Cedars-Sinai

Walker Fellowship Report
CHA Board of Trustees Briefing
July 12, 2007

Thomas M. Priselac
President & CEO
Areas of Interest

- Organization and financing of health care
- Quality monitoring and improvement initiatives
- Use of medical and information technology
<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lutz Fritsche, MD, MBA</td>
<td>Chief Medical Officer, CHARITE University Hospital</td>
</tr>
<tr>
<td>Prof. Dr. med Dr. h.c. Jorg-Dietrich Hoppe</td>
<td>President, German Medical Association</td>
</tr>
<tr>
<td>Wolfgang Hudig</td>
<td>Vice President, Planning &amp; Development, PKV Insurance Company</td>
</tr>
<tr>
<td>Ferdinand Jeute</td>
<td>President/CEO, Health Innovations Systems LTD</td>
</tr>
<tr>
<td>Dr. rer. Pol Rudolf Kosters</td>
<td>President, German Hospital Association</td>
</tr>
<tr>
<td>Dipl.-Kfm. Burkhard Nolte</td>
<td>CEO, St. Francis Hospital</td>
</tr>
<tr>
<td>Uwe Repschlager</td>
<td>Vice President, Planning, Barmer Sickness Fund</td>
</tr>
<tr>
<td>Mr. Jens Spahn</td>
<td>Member, German Parliament</td>
</tr>
</tbody>
</table>
Austria & Switzerland

Austria

Dr. Nikolaus Lottersberger
Chief Medical Officer
Tilak Corporation-University of Innsbruck Hospital

Prof. Dr. Herbert Weissenbock
Chief Executive Officer
Tilak Corporation-University of Innsbruck Hospital

Switzerland

Julien A. Buro
Director of Marketing
Hirslanden Corporation

Sanjay Singh
Vice President, Strategic Planning
Hirslanden Corporation
<table>
<thead>
<tr>
<th></th>
<th>Germany</th>
<th>California</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>82 million</td>
<td>36 million</td>
<td>300 million</td>
</tr>
<tr>
<td>Geography (in square miles)</td>
<td>138,000</td>
<td>163,696</td>
<td>3.7 million</td>
</tr>
<tr>
<td>Number of Hospitals</td>
<td>2,150</td>
<td>357</td>
<td>5,756</td>
</tr>
<tr>
<td>Number of Hospital Beds</td>
<td>530,000</td>
<td>66,204 staffed</td>
<td>946,997</td>
</tr>
</tbody>
</table>
Comparative Spending & Resources
Total Health Expenditures Percentage of GDP, 1995 & 2004

Source: OECD 2006
Health Expenditures Per Capita USD PPP


Source: OECD 2006
Average Annual Growth Rate of Real Health Care Spending

Per Capita 1994 - 2004

United States: 3.7%
Germany: 2.4%

Source: The Commonwealth Fund, calculated from OECD Health Data 2006
Health Care Expenditure Per Capita by Source of Funding

2004

Adjusted for Differences in Cost of Living

<table>
<thead>
<tr>
<th>Source of Funding</th>
<th>United States</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Spending</td>
<td>$2,727</td>
<td>$2,350</td>
</tr>
<tr>
<td>Out-of-Pocket</td>
<td>$803</td>
<td>$342</td>
</tr>
<tr>
<td>Private Spending</td>
<td>$2,572</td>
<td>$313</td>
</tr>
</tbody>
</table>

Source: The Commonwealth Fund, calculated from OECD Health Data 2006
1 Data from Germany from 2003
Number of Beds Per 1,000 (1990 & 2004)

<table>
<thead>
<tr>
<th>Country</th>
<th>1990</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>7.8</td>
<td>6.5</td>
</tr>
<tr>
<td>Germany</td>
<td>8.3</td>
<td>6.4</td>
</tr>
<tr>
<td>Switzerland</td>
<td>6.5</td>
<td>3.8</td>
</tr>
<tr>
<td>United States</td>
<td>3.7</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Source: OECD 2006
<table>
<thead>
<tr>
<th>Population</th>
<th>Total Admissions/Discharges</th>
<th>Admissions/Discharges Per 1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany*</td>
<td>82 million</td>
<td>16,622,956</td>
</tr>
<tr>
<td>United States</td>
<td>300 million</td>
<td>37,006,000</td>
</tr>
<tr>
<td>California</td>
<td>36 million</td>
<td>3,434,221</td>
</tr>
</tbody>
</table>

*Germany data for 2003; United States & California 2005
Average Length of Stay for Acute Care, 2002 & 2004

- United States: 5.7 (2002), 5.6 (2004)

Source: OECD 2006
Inpatient Hospital Spending per Inpatient Acute Care Day

2004

Adjusted for Differences in Cost of Living

Source: The Commonwealth Fund, calculated from OECD Health Data 2006
Number of Nurses and Physicians Per 1,000 Persons, 2004

Austria: Nurses 9.3, Physicians 3.5
Germany: Nurses 9.6, Physicians 3.4
Switzerland: Nurses 10.7, Physicians 3.8
United States: Nurses 7.9, Physicians 2.4

Source: OECD 2006
Number of Staff Per Bed  2004

<table>
<thead>
<tr>
<th>Country</th>
<th>Acute Care Hospital Staff Ratio</th>
<th>Acute Care Nurses Staff Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>2.18</td>
<td>0.78</td>
</tr>
<tr>
<td>Germany</td>
<td>2.03</td>
<td>0.75</td>
</tr>
<tr>
<td>Switzerland</td>
<td>3.52</td>
<td>1.27</td>
</tr>
<tr>
<td>United States</td>
<td>5.12</td>
<td>1.45</td>
</tr>
</tbody>
</table>

Source: OECD 2006
Nursing Utilization Per Acute Care Bed Day

Practicing nurses per 1,000 acute care bed days, 2002

Nurse staffing ratios are higher in the US than in Europe

<table>
<thead>
<tr>
<th>Unit</th>
<th>US</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU</td>
<td>1-2</td>
<td>2</td>
</tr>
<tr>
<td>Telemetry</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Med/Surg</td>
<td>6</td>
<td>10-12</td>
</tr>
</tbody>
</table>

Patients per nurse

OECD average 7.1

*United States includes nurses involved in patient care only; excludes nurses employed by industry or noncare social programs (17% of total)

Source: OECD; expert interviews; McKinsey Global Institute analysis January 2007
Units of Scanners and MRIs Per One Million Persons, 2004

- Austria: 14.9 MRIs, 28.5 CT Scanners
- Germany: 6.6 MRIs, 15.4 CT Scanners
- Switzerland: 14.3 MRIs, 17.9 CT Scanners
- United States: 26.6 MRIs, 32.2 CT Scanners

Source: OECD 2006
High Level Quality Metrics
Infant Mortality Rate, 2004

Infant deaths per 1,000 live births

- Austria: 4.5
- Germany: 4.1
- Switzerland: 4.2
- United States: 6.9

Source: OECD 2006
Healthy Life Expectancy at Age 60, 2002

Developed by the WHO, healthy life expectancy is based on life expectancy adjusted for time spent in poor health due to disease and or injury.

Source: OECD 2005
Financing System Overview
German Healthcare Financing System Overview

- German population – 82 million

- 10.3% of GDP on healthcare spending; third among developed countries behind US (16%); Switzerland (12%); Austria (9.6%)

- Unemployment reported at 10.5% (13% East; 8% West)

- Political structure
  - CDU – Christian Democratic Union
  - CSU – Christian Socialist Union (Bavaria)
  - SPD – Social Democrats

- 90% of population in public insurance (sick funds)
German Healthcare Financing System Overview

- Approximately 250 different public sick funds handling $175 billion/year
  - Regional: 16/40% share
  - National: 10/35% share
  - Company/Union: 200/20% share

- Premium (Family Subscription) 13-15% of wages
  - 50% paid by employer
  - 50% paid by employee
  - Unemployed funded through unemployment fund

- Sickness fund administrative costs 5-6%

- “Competition” between sickness funds since 1995
German Healthcare Financing System Overview

- Created risk structure compensation adjustment (age + sex). All funds pooled then redistributed on numbers, age and sex.

- Expect further adjustment in 2008 using a health status adjustment (risk structure compensation between the sickness funds):
  - Health status adjustments based on medication use, hospitalizations, age and sex.

- In order to be eligible for private insurance must earn greater than 3,500 euro per month (approximately $4,200/month).

- International health:
  - Increasing market – former USSR and middle east
  - No financial incentive to serve other EU country referrals.
<table>
<thead>
<tr>
<th>Public Insurance</th>
<th>Private Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% of population</td>
<td>10% of population</td>
</tr>
<tr>
<td>Family insurance</td>
<td>Individual insurance</td>
</tr>
<tr>
<td>Income dependent</td>
<td>Risk dependent</td>
</tr>
<tr>
<td>Employees, pensioners</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Standard set of benefits</td>
<td>Benefits individually selected</td>
</tr>
<tr>
<td>No return option (no refund of costs)</td>
<td>Refund of costs (e.g. 2 month refund)</td>
</tr>
</tbody>
</table>
The Barmer

- Largest nationwide health insurance company
- 7.4 million members
- One national headquarter; 13 state headquarters (contract negotiations); 79 regional offices (marketing); 950 customer centers (customer services)
- 12,500 employees
Provider Overview
German Healthcare Providers

- 2,150 hospitals going to 1,500
  - Hospitals account for 35%/50 million euro of total expenses
  - Approximately 1 million employees including 130,000 physicians
  - Hospital physicians unionized
  - Ownership
    - 1/3 private for profit including 2-stock companies
    - 1/3 religious
    - 1/3 community/public

- 130,000 ambulatory physicians
  - 15% of total spending
  - Approximately 60,000 general practitioners
  - Local/regional physician associations operate urgent care centers nights/weeks
German Healthcare Providers

- 20,000 drugstores; 14% of total expenditures
- 11% of expenses for dental
- 11% for massages, transports, DME, etc.
Spending on Physician Services per Capita in 2004

Adjusted for Differences in Cost of Living

Pharmaceutical Spending Per Capita in 2004

Adjusted for Differences in Cost of Living

Source: J. Cylus and F.F. Anderson, Multinational Comparisons of Health System Data, 2006
(New York: The Commonwealth Fund, April 2007)
Hospital Payment System

- Prior to 1994 – per diem
- 1994 – DRGs for 20% of all cases
- 1995-1999 – unsuccessful effort to expand DRGs
  - Range of DRG payments 2500-3300 euro (varies by state)
  - DRGs allocate a fixed budget and projected volume. If actual exceeds budget receive approximately 30% of DRG
  - Capital reviewed and paid for outside of DRG (5-7 year lead time determined at state level)
  - Can finance capital expenditures on own but not eligible for public system payment
Hospital Payment System

- 2004 – DRGs all hospitals
- 2005 – 2008 – Convergence phase from individual hospital prices to federal/state prices
Current Ambulatory Payment System

- Each sickness fund pays fixed price of approximately $500 per year for each family to regional ambulatory physician union (KV) regardless of age, number of family, or health status.

- Each physician collects points for services rendered (fee for service).

- More points equal more for individual physician (subject to total budget ceiling at KV level).
Future Ambulatory Payment System (2008?)

- Each sickness fund pays fixed price for each person to the regional KV including an adjustment for health status
  - Reflects negotiated agreement between the Federal Sickness Fund unions and the Federal KV (physicians) in December 2005

- Each ambulatory physician group within the KV (GYN, GP, etc) paid based on a “risk adjusted” basis
Professor Hoppe President of German Medical Association

- GMA is umbrella for state organizations

- Role
  - CME
  - Specialties/Certification
  - All physicians must be members of an association
  - Dealing with patient satisfaction issues including arbitration of disputes. Use professional review panels. Court an option but most do not.
  - Consult with government (whether they want advice or not)

- Change
  - Barrier between hospital based and ambulatory physicians
  - 1980’s payment levels
Mr. Nolte St. Frances Hospital (Munster)

- Part of 13-hospital system
- 600 beds
- 24,000 admissions
- 17,000 inpatient surgeries; 5,000 outpatient
- 828 full-time employees (+ 150 physician – 30 anesthesia)
- 330 nurses (3 RNs per 30-bed unit; ICUs staffed 1/4)
- ALOS 6.2 days
Mr. Nolte St. Frances Hospital (Munster)

- 1,500 births
- Total revenue 90 million (60 inpatient) euro; $108 million US
- Food service, facilities management, pharmacy outsourced
- 2-3 beds per room standard
- 1.6 million base capital plus special requests
- Neither depreciation or interest in DRG payment
- Medical guidelines nearly 80%
Mr. Nolte St. Frances Hospital (Munster)

- Challenges
  - $ for capital
  - 5-7 year CON process
  - Private DRG payment same as public (private insurance buys single bed room and selection of physician. Department head is king and king maker)
  - Payment system distortions (excess Ortho, Eye and Cardiac)
  - Cost control (1.0 in 1994 - .80 in 2005)
  - Split between ambulatory and hospital based physicians

- No physicians in Board Governance
Mr. Nolte St. Frances Hospital (Munster)

- Quality Reporting/Payment
  - Limited to high volume DRGs, physician and qualifications, equipment and availability, CME programming, complications
  - Expected to increase payment to ambulatory physicians for chronic care management
  - Relatively limited peer review (privacy limitations – patient approval)

- Physician compensation differs more on age and expertise rather than specialty

- System built on trust/ethics

- Information technology
Medical Education

- 5-6 year BA/MD
- 3-5 year Grad education as employed physician
- 26 year old physicians earns approximately 3400 euro/month
- Medical education costs government 250,000 Euro per student
  - 500 – 1000 euro/semester just recently started to be paid by trainees
- Rural shortages
- Research paid by government and corporations
Medical Education

- Less formal structure (less formally articulated educational requirements)
- Quality similar to US
- Less super specialization and concentration of specialists in urban areas
Observations & Conclusions
Observations & Conclusions

- **Information technology**
  - Similar to US hospitals
  - Broader penetration in physician offices

- **Quality**
  - Macro indicators equal or better
  - Less but sufficient technology base
  - Process and outcomes measures
    - Better in some areas
    - Worse in others
    - Trust and confidentiality
Observations & Conclusions

- Organization and financing
  - Substantially different on both fronts
  - Fundamental cultural differences reflected in organization of delivery and financing
    - Social safety net more pervasive
    - Reflected in tax structure
    - Remnants of the guilds (pharmacies and KV structure)
Observations & Conclusions

- Organization and behavior of delivery system reflects rational economic behavior within incentives and constraints of system coupled with societal values
  - Financing system key strategic driver of cost structure
  - Cost control at macro level
  - Control of outpatient ancillaries
  - Less “efficient” use of hospital resources
  - Less specialization/time-off
  - Less demand side influence
  - Substantially lower labor costs across the board (MD/RN)
  - Link between funding of education programs and financing system
  - German reunification
Observations & Conclusions

- Every health system is a reflection of larger societal values
- Private insurance an accommodation to those with means, not a cost containment strategy
- Every system must ultimately meet the test of being politically viable, economically feasible and socially acceptable