.
Benefit may depend crucially on the completeness of implementation
There begins to be international cooperation on disease management
So far little evidence gathered from Asia
Experiments with chronic disease management in developing countries

- UnitedHealth is creating, funding, and partnering with centres in the developing world to counter chronic disease
- Centres in Beijing, Bangladesh, India, Pakistan, South Africa, Tunisia, US Mexico Border, and Central America
- All partnered with developed world institutions (Harvard, Johns Hopkins, Emory, RAND, etc)
- Main emphasis is on prevention, but some will experiment with chronic disease management
Implications for Asia

- Chronic disease will increase for the foreseeable future
- Health systems are built to manage acute conditions
- They particularly fail those with multiple conditions, the patients who have the most problems and generate the most costs
- Prevention is important but not enough
- Managing patients with multiple chronic conditions becomes the main business of health systems
- Health systems must find ways to adapt, and systems of chronic disease management can be helpful
- There are many systems of chronic disease management, but we lack evidence and need more innovation
- They cannot be simply imported from other health systems but can be adapted
- Creating effective chronic disease management systems in developing countries is an important challenge