8th Annual Disease Management Colloquium
Hyatt Regency, Philadelphia, PA
May 19-21, 2008

The International Disease Management Market

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International Disease Management Alliance
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An aging global population
Economic progress bringing unhealthy diet and lifestyles
Not restricted to developed countries
Impact potentially even greater in developing countries
Smaller population of younger workers to fund the cost of care
Essentially... We Have A **Dual** World Crisis of Chronic Disease and Obesity

**Aging/Chronic Disease**

**Obesity/Metabolic Syndrome**
Bi-Modal Healthcare Crisis

INNOVATION

18-50 Age Group

Next Generation

Obesity
Prevention & DM

50-90 Age Group

Boomers
Chronic Disease
Disease Management & Prevention

Life Expectancy
US Healthcare Spending Will Double in this Decade

- 16% of Gross National Product
- Chronic conditions attribute to 60-70% of US healthcare Costs
- ½ of Americans suffer from at least one chronic disease
- 60 Million Americans suffer from multiple chronic diseases
- US population over 60 will increase from 40 to 70 million in next decade

Source: HCFA Office of the Actuary, National Health Statistics Group, as tabulated in Health Affairs, March/April 2001
Number of people age 65 and over, by age group, selected years 1900–2006 and projected 2010–2050

Note: Data for 2010–2050 are projections of the population.
Reference population: These data refer to the resident population.
Indicator 16 – Chronic Health Conditions

Percentage of people age 65 and over who reported having selected chronic conditions, by sex, 2005–2006

Note: Data are based on a 2-year average from 2005–2006.
Reference population: These data refer to the civilian noninstitutionalized population.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey.
Indicator 28 – Use of Time

Percentage of total leisure time that people age 55 and over spent doing selected leisure activities on an average day, by age group, 2006

<table>
<thead>
<tr>
<th>Activity</th>
<th>55–64</th>
<th>65–74</th>
<th>75 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watching TV</td>
<td>53</td>
<td>55</td>
<td>54</td>
</tr>
<tr>
<td>Socializing and communicating</td>
<td>13</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Reading</td>
<td>10</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Relaxing and thinking</td>
<td>7</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Participation in sports, exercise, and recreation</td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Other leisure activities (including related travel)</td>
<td>13</td>
<td>12</td>
<td>10</td>
</tr>
</tbody>
</table>

Reference population: These data refer to the civilian noninstitutionalized population.
Indicator 25 – Obesity

Percentage of people age 65 and over who are obese, by sex and age group, selected years 1988–2006

Reference population: These data refer to the civilian noninstitutionalized population.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey.
Treatment patterns vary dramatically from region to region

**Herniated Disk:**
In Santa Barbara, CA, a patient is 6 times more likely to have surgery than in Bronx, NY

**Congestive Heart Failure:**
In Gulfport, MS, a patient is 4 times more likely to be hospitalized for CHF than in Salt Lake City, UT

**The key question:** What is the “right” rate?
Worker: Retiree Ratios

<table>
<thead>
<tr>
<th>Year</th>
<th>Ratio of Worker:Retirees</th>
<th>Average Life Expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935</td>
<td>25:1</td>
<td>61 Years</td>
</tr>
<tr>
<td>1950</td>
<td>16:1</td>
<td>68 Years</td>
</tr>
<tr>
<td>2000</td>
<td>3.3:1</td>
<td>76 Years</td>
</tr>
<tr>
<td>2025-2030</td>
<td>&lt; 2:1</td>
<td>&gt; 78 Years</td>
</tr>
</tbody>
</table>

We are **not** doing a good job!

- People with chronic conditions only receive 56.1% of recommended care*
- Only 24% of people with diabetes received three or more HbA1c tests in a two year period
- Only 45% of people presenting with an MI received beta-blockers

<table>
<thead>
<tr>
<th>Condition</th>
<th>% Not Receiving Recommended Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>54.6%</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>51.4%</td>
</tr>
<tr>
<td>Asthma</td>
<td>46.5%</td>
</tr>
<tr>
<td>COPD</td>
<td>42%</td>
</tr>
<tr>
<td>CHF</td>
<td>36.1%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>35.3%</td>
</tr>
<tr>
<td>CAD</td>
<td>32%</td>
</tr>
</tbody>
</table>

## Commonwealth Fund – Country Ratings

### Figure ES-1. Overall Ranking

<table>
<thead>
<tr>
<th>Country Rankings</th>
<th>Australia</th>
<th>Canada</th>
<th>Germany</th>
<th>New Zealand</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00–2.66</td>
<td>3.5</td>
<td>5</td>
<td>2</td>
<td>3.5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2.67–4.33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.34–6.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Overall Ranking (2007)

<table>
<thead>
<tr>
<th></th>
<th>Australia</th>
<th>Canada</th>
<th>Germany</th>
<th>New Zealand</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Care</td>
<td>4</td>
<td>6</td>
<td>2.5</td>
<td>2.5</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Right Care</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Safe Care</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Coordinated Care</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Patient-Centered Care</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Access

<table>
<thead>
<tr>
<th></th>
<th>Australia</th>
<th>Canada</th>
<th>Germany</th>
<th>New Zealand</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

#### Efficiency

<table>
<thead>
<tr>
<th></th>
<th>Australia</th>
<th>Canada</th>
<th>Germany</th>
<th>New Zealand</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

#### Equity

<table>
<thead>
<tr>
<th></th>
<th>Australia</th>
<th>Canada</th>
<th>Germany</th>
<th>New Zealand</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

#### Healthy Lives

<table>
<thead>
<tr>
<th></th>
<th>Australia</th>
<th>Canada</th>
<th>Germany</th>
<th>New Zealand</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>2</td>
<td>4.5</td>
<td>4.5</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

#### Health Expenditures per Capita, 2004

<table>
<thead>
<tr>
<th></th>
<th>Australia</th>
<th>Canada</th>
<th>Germany</th>
<th>New Zealand</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>$2,876*</td>
<td>$3,165</td>
<td>$3,005*</td>
<td>$2,083</td>
<td>$2,546</td>
<td></td>
<td>$6,102</td>
</tr>
</tbody>
</table>

*2003 data

Source: Calculated by The Commonwealth Fund based on the Commonwealth Fund 2004 International Health Policy Survey, the Commonwealth Fund 2005 International Health Policy Survey of Sicker Adults, the 2006 Commonwealth Fund International Health Policy Survey of Primary Care Physicians, and the Commonwealth Fund Commission on a High Performance Health System National Scorecard.
The Real Problem: The Full Cost of Employee Illness

**Medical & Pharmacy Costs**
- $6,020 PEPY
  - *2003 PEPY Avg.

**Health-related Productivity Costs**
- $12,000 PEPY

**Total PEPY**
- $18,020

**Personal Health Costs**
- Medical Care
- Pharmacy
- Hospitalization
- Behavioral Health
- Workers’ Comp
- Medical Costs
- Salary Continuation

**Productivity Costs**
- Absenteeism
- STD
- LTD
- Presenteeism
- Overtime
- Turnover
- Temporary Staffing
- Administrative Costs
- Replacement Training
- Off-Site Travel for Care
- Employee Dissatisfaction
- Customer Dissatisfaction
- Variable Product Quality

*Sources: Loeppke, et al., JOEM, 2003; 45:349-359 and Brady, et al., JOEM, 1997; 39:224-231*
Problem: Broken Care Processes

CONSUMERS
- Visit primary care physician
- Request for eligibility?
- Authorization, utilization review
- Utilization review
- Denial, escalation
- Referral
- Transfer
- Provide physicians referral
- Visit specialist

HEALTH PLANS
- Disease Mgmt
- Denial, escalation
- Utilization review
- Check formulary for meds
- Interventions
- Program sponsorship

PROVIDERS
- Referral Transfer
- Clin trials
- Meds marketing
- Home Care

SUPPLIERS
- Mostly manual
- Paper, fax, phone
- Many errors, redundancies
- Enormous money wasted
- Reduced quality of care
- Consumer compromised
The Actual Patient Experience?

Health Care Providers
- Dr. # 1
- Dr. # 2
- Dr. # 3
- Hospital
- Pharmacy #1
- Pharmacy #2
- Acupuncturist
- Health Store
- Diet Center
- Home Care
- Neighbor

Health & Technology Vector
Patient Expectations...

Al wants more hair, less fat, and a better sex life...

and he wants his health plan to pay for it.
How bad is it?????

- Half of America’s heart attack patients do not receive proper follow-up care. [Source: Institute of Medicine, Committee on Health Care in America. Crossing the quality chasm: a new health system for the 21st Century, 2001]

- Nearly 55% of older women with a fracture did not receive osteoporosis medications after their diagnoses. [Source: KP Center for Health Research, Journal of Bone and Joint Surgery, 12/03]

- Two thirds of America’s diabetics receive inadequate care. [Source: RAND Study, New England Journal of Medicine, June 26 2003]

- 31% of patients considered ideal candidates for ACE inhibitors were sent home without them.

- 72% of heart failure patients were released without recommended discharge instructions.

- 69% of smokers with heart failure were never told to quit.
How bad is it??????

• US Inconsistency – one hundred and thirty-five [135] doctors diagnosed the SAME patient and recommenced 82 different treatments.

• It takes 17 years for new knowledge generated by randomized control trials to be incorporated into practice [Source: Foundation for eHealth Initiative, November, 3, 2003]

• A study was done…. Some patients were just given scars instead of surgery – “fake” surgery in effect….in a clinical trial with a matched control group, surgery was no more effective than a placebo in eliminating pain and improving function.

• 18% of heart failure patients didn’t have the pumping power of the left ventricles measured.[Source: UCLA 2003 Heart Patient Study]
Chronic Disease...a Global Crisis

....”Listen” to the World Health Organization...

- Chronic disease is epidemic and rapidly evolving …around the world!
  - 35,000,000 people died from Chronic disease in 2005
  - 60% of all deaths are due to chronic illness
  - The “burden” will impact both developed & developing countries

- Global recognition & response has not kept pace

Chronic disease are “invisible” epidemics of heart disease, stroke, diabetes, cancer and other chronic diseases that for the foreseeable future will take the greatest toll in deaths and disability around the world
Global burden of disease 1990-2020 by disease group in developing & newly industrialized countries

Chronic Disease “The Cancer of the 21st Century”…WHO
### Vulnerability to Aging in Developed Countries

**Public Benefits to the Elderly as % of GNP**

#### FIGURE 3: Public Benefits to the Elderly, as a Percent of GDP

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>9.0%</td>
<td>16.8%</td>
</tr>
<tr>
<td>UK</td>
<td>12.1%</td>
<td>17.0%</td>
</tr>
<tr>
<td>US</td>
<td>9.4%</td>
<td>20.3%</td>
</tr>
<tr>
<td>Canada</td>
<td>8.9%</td>
<td>22.9%</td>
</tr>
<tr>
<td>Sweden</td>
<td>13.3%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Belgium</td>
<td>12.7%</td>
<td>24.5%</td>
</tr>
<tr>
<td>Germany</td>
<td>15.1%</td>
<td>25.5%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>11.7%</td>
<td>25.6%</td>
</tr>
<tr>
<td>Japan</td>
<td>11.8%</td>
<td>27.0%</td>
</tr>
<tr>
<td>France</td>
<td>15.8%</td>
<td>29.3%</td>
</tr>
<tr>
<td>Italy</td>
<td>17.3%</td>
<td>32.0%</td>
</tr>
<tr>
<td>Spain</td>
<td>12.6%</td>
<td>33.1%</td>
</tr>
</tbody>
</table>

Elderly are aged 60 and over

Source: Watson Wyatt Report on Aging; March 2003
### Net Public Benefits to the Elderly as % of Non-elderly Income

#### FIGURE 5: Net Public Benefits to the Elderly, as a Percent of After-tax Nonelderly Income

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>14.0%</td>
<td>19.3%</td>
</tr>
<tr>
<td>Australia</td>
<td>12.4%</td>
<td>22.1%</td>
</tr>
<tr>
<td>US</td>
<td>12.8%</td>
<td>26.8%</td>
</tr>
<tr>
<td>Sweden</td>
<td>17.7%</td>
<td>27.3%</td>
</tr>
<tr>
<td>Canada</td>
<td>12.9%</td>
<td>29.8%</td>
</tr>
<tr>
<td>Belgium</td>
<td>17.2%</td>
<td>31.5%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>10.5%</td>
<td>35.3%</td>
</tr>
<tr>
<td>Germany</td>
<td>20.8%</td>
<td>35.4%</td>
</tr>
<tr>
<td>Japan</td>
<td>15.4%</td>
<td>35.9%</td>
</tr>
<tr>
<td>France</td>
<td>20.3%</td>
<td>36.1%</td>
</tr>
<tr>
<td>Italy</td>
<td>21.6%</td>
<td>37.2%</td>
</tr>
<tr>
<td>Spain</td>
<td>17.2%</td>
<td>42.7%</td>
</tr>
</tbody>
</table>

*Public benefits to the elderly (aged 60 and over), net of taxes, as a percent of the income of the nonelderly (aged 15–59), measured after taxes for the rest of government but before taxes for benefits to the elderly.*
Public Benefits to the Elderly [60+] as a % of GDP

<table>
<thead>
<tr>
<th>All Countries*</th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Benefits</td>
<td>12.5%</td>
<td>14.3%</td>
<td>17.6%</td>
<td>21.7%</td>
<td>24.8%</td>
</tr>
<tr>
<td>Public Pensions</td>
<td>7.6%</td>
<td>8.4%</td>
<td>10.0%</td>
<td>12.0%</td>
<td>13.5%</td>
</tr>
<tr>
<td>Health Benefits</td>
<td>3.3%</td>
<td>4.2%</td>
<td>5.5%</td>
<td>7.2%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Other Benefits</td>
<td>1.6%</td>
<td>1.8%</td>
<td>2.1%</td>
<td>2.4%</td>
<td>2.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US</th>
<th>2000</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Benefits</td>
<td>9.4%</td>
<td>11.0%</td>
<td>15.2%</td>
<td>18.8%</td>
<td>20.3%</td>
</tr>
<tr>
<td>Public Pensions</td>
<td>5.2%</td>
<td>5.5%</td>
<td>7.4%</td>
<td>8.8%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Health Benefits</td>
<td>3.7%</td>
<td>4.9%</td>
<td>7.1%</td>
<td>9.2%</td>
<td>10.5%</td>
</tr>
<tr>
<td>Other Benefits</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.7%</td>
<td>0.8%</td>
<td>0.8%</td>
</tr>
</tbody>
</table>
Importance of Controlling Chronic Disease

Chronic Disease is Also Important in Low & Low Middle Income
Obesity/Unhealthy Lifestyles

(*BMI ≥30, or about 30 lbs overweight for 5’4” person)

75 percent of Americans will be overweight by 2015

Center for Disease Control and Prevention-- 2005 Data
USA # 1 Breakfast Export...885 Calories

Enormous Omelet Sandwich - Burger King®

Clinicians... Beware!!
-760 total calories
-450 calories from fat
-2080 mg Sodium

Did taste Great!!
USA # 1 Lunch Export…1580 Calories

Classic Triple with cheese
...enough to satisfy any hunger
-970 total calories
-530 calories from fat
-2060 mg Sodium

Biggie® French Fries
...piping-hot & golden brown
-490 total calories
-210 calories from fat
-480 mg Sodium

Medium Cola Soft Drink
..the perfect complement
-120 total calories

Wendy’s® - 2005
Raising the bar........
Hardee’s Country Breakfast Burrito - 920 Calories

• 2 egg omelet filled with bacon, sausage, diced ham, cheddar cheese, hash browns and sausage gravy.
• 60 grams of fat.
• only $2.69.

The new burrito represents:
• half a day's calories...plus...a full day's worth of saturated fat and salt,
• To say nothing of cholesterol.... all before 10 o'clock in the morning,
REALY raising the bar...

- Hardee’s Monster Thickburger - a 1,420-calorie sandwich - Contains two 1/3-pound slabs of beef, four strips of bacon, three slices of cheese and mayonnaise!
- Hardees' Chicken Salad - *only* 1,100 calories

The Center for Science in the Public Interest, has called the Hardee's line of Thickburgers "*food porn.*"
McSick in 30 Days

Activist Morgan Spurlock reveals personal health numbers after 30 days on a fast food diet.

Morgan Spurlock: By the McNumerics

Before and after numbers guaranteed to make you think twice about a steady diet of fast food

Men's Health, 2004, page 104. To learn more visit www.menshealth.com

*Serum glutamic pyruvic transaminase, an enzyme present in the liver. Elevated levels may indicate damage.
McDonald’s

30,000 facilities in 118 countries…..

• Moscow - Pushkin Square facility serves 40,000 every day
• Kuwait - opening in 1994 has 15,000 customers lined up
• China – 350 facilities & workforce of 38,000
• Hong Kong – 158 franchises [1 per 42k residents which is close to the US at 1 per 30K residents]
• Japan – 3,000 franchises
• India – planned investment of $75 million to triple the number of facilities [Maharaja Mac is lamb-based]

Source: Food Fight by Kelly D. Brownell, PhD, Yale Center for Eating & Weight Disorders, 2004
The Other Big Three….

**Donuts & Pizza & Fried Chicken**

**Fried Chicken** – KFC [Kentucky Fried Chicken] 1st foreign fast food chain allowed to enter China with 500 outlets to grow to 5,000…KFC is the most recognized foreign brand in China…over Coke, Nestle, and Mickey Mouse!

**Dunkin Donuts** Sells 6.4 million donuts per day [enough to circle the earth twice – 2.3 billion/year]
- 1,000th facility opened in Thailand in 1995
- 5,000th facility opened in Bali, Indonesia in 2000

**Pizza** – Domino’s & Pizza Hut vie for international leadership
- Domino’s – 2,094 outlets in 61 countries
- Pizza Hut – 4,000 outlets in 90 countries

*Source: Food Fight by Kelly D. Brownell, PhD, Yale Center for Eating & Weight Disorders, 2004*
Whoops... China Delegation Members “caught in the act” at KFC!!!
[“What happens in Beijing.....stays in Beijing”]

Behaviors are Hard to Change........

Two Fish Sandwiches
Bucket for Four of KFC Extra Crispy!
Large Coke

Local KFC Restaurant in Beijing, China
OBESITY: The percentage of the population older than 15 with a body-mass index greater than 30.

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>31%</td>
</tr>
<tr>
<td>Mexico</td>
<td>24%</td>
</tr>
<tr>
<td>UK</td>
<td>23%</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>22%</td>
</tr>
<tr>
<td>Greece</td>
<td>22%</td>
</tr>
<tr>
<td>Australia</td>
<td>22%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>21%</td>
</tr>
<tr>
<td>Hungary</td>
<td>19%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>15%</td>
</tr>
<tr>
<td>Canada</td>
<td>14%</td>
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Obesity has taken the place of famine as one of China's top concerns.

In Shanghai, over 15% of primary school children are obese vs. 8% for the country.

Source: 8/4/2005, South Asia News @ www.Onlypunjab.com
An Obesity Epidemic…

- Rate of obesity in China increased 97% in 10 years
- Obesity levels have soared from 10% in 1982 to 15% in 1992 and 25% in 2004
- 18% of the Chinese population are now overweight
- 50% of Chinese adults between 39-59 are overweight
- 18 million adults in China are obese, 137 million are overweight.
- 30% of people in major cities are overweight [maybe as high as 60% in Beijing]
- Overweight adolescents have 70% greater risk of becoming overweight or obese as adult

Impact on Chronic Disease…

- 100 million people in China suffer from high blood pressure and 26 million with diabetes
- 64 million have metabolic syndrome-a condition
- A BMI index increase of 2 points, increases the risk for coronary heart diseases and stroke increase by 15.4% and 6.1%
The Global Expansion of DM

DM and Wellness Initiatives around the world!
Evolution of the US DM Industry

1. **Mid-Late 1980s**
   - Kaiser & Group Health Pioneer research In chronic disease

2. **Early-mid 1990s**
   - Pharma/RX Based DM

3. **Mid-Late 1990s**
   - Free Standing Single State DMOs plus Insourced Programs

4. **Late 1990s & early 2000**
   - DMO Industry Shifts to 1-stop shopping

5. **2002 to 2004**
   - Market Expansion: Medicaid

6. **2002 to Present**
   - Direct to Employer Market for DM

7. **2004 Thru Present**
   - Integration Of DM & Wellness in Employer Mkt

8. **2005 Thru Present**
   - DMO Consolidation

9. **2006 & Future**
   - Potential New DMO Upgrades
   - Physician Model Testing
   - International Markets Opening
   - New Players
   - HPlan Insourcing

I D M A

Kaiser & Group Health Pioneer research In chronic disease

Potential New DMO Upgrades
Physician Model Testing
International Markets Opening
New Players
HPlan Insourcing

Mid-Late 1980s
Early-mid 1990s
Mid-Late 1990s
Late 1990s & early 2000
2002 to 2004
2002 to Present
2004 Thru Present
2005 Thru Present
2006 & Future
The Past: US Model of DM
Future: Global Experience - Catalyst for Change
## Countries with DM Programs...

### Existing Programs
- Argentina
- Australia
- Belgium
- Chile
- Brazil
- Germany
- India
- France
- Japan
- Netherlands
- New Zealand

### Developing Programs
- Canada
- Singapore
- South Africa
- Spain
- United Kingdom
- Norway
- Poland
- Sweden
- Taiwan
- United States
- South Korea
- Hong Kong
- China
- Thailand
Disease Management…

Expanding Around the World

• Australia
  - Over $400 Million spent on demonstration projects
    [Choice: build new expensive Hospitals or keep people out of them] – New DM Association formed; DM Adopted by government; Annual DM Conference

• Germany
  - DM legislated with reimbursement for sick funds that provide DM; New comprehensive US pilots in Germany

• Singapore
Disease Management…
Expanding Around the World

- United Kingdom
  - Several models in early testing. NHS Strategic Health Authorities adopting DM; fragmented programs

- South Africa
  - Private sector programs achieving good results; combining with very strong focus on wellness

- Argentina
  - Private hospital initiatives with good use of technology/EMR

- India
  - Several pharma-backed DM pilots being tested; **New DM Association formed** in 2008; eroding lifestyles from western countries
Disease Management…
Expanding Around the World

• Spain
  - Government initiated CHF pilot developed & tested in Barcelona; COPD in wings; slow progress outside of Barcelona

• Portugal
  - Government Sponsored DM Task Force initiated in 2007. IDMA Board member is on the committee

• Japan
  - Ministry of Health Interest; private sector pilots; 2 DM Association, book, newsletter; A mandate for DM in 2008

• France
  - US company pilots being initiated in 2008
Disease Management…
Expanding Around the World

- **Netherlands**
  - Academia-driven assessment of DM programs in progress; private & public sector interest; several major national initiatives

- **Brazil**
  - Private sector health plans plus 6-7 DM vendors working in the DM space; only about 10,000 patients under care; the market is poised for growth for 40 million private insurance members; IDMA conducted workshops in San Palo and Rio in late 2007 and met with a host of insurance companies and public officials

- **Italy**
  - US Company pilots…early stages

- **Taiwan**
  - Pilot programs in 4 disease states; Government wants to move more aggressively

- **Poland**
  - Physician-based model being developed and tested for “proof of concept”
Effective Global Interventions…

- **Poland** – 7% decline in deaths from heart disease
- **Finland** – 65% reduction in death rate from heart disease plus major decline in deaths from lung cancer with 7 year increase in male life expectancy
- **Philippines** – decline in adolescent smoking from 33% to 22%
- **Singapore** – Smoking rate decreased from 23% to 15%
- **South Africa** – 33% reduction in tobacco use
- **Zambia** – major drop in sales of branded soft drinks
Effective Global Interventions….

- **Sao Paulo, Brazil** – regular physical activity increase from 55% to 60% in 2003; 96% increase in older high risk group
- **United States** – Schools meeting EAT SMART guideline increase from 10% to 50%
- **South Africa** Nurse Based DM program achieved improved disease control in 68% of hypertensive, 82% of diabetics and 84% of asthmatics
- **Russia** – 85% reduction in admissions from high blood pressure
- **New Zealand** – National Food Industry Accord to reduce obesity
Disease Management Associations?

- **Australia** - association plus newsletter and annual conference in the fall. Fairly active
- **Germany** – small national conference for educational exchange; US companies piloting programs.
- **Japan** – two DM associations plus infrequently published newsletter. One association is focused on wellness and the other on traditional DM. Corporations are active with IBM leading the way. Device companies are exploring DM.
- **Canada** – a chronic disease group is forming; Calgary has large bi-Annual Conference on DM; government is active in selected provinces

In the future:

- **Brazil** – IDMA is working with local officials to form a chapter; US companies are now active in Brazil via partners.
- **China** – IDMA will conduct a small summit in the fall and a chronic disease conference in 2009.
Lessons Learned from Global Experience

• The barriers are similar to those in the US
• Attempting to adjust/adapt programs to fit the current reimbursement/policy environment is one of the primary barriers to DM Expansion
At the End of the Day…

......The Good News IS...

- The scientific knowledge exists…today

- A relative small annual reduction in chronic disease death would achieve major economic and social results.

- The good news is:
  - The Causes are Known
  - The Way Forward is Clear
  - It’s Will Only Take Unique Leadership and an Action Plan

- Leadership and comprehensive, integrated action is the answer
The **Ultimate Solution** is Disease Prevention

75% of chronic disease is the result of unhealthy lifestyle…and is preventable!
Brazilian Case Study… Before & After Disease Management Program Intervention

Before

1 Year After
Areas of Opportunity

- More rapid adoption of behavior change science
- More aggressive leveraging of technology – a number of technology companies are entering the DM space including google, microsoft and others
- Clearer/more validated methods of measuring performance
- Enhanced integration of DM into the existing system
- The next frontier: absenteeism & productivity
- Rigorous Pilot Programs
- Strategies for policy and reimbursement change
In Summary...

• The crisis of chronic disease and erosion of lifestyle is a global crisis

• We need to work together….

• There are very important “lessons learned” around the world, including the United States

• Countries can demonstrate true regional and global leadership in both disease management and wellness initiatives
The Challenge... the Mission

The **challenge** of the unprecedented personal and economic burden of a rapidly aging population with its inherent problem of how to better manage chronic disease has been described as the "next global crisis." This world-wide problem requires world-wide collaboration.

The **mission** of IDMA is to create an international forum of disease and health management stakeholders in order to share knowledge and to build a **collective experience** on how to better promote healthy lifestyles and to enhance the management of chronic disease.
IDMA Resources...

- Web site and memberships for individuals and companies
  - Report archive of 600 articles and studies on DM
  - Directory of vendors
  - Archive of e-Reports [soon to be searchable]
  - Directory of conferences

- Excellent Board of Directors and delegates in 20 countries

**ALSO:** IDMA World DM e-Report - Complimentary Weekly e-Newsletter at [www.DMAlliance.org](http://www.DMAlliance.org) [reaches 8,000 chronic disease stakeholders in 81 Countries.]

Integrated Care Platform

Seamless integration of Telecare, Internet, smart devices and face-to-face deployed according to severity

Typical Population

Cost Per Enrollee

Net Potential Savings

Not Worried Well

Worried Well

Not Yet Diagnosed Sick

Low-Moderate Chronically Ill

High Acuity Chronically Ill

Face-to-Face Interaction (screening, CM)

TeleWeb & Targeted Smart Devices

TeleWeb (Telecare Linked with Web)

Web Only

Net Savings

Low Mod Chronically Ill
Call-Center Labor/Cost Challenge

Supply and Demand Projections for Nurses: 2000 to 2020

Death from Major chronic Disease to grow From 30M to Almost 50M By 2020

Source: Bureau of Health Professions, RN Supply and Demand Projections
Disrupting like the Roomba...
Changing Patient Behaviors...

We Must Better Leverage the principles and Models of Behavior Change

Basic Ingredients of Behavior Change

Intensity

Frequency

Duration
The International Disease Management Market

Warren E. Todd, MBA
Executive Director
International Disease Management Alliance
wtodd@dmalliance.org
My Many Thanks To………

• Hospital Italiano for its leadership in convening this workshop

• To my co-presenters from South Africa, the United Kingdom and China for joining the faculty

• To all of you in the audience for taking the time to join us today to hopefully have a two way exchange about how to address chronic disease and unhealthy lifestyles
At the *End of the Day*…

……The Good News IS…

- The scientific knowledge exists…today

- A relative small annual reduction in chronic disease death would achieve major economic and social results.

- The good news is:
  - The Causes are **Known**
  - The Way Forward is **Clear**
  - It’s Will Only Take Unique Leadership and an **Action Plan**

- **Leadership** and comprehensive, integrated **action** is the answer
Case Study… Dr. Fabulous
Argentina Plastic Surgery…Before & After

**Before** Total plastectomy

**1 Year After** Total plastectomy
Indicator 1 – Number of Older Americans

Percentage of the population age 65 and over, by county and State, 2006

Reference population: These data refer to the resident population.
Source: U.S. Census Bureau, July 1, 2006 Population Estimates.
Indicator 2 – Racial and Ethnic Composition

Population age 65 and over, by race and Hispanic origin, 2006 and projected 2050

![Bar chart showing population age 65 and over, by race and Hispanic origin, 2006 and projected 2050.](chart)

- **Non-Hispanic white alone**: 81% (2006), 61% (2050)
- **Black alone**: 9% (2006), 12% (2050)
- **Asian alone**: 3% (2006), 8% (2050)
- **All other races alone or in combination**: 1% (2006), 3% (2050)
- **Hispanic (of any race)**: 6% (2006), 18% (2050)

**Note:** The term “non-Hispanic white alone” is used to refer to people who reported being white and no other race and who are not Hispanic. The term “black alone” is used to refer to people who reported being black or African American and no other race, and the term “Asian alone” is used to refer to people who reported only Asian as their race. The use of single-race populations in this report does not imply that this is the preferred method of presenting or analyzing data. The U.S. Census Bureau uses a variety of approaches. The race group “All other races alone or in combination” includes American Indian and Alaska Native, alone; Native Hawaiian and Other Pacific Islander, alone; and all people who reported two or more races.

**Reference population:** These data refer to the resident population.

**Source:** U.S. Census Bureau, Population Estimates and Projections.
Percentage of day that people age 55 and over spent doing selected activities on an average day, by age group, 2006

Note: “Other activities” includes activities such as educational activities; organizational, civic, and religious activities; and telephone calls. Chart includes people who did not work at all.
Reference population: These data refer to the civilian noninstitutionalized population.
Chronic Disease
George Halverson  
CEO Kaiser

“It’s time for health care to stop functioning as a highly localized, unacceptably idiosyncratic cottage industry – with the exam room functioning as a medical cottage.”

“Health care is state-of-the-art science, significantly handicapped by antiquated, cumbersome and often dysfunctional information dissemination and data application approaches. (The results are expensive –and sometimes dangerous)

“Health care today is inconsistent, unmeasured, sometimes dangerous and often wasteful.”
The Disease Management Value Proposition

• **Improving the health of populations**
• Enhancing patient satisfaction and care experience
• Enhancing physician satisfaction and delivery experience
• **Reducing total health care demand/cost**
• Improving work force productivity

“A successful Disease Management Program satisfies all 5 points of the value proposition.”

Source: American Healthways
Disease Management – Definitions

Confusion Management

Demand Management

Appropriate Use Guidelines
Quality Assurance
Risk Sharing
Pharmacoeconomics
Patient Satisfaction
Product Development

Disease State Management
Capitation
Quality of Life
Outcomes Data

Health Management
Pharmacoeconomics
Patient Satisfaction
Product Development

Health Information Technology
Outcomes Data

Treatment Algorithms
Definition of Disease Management

Disease Management is a system of coordinated healthcare interventions and communications for populations with conditions in which patient self-care efforts are significant. Disease management:

- supports the physician or practitioner/patient relationship and plan of care,
- emphasizes prevention of exacerbations and complications utilizing evidence-based practice guidelines and patient empowerment strategies, and
- evaluates clinical, humanistic, and economic outcomes on an ongoing basis with the goal of improving overall health.

**Disease Management Components include:**

- Population Identification processes
- Evidence-based practice guidelines
- Collaborative practice models to include physician and support-service providers
- Patient self-management education (may include primary prevention, behavior modification programs, and compliance/surveillance)
- Process and outcomes measurement, evaluation, and management
- Routine reporting/feedback loop (may include communication with patient, physician, health plan and ancillary providers, and practice profiling)

*Full Service Disease Management Programs must include all 6 components. Programs consisting of fewer components are Disease Management Support Services*
Disease Management Is Part of Total Health Management

Disease Management

Covered Lives

Wellness/Prevention

Health Risk Assessment

Population Segmented Across The Spectrum of Health Risk

Complications Management  Disease Specific Risk Assessment  Diagnosis

Disease Management  Acute Care

Disease Treatment

High Risk  Low Risk  Healthy

Disease Prevention  Health Promotion  Risk Minimization

Disease Management

Wellness/Disease Prevention

Health Management
Demand Management

Disease Management

At-Risk Patients

Low-Risk Patients

High-Risk Patients

Interventions

Nurse Triage/Counseling, Sharing of Guidelines, Outcomes Monitoring

1. Input
   - Health Risk Appraisals
   - Claims data
   - Pharmacy utilization
   - Laboratory Data

2. Segment Patients
   - Current health status
   - Health history
   - Demographics
   - Other [psychographics]

3. Interventions
   - Self-Care
   - Education
   - Classes/Materials
   - Coordinated care management (i.e. extend benefits for drugs, other therapies, screenings)
   - Co-morbid risk assessment for high utilizers
   - Outbound counseling & education
   - Coordinated care management
   - Care management system

Source: Anderson Consulting NMHCC 1998
Capabilities Required for Disease Management

- Accurately identify targeted individuals in a large population
- Identify levels of interventions required for each individual
- **Access to Evidence-based protocols**
- Ability to Risk Stratify Patients via Predictive Modeling
- Nurse-based call centers (inbound and out-bound)
- Hospital-based clinician support
- Integrated Clinical and Financial information system
- Tools to influence patient and provider behavior
- Biometric monitoring devices
- Early screening capability
- Proactive/pre-emptive interventions in the home
- Data warehousing
- Consumer trusted medical content
Characteristics of Disease Management in the United States

- Initiated/tested in the **private sector**
- Recently expanded to the **public sector** [for the poor & elderly]
- DM provided by **outsourced** DM vendors as well as internal developed and operated by health insurance plans and state government agencies
- DM is funded largely by **SAVINGS from reduced hospitalization**, ER visits and other more costly interventions. Vendors are often financially AT RISK for their fees
- DM programs are **largely telephonic**….Other countries have other models including community-based models and physician centric models.
- US Initiatives largely focused on **disease management vs. wellness…this** is changing
Predictive Modeling
Finding the future high Utilizers….

1708 (2.2% of Total)  
283 (16% of Year 1 High-Risk)  
1819 (2.3% of Total)

- Year 1
- Year 2
- Patients who had an asthma related hospitalization in both Year 1 and Year 2.
Disrupting like the Roomba...
Seamless integration of Telecare, Internet, smart devices and face-to-face deployed according to severity

Cost Per Enrollee

Net Potential Savings

Net Savings

Web Only

TeleWeb (Telecare Linked with Web)

Typical Population

Face-to-Face Interaction (screening, CM)

TeleWeb & Targeted Smart Devices

Low-Med Chronically Ill

Not Worried Well

Worried Well

Not Yet Diagnosed Sick

High Acuity Chronically Ill

Low Mod Chronically Ill

Sick

Not Yet

Diagnosed Sick
Technology Available Today

• Automated systems
  – Home health zones-AMD
    Telemedicine, Health Hero, HomeMed
    • Require a central location
      within the home
    • Indicates negative health
    • Costly and “Service based”
• Disparate activity monitors (Polar, Suntoo, Omron, Tanita, BodyMedia, Nike, Apple)
• Home health care appliances
  (BGM, BP, Thermometers, Heart Rate Monitors, Peak Flow Meters, weight scales)

Source: Thomas Blackadar, FitSense Technology®, Inc
CHF Program – Wayne State University

PUBLISHED IN _HEART AND LUNG:_

- Patients using the Med-eMonitor had:
  - a 94% medication compliance rate
  - a 96% compliance rate for entering daily weight measures & blood pressure data into the device

- The control group utilized standard paper and pencil diary
- QOL improved in the monitor group compared to the control group (p=0.002)

_The Medication Adherence Solution_
10 widespread misunderstandings about chronic disease - and the reality

**Myth:**
1. Chronic Diseases affect mostly high income countries
2. Low & Middle income countries should focus on infectious disease vs. chronic disease
3. Chronic diseases affect mainly rich people
4. Chronic diseases primarily affect older people
5. Chronic disease primarily affect men
6. Chronic diseases are the results of unhealthy lifestyles
7. Chronic disease cannot be prevented
8. Chronic disease prevention and control is too expensive
9. 1/2 truths: “my grandfather smoked and was overweight and he live to be 96.
10. Everyone needs to die of something

**Reality:**
1. 72% of deaths from chronic disease come from low or lower income countries
2. Deaths from Chronic disease is comparable to Communicable disease in low income countries and 10 times greater in lower/middle income countries
3. The poor are much more likely than the wealthy to develop & die from chronic disease
4. Almost ½ of chronic disease occurs prematurely...under age 70
5. Chronic disease, including heart disease, affect women and men almost equally
6. Individual responsibility can have its full affect only when there is equitable access
7. 80% of premature heart disease, stroke and type II diabetes can be prevented
8. A full range of chronic disease interventions are VERY cost-effective for all regions of the world
9. Wrong!
10. Death is inevitable [maybe], but it does not to be slow, painful and premature
The Real Problem: The Full Cost of Employee Illness

Medical & Pharmacy Costs
*$6,020 PEPY
*2003 PEPY Avg.

Health-related Productivity Costs
$12,000 PEPY

Total PEPY = $18,020

Sources: Loeppke, et.al., JOEM, 2003; 45:349-359 and Brady, et.al., JOEM, 1997; 39:224-231
Disrupting like the Roomba...
Predicting the Costs of Health Care

Source: Health Care Fin. Rev., 1997 vol 18 # 4
Indicator 28 – Use of Time

Percentage of total leisure time that people age 55 and over spent doing selected leisure activities on an average day, by age group, 2006

Reference population: These data refer to the civilian noninstitutionalized population.