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Global Update on Risk Adjustment and Predictive Models

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Plan for this talk

- Introduction
- Germany - diagnosis-based RA in 2009 (200 plans)
- Netherlands - “Managed-Competition” (15 plans)
- Israel – CHS RA model for 2008 (4 plans)
- USA topics – Medicare, Commercial, Medicaid
Predictive models useful for diverse purposes in US and abroad

- plan payment by sponsor (“risk adjustment”)
- underwriting and premium calculation
- plan selection and negotiation by employers
- provider profiling and selective contracting
- measuring quality (severity adjustment)
- high cost case identification
- case management
- disease management
- pay-for-performance targets
- payments for primary care and other specialties
Four agents and five primary contracting relationships

Risk Adjustment:
- health plan payment

Risk Adjustment:
- Medical savings accounts?
- Vouchers?

Risk Adjustment:
- Quality measurement
  - provider profiling,
  - selective contracting,
  - primary care payment

Sponsor

Health Plans

Consumers

Providers
Germany: Retooling for diagnosis-based risk adjustment in 2009

One of these must be the new hip...
Germany

pre-1995

Sponsors

Employers

Low and middle Income

High income

Consumers

Health Plans

~600 Sickness Funds

Supplementary Plans

KV regions

Doctors

Hospitals

Drugs

Sick Leave
Germany 2000

Sponsors

- Central Insurance Fund
- Employers

Health Plans

- ~400 Sickness Funds
- KV regions
- Private Insurance

Consumers

- Low and middle Income
- High income

Providers, etc.

- Doctors plus others
- Hospitals
- Drugs
- Sick Leave

Supplementary Plans

12-14.5% premium contribution, varies by plan
Germany
2009

Sponsors
- Central Insurance Fund
- Employers

Diagnosis-based RA

Health Plans
- ~150 Sickness Funds
  - KV regions
  - Sick Leave
  - Doctors plus others
  - Hospitals
  - Drugs

Supplementary Plans

Consumers
- Low and middle Income
- High income

Providers, etc.

Uniform premium contribution for any plan

Health spending 11.1% of GDP

Germany
2009

Diagnosis-based RA

~150 Sickness Funds

Supplementary Plans

Uniform premium contribution for any plan

Health spending 11.1% of GDP
German Health Reform Act 2007

- German Federal Insurance Agency (BVA) responsible for risk equalization between health plans (sickness funds)
- Eliminated distinction between private and statutory plans
- Risk adjustment mandated by 2001 law, implemented by 2007 reform
- Uses all encounter diagnoses (inpatient and outpatient) and prescription drugs
- Prospective regression model
- No separate groups for disease management
- Cap on regional effects of changes
- Customized classification system started with DxCG system
Germany: 80 disease conditions selected

- Started with 781 DxGroups from DxCG
- Conditions required to be:
  - **Costly** = among highest 30% of all conditions
  - **Chronic** = more than 50% appear in two or more distinct quarters
  - **Severe** = high hospitalization rates
- Unadjusted expenditures for included categories must be at least 50% above the average expenditure
- No phase-in proposed, no risk sharing proposed
- Final decision is due July 1, 2008
- January 1, 2009 Central Insurance Fund to start using new payment system
Will the patient still qualify for an elevated risk adjustment payment?
Netherlands: “Managed Competition”

- Standardized insurance benefits for all (98.5% of population)
- 15 insurers compete for health business
- Revenue from payroll tax plus community rated premium contribution
- Citizens can change insurer once every year
- Fees and DRGs foster provider competition
- Premium subsidies for people on low incomes and age < 18
- Demographics used to level plan receipts since 1991
- Risk-adjusted transfers between competing health plans expanded from prescription drugs (2002) to inpatient diagnoses (2004)
- 50% prospective risk adjustment/50% ex post reinsurance
Dutch health care system, 2008

Risk adjustment: health plan payment

Sponsor

Central Insurance Fund

Employers

Individual contracts

Consumers

Health Plans

15 Sickness Funds

Supplementary Plans

Health spending <10% of GDP

Premiums €1,050/ year

BOSTON UNIVERSITY

payroll tax at 6.5% of first €30K
Choose insurance as individuals, not families

Premiums €1,050/ year

Choose insurance as individuals, not families
Dutch Ex-Ante Risk Adjustment System

Risk adjusters (as of 2008)

- age, gender 21
- kind of income 5
- urbanization 10
- pharmaceutical cost groups (PCG) 17
- inpatient diagnostic cost groups (DCG) 13
- income levels 10
- (+adjustments for mandatory deductibles)
Dutch Pharmaceutical Cost Groups
(used since 2002)

Only use prescription drugs for:
- chronic diseases (persist more than 1 year)
- drug prescription in previous year for >181 days
- high future predicted costs
- at least 1000 patients
- clear consensus concerning drug’s use

**Drug categories:** asthma/COPD, epilepsy, Crohn/colitis ulcerosa, cardiac disease, rheumatism, Parkinson, diabetes (type 1), transplantation, cystic fibrosis, neuromuscular disorder, HIV/AIDS, renal disease/ESRD

12% of total population falls into a PCG-group (2006)
Dutch Inpatient DCGs
(used since 2004)

- Principal diagnosis of hospital admissions in previous year
- length of stay 3 days or more
- substantial group of patients (more than 1000)
- DCG must be easily identifiable
- Clustered into 13 groups
- Only 2.3% of total population falls into a DCG-group
Israel: Mandatory Health Insurance Since 1995

Emergency, we need better risk adjustment!
Isreal

- 1995: Health insurance made mandatory for all citizens
- Four competing health plans, allowed to do selective provider contracting.
- Risk adjustment between plans based on:
  - 95% age (not gender!)
  - 5% on five specific diseases:
    - end stage renal failure requiring dialysis, Gauche, Talasemia, Hemophilia and AIDS
- Some evidence of significant risk differences between competing plans, but inertia
Largest health plan in Israel (Clalit Health Services) in 2008 expanded the diseases used to allocate money to nine districts

Diseases used for risk adjustment 2001-2007
- Severe asthma
- Type 2 diabetes with insulin
- Malignancy
- Ischemic heart disease

Diseases groups used for 2008
- Transplant patients
- Hematology malignancy
- General malignancy
- Acromegaly, CHF, MS, Pulm HTN, CRF
- Ischemic heart disease
- Type 2 diabetes with insulin
- Rheumatic diseases
- Liver diseases
- Neurological diseases
USA: leaders in RA technology

EEGs of the rich and infamous.

George Bush.

Monkey.

Patient in REM sleep.

Stimulus applied: Banana. Contemplating Foreign Policy. Algebra Problem.
US Medicare program, circa 1980

Sponsor
- Government

Health Plans
- Traditional Medicare

MEDI-GAP Plans

Consumers
- Medicare Eligible Individuals

Providers
- Doctors
- Hospitals
- Drugs

Sponsor Health Plans
- Consumers
- Providers

Government

Traditional Medicare

MEDI-GAP Plans

Medicare Eligible Individuals

Doctors

Hospitals

Drugs
US Medicare program, 2008

Risk Adjustment:

Sponsor
Government

Health Plans
Traditional Medicare, HMOs, PPOs, Private FFS

Medicare Enrollees

Consumers

Providers
Doctors
Hospitals
Drugs

MEDI-GAP Plans
Part D

health plan payment
US Commercially Insured, 2008

Risk adjustment needed everywhere
Medicaid: typical arrangement
Medicaid Risk Adjustment

- Medicaid programs regulated by 50 states, with federal subsidy.
- Many states still offer only one plan option
- Others offer HMOS or PPOs or choice or no choice
- Diverse risk adjustment models
- Prospective versus concurrent models
- Predict individuals or group averages
- Retrospective adjustments
- New enrollee formula
- Challenges of high turnover rates • lack of prior info
- Difficult population to manage
Diverse approaches used in different states for Medicaid

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<thead>
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<th>State</th>
<th>Risk Adjustment System</th>
<th>Individual or Aggregate</th>
<th>Prospective or Concurrent</th>
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<td>CDPS</td>
<td>Aggregate</td>
<td>Prospective</td>
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Source: Winkelman and Damler, 2008
For further information:


Gopffarth, Dirk (2008) “Choosing disease states to include in Germany’s Risk Adjustment Scheme” German Federal Insurance Agency. 9th RAN Meeting in Dublin, Ireland, March.

Winkelman, Ross, and Damler, Rob “Risk Adjustment in State Medicaid Programs” Health Watch. January 2008


Thank you!