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ACTUARIAL SOCIETY OF SOUTH AFRICA

The Consequences of Limited Underwriting in the Healthcare Environment

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Agenda

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1. Insurance principles: Risk rating vs community rating
2. Allowed underwriting vs best practice
3. Consequences of limited underwriting
    a. Claims experience
    b. Case Studies
    c. Managed Care
4. Structural dependencies for continuing viability of the industry

Note: Comments are in my personal capacity and do not necessarily reflect that of my employer

Mutuality / Solidarity

Wilkie:

> "it is important not to get the concepts of mutuality and solidarity mixed up. **Both involve the sharing of losses**, but **only mutuality involves the assessment of risks**.
>
> **Solidarity requires comprehensiveness or compulsion**;
>
> a **private commercial insurance market requires mutuality**."

Source: David Wilkie, 1997, "Mutuality and Solidarity: Assessing Risks and Sharing Losses"

Insurance Principles

Mutuality and risk rating

- Risk rated premiums, by age, etc.
- Full underwriting allowed
- Renewability not guaranteed
- Voluntary participation
- Consumer protection

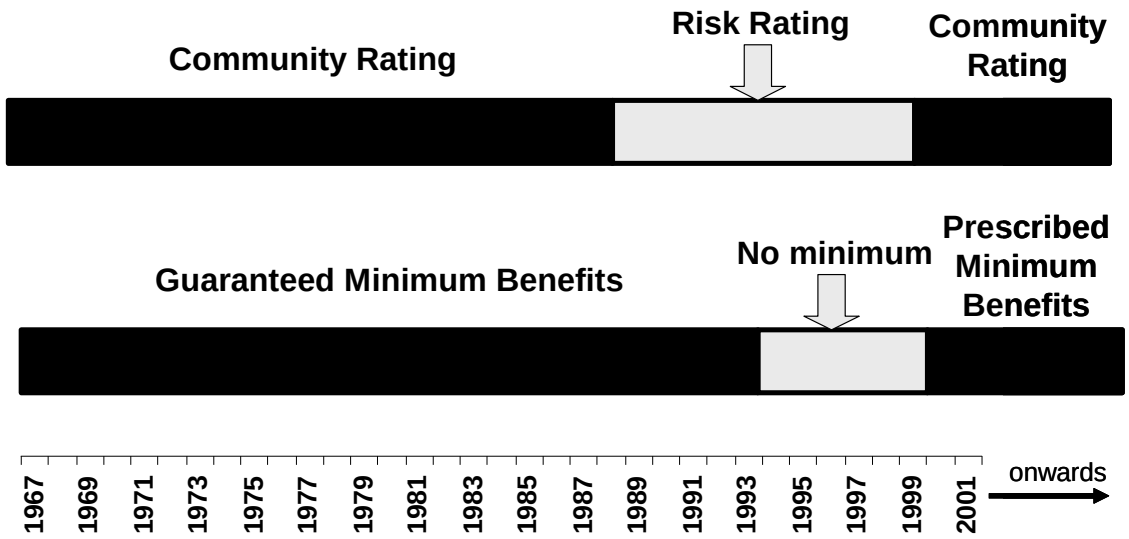
Typically in comprehensive NHI / NHS type environments where health insurance is complimentary

Solidarity and community rating

- Community rated premiums, perhaps by income
- No underwriting
- Guaranteed renewability
- Mandatory participation
- Risk equalisation
- Minimum common benefit package

Typically comprehensive national SHI systems (NHI have the same characteristics)

Solidarity - Mutuality - Solidarity



Source: HD McLeod, "Mutuality and solidarity in Healthcare in SOUTH AFRICA" SAAJ 2005

Case Study: Mutuality in the 1990s

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An analysis by the Department of Health iro the 1990's environment:

- "the history of the medical schemes movement and its regulation shows a drift from solidarity principles which defined the original schemes, to individualising health cover."
- During the early 1990s "**benefits declined** and the **older and sicker membership were excluded** from cover to a greater extent. "
- "By 1999 **no open scheme was permitting anyone over the age of 55 to join as an individual member**. Virtually all open schemes applied **life-time exclusions for pre-existing conditions**"

Source: HD McLeod, "Mutuality and solidarity in Healthcare in SOUTH AFRICA" SAAJ 2005

Case Study: Mutuality in the 1990s

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An analysis by the Department of Health iro the 1990's environment:

- "schemes **age-rated and/or experience rated** their membership without restriction."
- "As such, by 1999 the majority of medical scheme membership was in an environment which **excluded vulnerable groups from cover** (e.g. the old and those with chronic conditions), where medical costs continued to rise (due to the retention of fee-for-service reimbursement) and"
- "where **non-medical costs were driven up** (through profit taking and hidden commission costs)."

Source: HD McLeod, "Mutuality and solidarity IN Healthcare in SOUTH AFRICA" SAAJ 2005

Social Security Pillars

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In social security systems the entitlements to benefits and the degree of risk-pooling are described in terms of pillars:

Pillar 1: **Universal benefits** for all citizens. Funding is typically from general taxes.

Pillar 2: **Contributory environment** above Pillar 1 or as a **substitute for Pillar 1**. It is characterised by strong mechanisms to ensure social solidarity: **income-based cross-subsidies**; **risk-related cross subsidies**; and **mandatory participation**.

Pillar 3: **Discretionary** social security over-and-above minimum levels regarded as essential. Individuals are left to make decisions completely at their discretion. Government is however still required to ensure that basic **consumer protection** is in place.

Source: HD McLeod, "Mutuality and solidarity IN Healthcare in SOUTH AFRICA" SAAJ 2005

Hybrid designs – in practice

Mutuality with solidarity principles

- Limited risk rating allowed
- Limited underwriting, such as:
  - Portability
  - Open enrolment
  - Guaranteed renewability
  - Waiting periods and pre-existing conditions can be extensive
- Minimum prescribed benefits uncommon
  - May be encouraged through tax subsidies

  (Often benefits not covered in the national health system, e.g. dental.)

Hybrid designs – in practice

Mutuality with solidarity principles

- Limited risk rating allowed ✗
- Limited underwriting, such as:
  - Portability ✓
  - Open enrolment ✓
  - Guaranteed renewability ✓
  - Waiting periods and pre-existing conditions can be extensive ✗ ✓
- Minimum prescribed benefits uncommon ✗
  - May be encouraged through tax subsidies

(Often benefits not covered in the national health system, e.g. dental.)

✗ Not in RSA

✓ In RSA

Underwriting allowed for medical schemes in South Africa

- 3 month general waiting period
- 12 month condition specific waiting period / pre-existing condition exclusions
- Late joiner penalty
- Only change plans at 1 point in the year

  (OR must allow option changes once per year without underwriting)

Underwriting best practice in a risk rated environment

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- Group
  - No underwriting, if
    - participation is acceptable, e.g. > 90% join ✗
    - profile is acceptable ✗
  - Min group size; limited u/w applied for small groups ✗
  - Underwriting applied for lives not joining at 1st opportunity ✗
    - e.g. 1st joining company, or spouse joining late, or child registered late
  - Limited u/w may be applied if change cover/ policy conditions ✗
  - Experience rating, using credibility theory ✗
- Individual
  - Full underwriting and risk rating ✗

✗ Not in RSA

✓ In RSA

Underwriting best practice in a risk rated environment

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- Questionnaire & full underwriting

Not in RSA

  - Medical tests, health status and history, family history, age, etc.
  - Testing req's based on a grid, to ensure affordability of testing

Age	Plan A	Plan B	Plan C	Plan D
Upto 5 years	No	No	No	No
6 - 21 years	No	No	No	Tests A
21 - 45 years	No	No	Tests A	Tests A
46 – 55 years	No	Tests A	Tests B	Tests B
55+ years	Tests A	Tests B	Tests B	Tests B

Tests A	HIV, CREATININE, Etc.
Tests B	HBA1C, LIPID PROFILE, TMT, LFT With GGT, ECG, CREATININE, etc

  - Actions:
    - Decline
    - Restrict benefits
    - Apply pre-existing condition exclusions (min 12 months; for rest of life)
    - Apply general waiting periods (min 3 months)
    - Apply loading to premium
    - Accept at standard terms

Underwriting best practice in a risk rated environment

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- Questionnaire & full underwriting ✗
  - Applied at inception, renewal and/or change in policy conditions
- General waiting periods
  - Not for accidents ✓
  - 3 months minimum ✓ ✗
  - 24 months for elective procedures and maternity ✗
- Pre-existing condition exclusions
  - 36 months, or lifetime ✓ ✗

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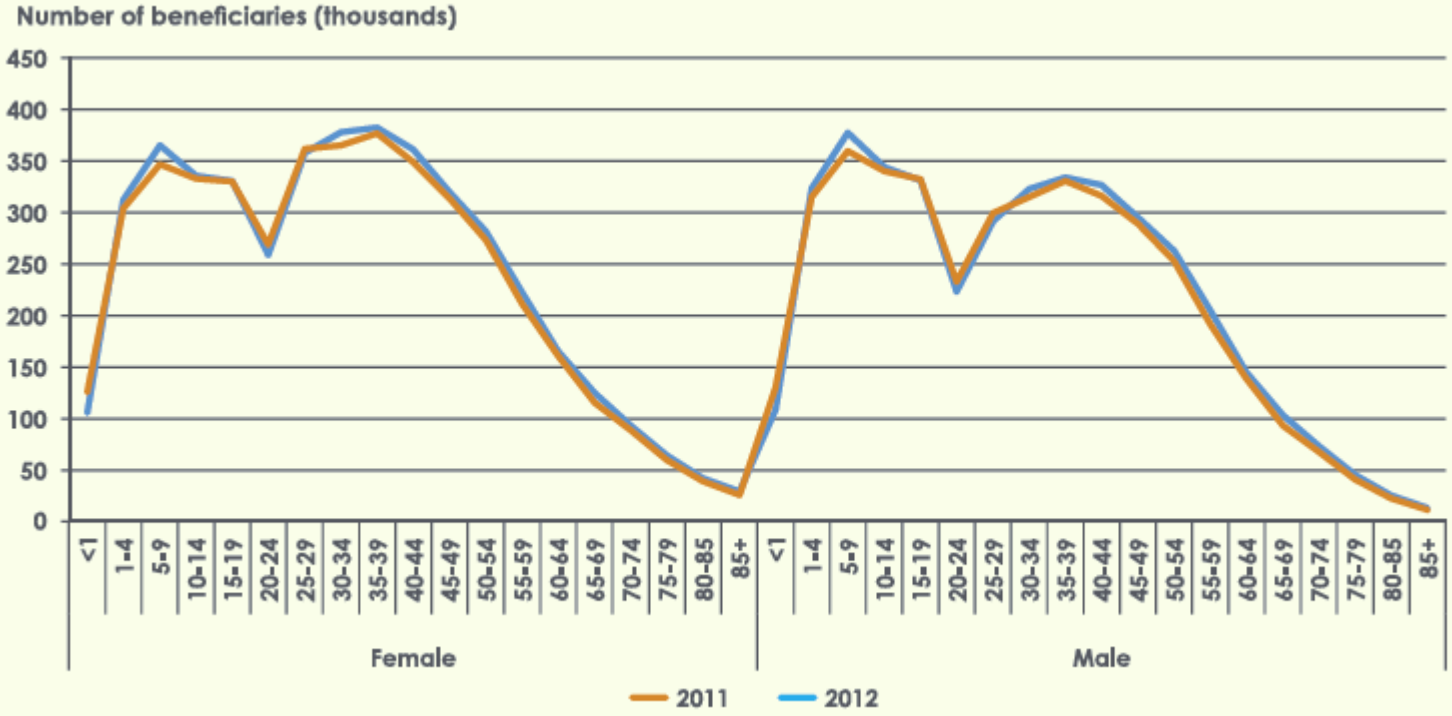
Consequences of limited underwriting

- Anti-selection, missing lives and resultant higher claims experience
- Actuarial death spiral and closing schemes
- Perverse incentives
- Innovation
- Growth of managed care
- Risk management techniques extended to utilise benefit design, marketing and broker commission

Consequences: Missing lives



Source: CMS 2012-2013 Annual Report

Consequences: Missing lives

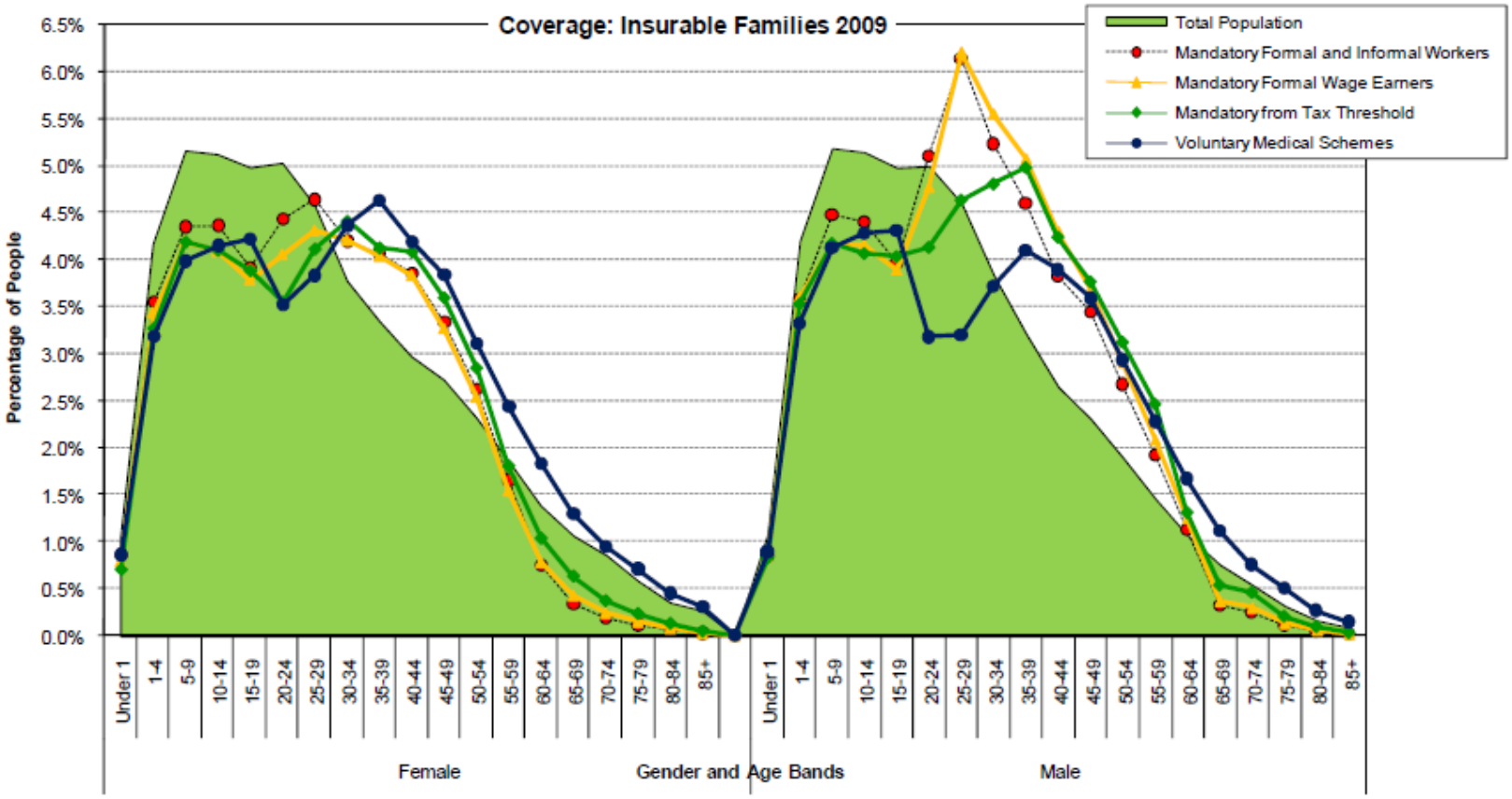


Figure 4: Standardized Age Profiles for Phased Implementation of Mandatory Insurance

Source: McLeod, H., Grobler, P., & van der Berg, S. (2010). Preliminary Estimate of NHI Costing in 2009 Rand Terms

Consequences: Maternity anti-selection

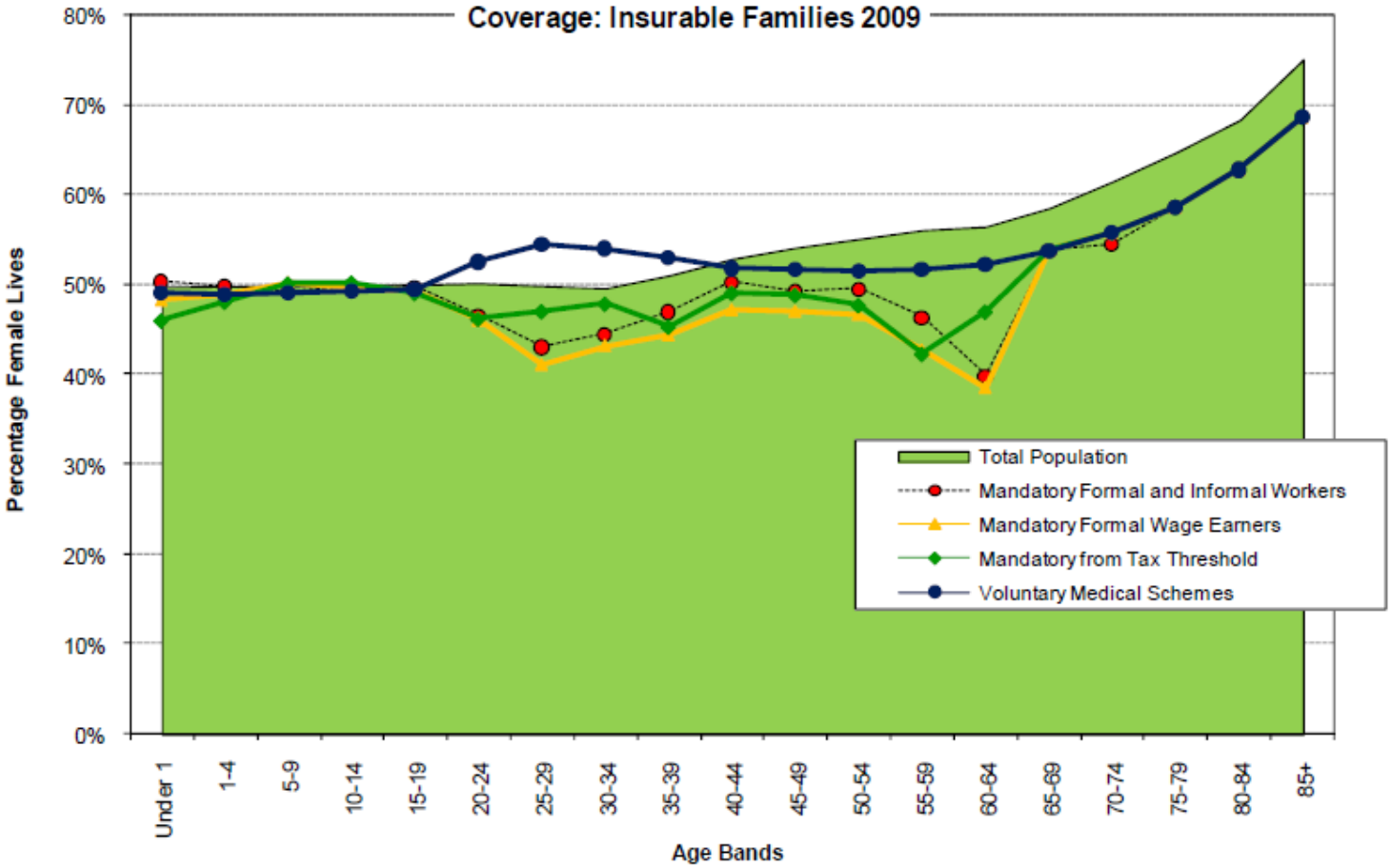


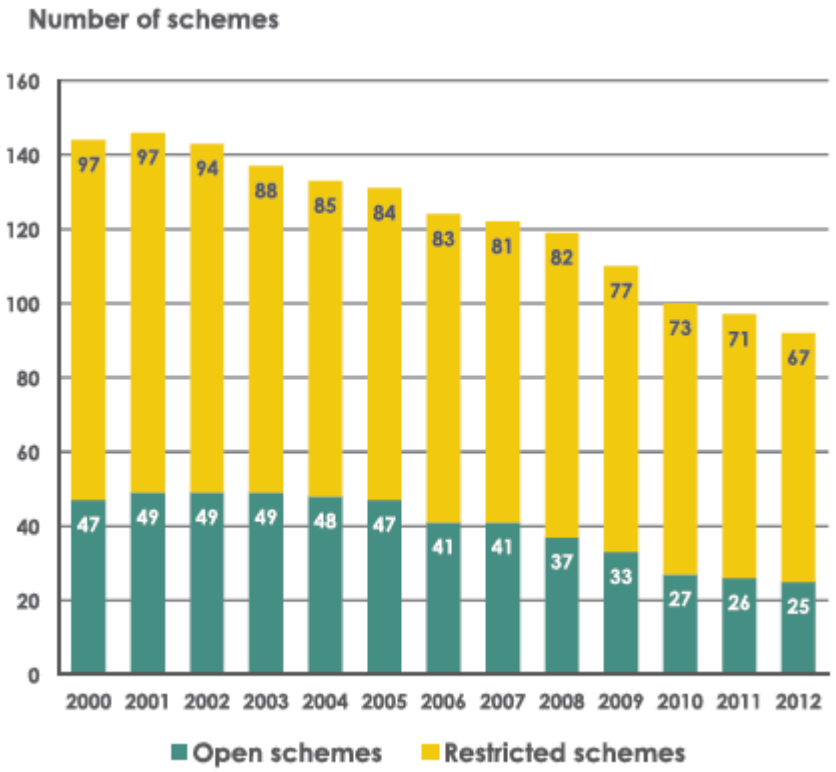
Figure 5: Proportion of Female Lives during Phased Implementation of Mandatory Insurance

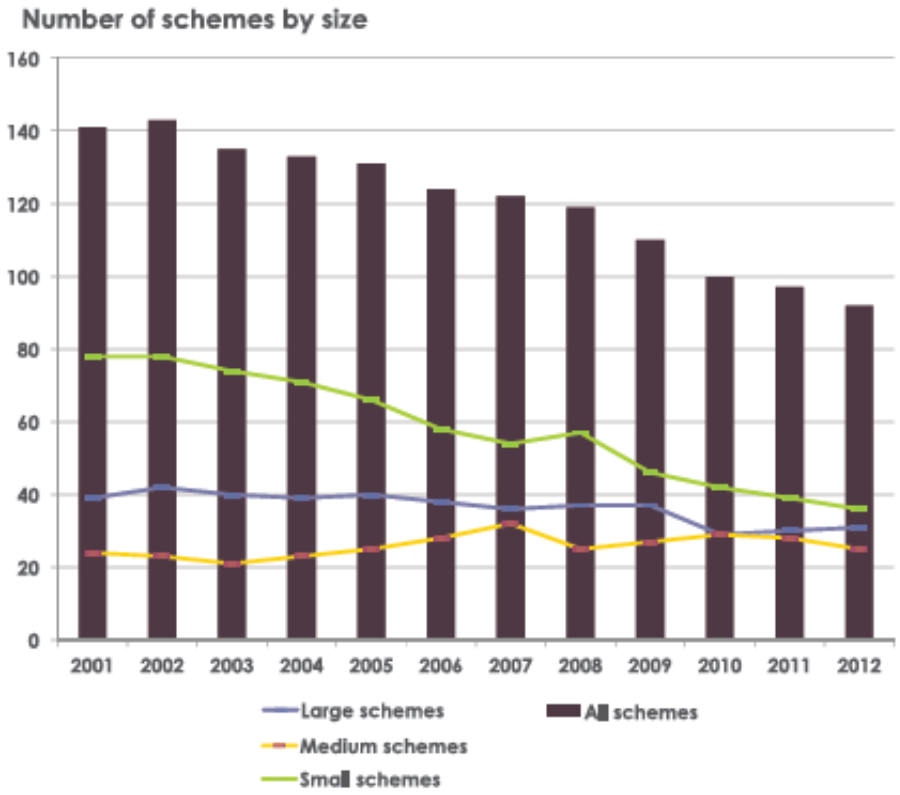
Source: McLeod, H., Grobler, P., & van der Berg, S. (2010). Preliminary Estimate of NHI Costing in 2009 Rand Terms

Consequences: Fewer dependants

Source: CMS 2012-2013 Annual Report

Consequences: Closing schemes





Source: CMS 2012-2013 Annual Report

Consequences: Claims experience

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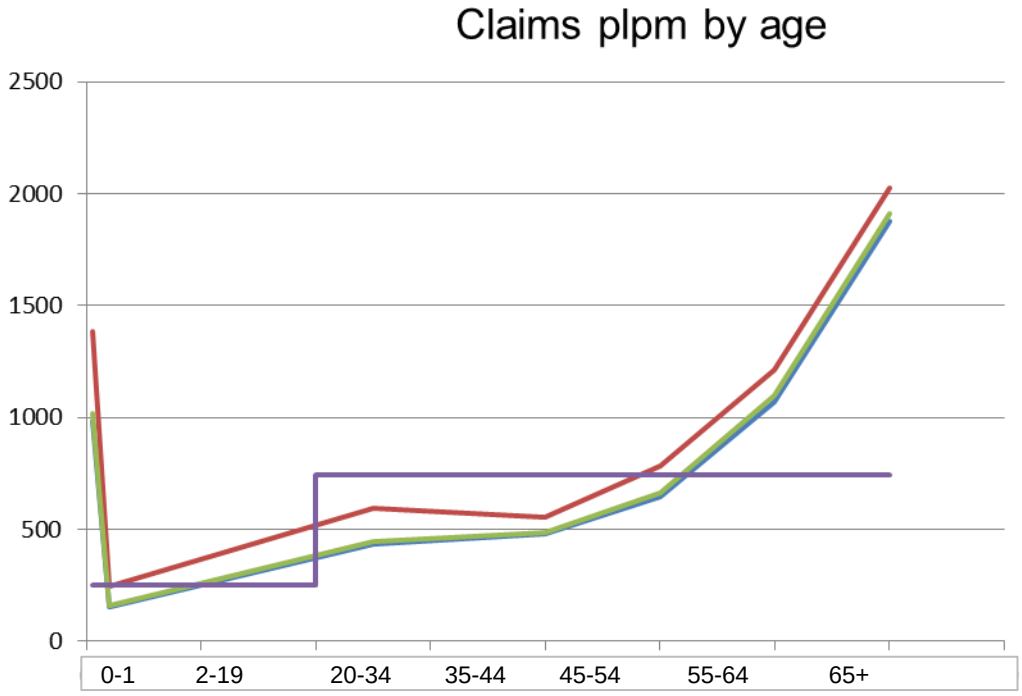
McLeod, Grobler & vd Berg state:

- Prices of minimum benefits 14% lower if mandatory cover is applied, allowing for age and gender only
- Including maternity and chronic anti-selection effects; "prices of minimum benefits are some **17% to 23% more expensive** than they could be under… mandatory cover"

Source: McLeod, H., Grobler, P., & van der Berg, S. (2010). Preliminary Estimate of NHI Costing in 2009 Rand Terms

Consequences: Claims experience

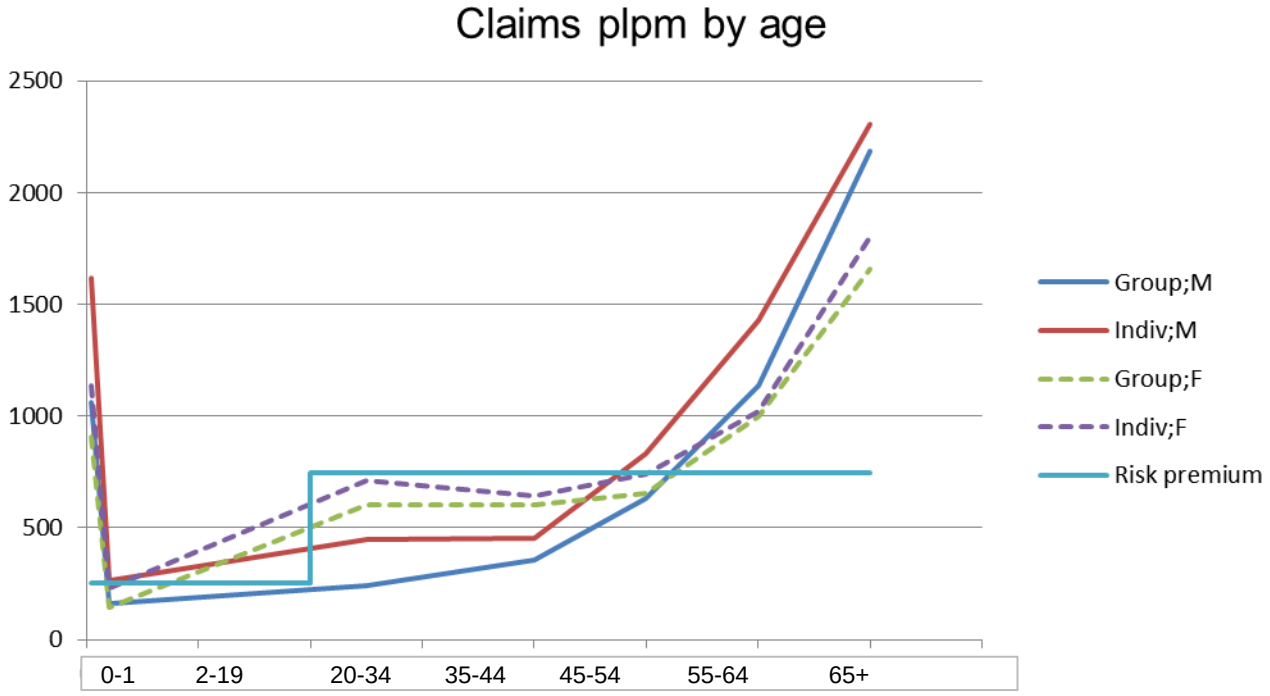
- Medscheme: 1m lives used to assess claims experience by groups vs individual, risk adjusted



U/w should result in claims levels equivalent to compulsory group business

Consequences: Claims experience

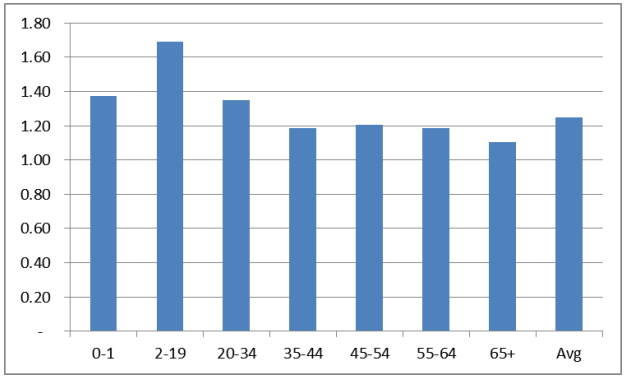
- Medscheme: 1m lives used to assess claims experience by groups vs individual, risk adjusted



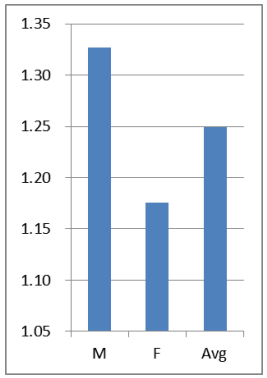
Consequences: Claims experience

- Index: Individual vs group claims experience
  - risk adjusted
  - hospital claims only for similar benefits

	Avg
0-1	1.37
2-19	1.69
20-34	1.35
35-44	1.19
45-54	1.20
55-64	1.19
65+	1.11
Avg	**1.25**



	Avg
M	1.33
F	1.18
Avg	**1.25**



	2010	2011	2012
Avg	**1.25**	**1.27**	**1.23**

- But, varies considerably, up to 300% in a low cost option!!

Case Study: Option movements each year on 1 January

- Members are able to change options on 1 January each year
- This analysis considers the existing member movements, the exits and new joiners over 31 December to 1 January
- Age is used as a proxy for expected claims impact:

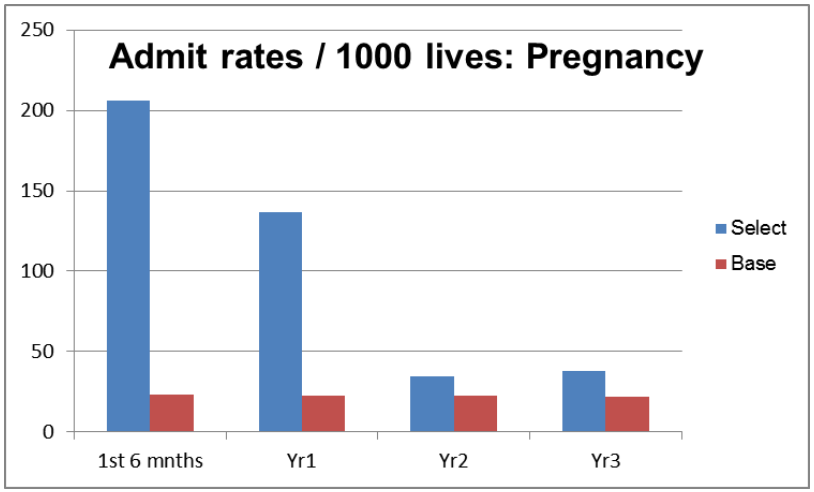
Scheme ID	Type	Year-2	Year-1	Year 0
1	Open	+0.0%	+0.1%	+0.5%
2	Open	+0.0%	-0.1%	+1.9%
3	Open	+0.7%	+0.7%	+1.7%
4	Open	+0.4%	-0.6%	+0.1%
5	Open			+0.0%
6	Closed			-0.5%

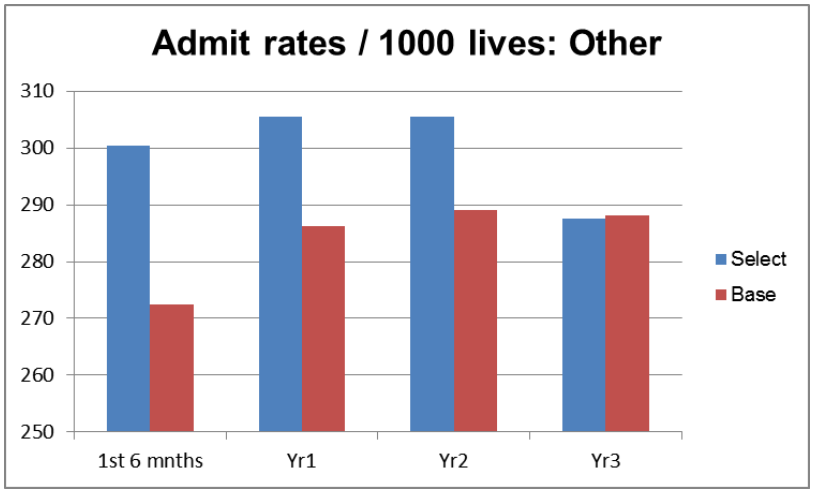
- Option changes do have an impact, although minor apart from specific cases of amalgamations or a struggling scheme

Case Study: Impact of removing entire underwriting for 6 months

- 15 300 lives joined during underwriting concession period;

  most in the last 2 months
- 50% left within 3 years; most within 1 year
- Avg member age 35, but increasing rapidly
- Hospital admission rates show clear anti-selection





- Cost impact estimated at **10% of contributions** over the 3 year period

Consequences: Managed care

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- Managed care skills and resources developed
- US literature has varying messages:
  - Milliman suggests a very large difference between 'loosely managed' and 'well managed' systems; approx. 30% to 60% reduction in claims experience
  - Others suggest only a saving due to purchasing activities and not utilisation management
- Medscheme experience: does save costs and there are potentially large savings in focused areas
  - e.g. reducing back and neck surgery through intense out-of-hospital efforts = 20% reduction in admissions

Consequences: Managed care

Medscheme results

	Description	Contributing examples	Annualised saving
1.	Hospital benefit management		
	1. Declined authorisations		R 46,593,000
	1. Repricing of hospital claims		R 67,373,000
	Examples of funding policies and interventions		
	1. TAVI procedure (2 cases)		R 600,000
	1. Breast reduction declines due to criteria not met		R 7,920,000
	1. Laparoscopic assisted vaginal hysterectomy appropriate code management		R 105,000
	1. Spinal fusion w/wo instrumentation	R 29,070,000	
	1. Rationalisation of codes for hospitalisation of back and neck pain	R 9,578,000	
	1. Surgical removal of impacted wisdom teeth under GA clinical policy	R 2,630,000	
	1. Special case: Pompe disease	R 401,385	
	1. RPL codes for gynecological laparoscopy	R 33,600	
	1. Neck of femur fractures – PMB level of care	R 614, 400	
	1. Cataract procedures w/wo insertion of lens – appropriate coding	R 3,852,000	
	1. Laparoscopic cholecystectomy	R 1, 551, 000	
	1. LOS reduction in admission for chronic conditions (Asthma, diabetes, hypertension, cardiac failure)	R 19,380,000	
2.	Medicine benefit management		
	1. Declined authorisations (rejections)		R 109,575,000
	1. Authorisation interventions		R 22,557,000
	1. Medicine Price List (MPL) impact		R 64,479,000
	1. Medicine Exclusion List (MEL) impact		R 31,112,000
	Examples of funding policies and interventions (included in 2.2 above)		
	1. Allergic rhinitis – authorize cost effective agents only	R158,957	
	1. Nasal corticosteroids – authorize cost effective agents only	R481,186	
	1. Gastro-oesophageal disease Intervention: authorize cost effective agents only and lowest possible starting dose	R2,385,474	
	1. Fosrenol (for chronic renal failure) management: appropriate in exceptional cases only	R 72,798	
	Description	Contributing examples	Annualised saving
	1. Daonil: non substitutable product (Non MPL product). Intervention: Alternatives authorized at appropriate dose	R 262,604	
	1. Keppra for epilepsy: clinical criteria applied	R 44,076	
	1. Statins for hyperlipidaemia: Interventions for cost effectiveness and appropriate dose	R 3,956,767	
3.	Oncology management		
	Examples of funding policies and interventions		
	1. Nexavar	R 2,929,492	
	1. Avastin	R 60,904,967	
	1. Erbitux	R12,196,377	
	1. Herceptin		R8,655,644
	1. Other high cost agents, Mabthera, Velcade, Torisel, Vidaza, Tykerb, Lapatinib		
4.	Optical benefit management		R 43,045,000
5.	Dental benefit management		R 28,673,000
6.	Beneficiary risk management		R 40,548,000
7.	Examples of high cost managed care funding declines where members applied for ex gratia		
	1. Nexavar	R128,163	
	1. Breast reduction criteria not met (1 case)	R51,602	
	1. Herceptin (3 cases)	R 733,265	
	1. Soft fusion device	R 104,280	
	1. Avastin	R71,478	
	Total		R471,235,644

Measurable savings: Safely say claims 5% to 10% lower, a ROI of >200%

Not Directly Measurable

Halo effect: past savings embedded in current levels

Hospital case management of:

- Length of stay (LOS) and level of care (LOC),
- Change from codes requested to approved during stay in hospital.
- Management of co-morbidities.
- Referrals for additional managed care interventions.
- Negotiation of LOC fees.
- High cost case micromanagement

Codes changing from initial to final authorisation

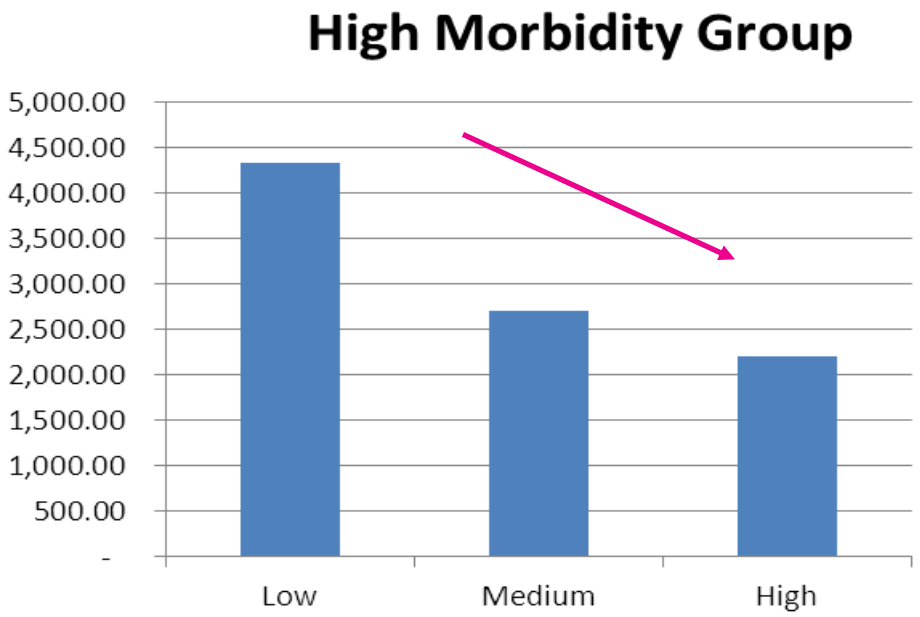
Chronic medicine management savings during initial application and updates.

Ongoing provider behaviour change due to prior understanding of the funding rules

Ongoing value added by professional staff

Coordination of Care

Impact of the supportive coordination of care



Halve the costs by moving from low to high co-ordination of care

Johns Hopkins Adjusted Clinical Group® (ACG®) System Measures

Results of general practitioner (GP) network management

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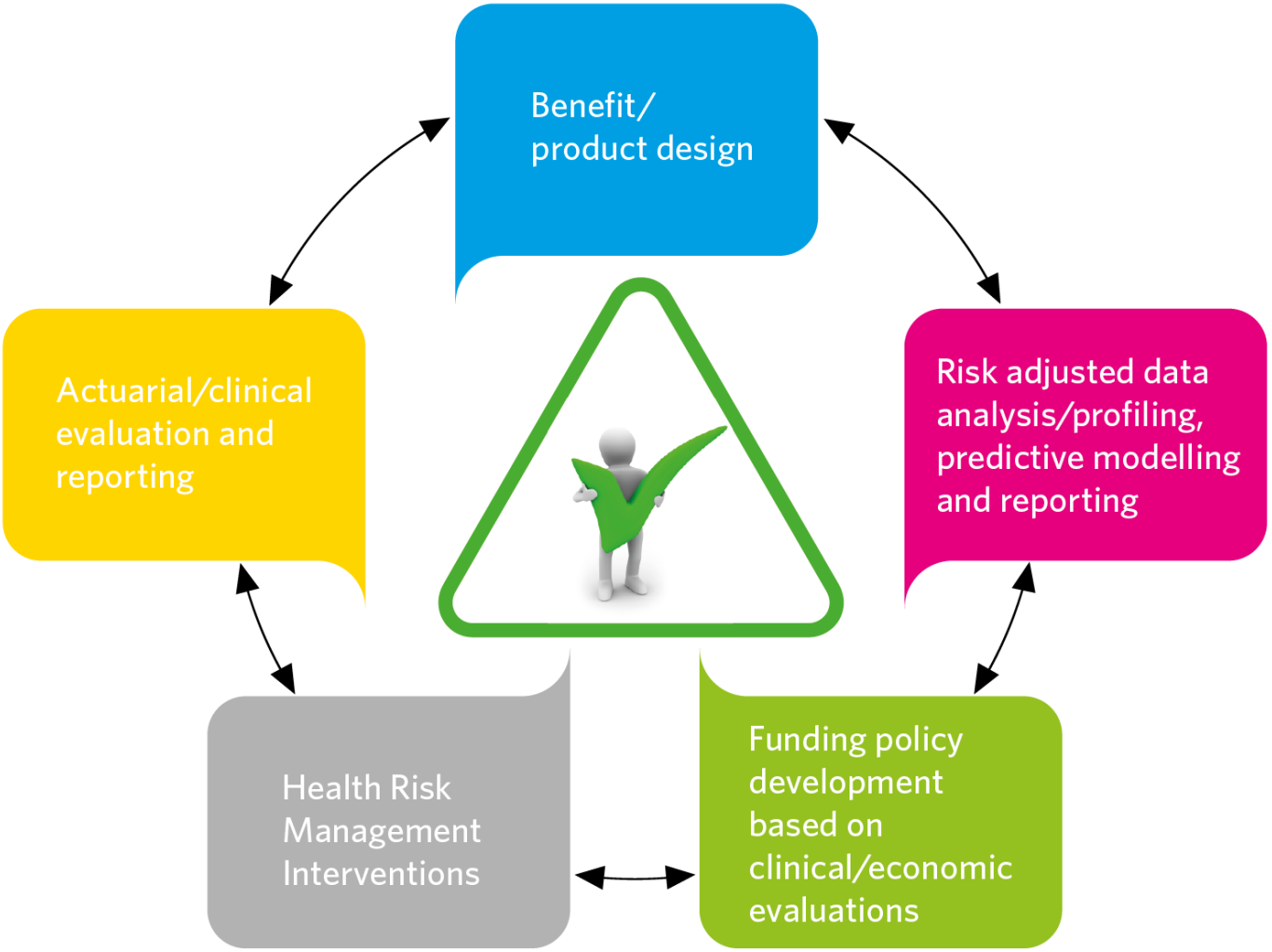
Quality performance results

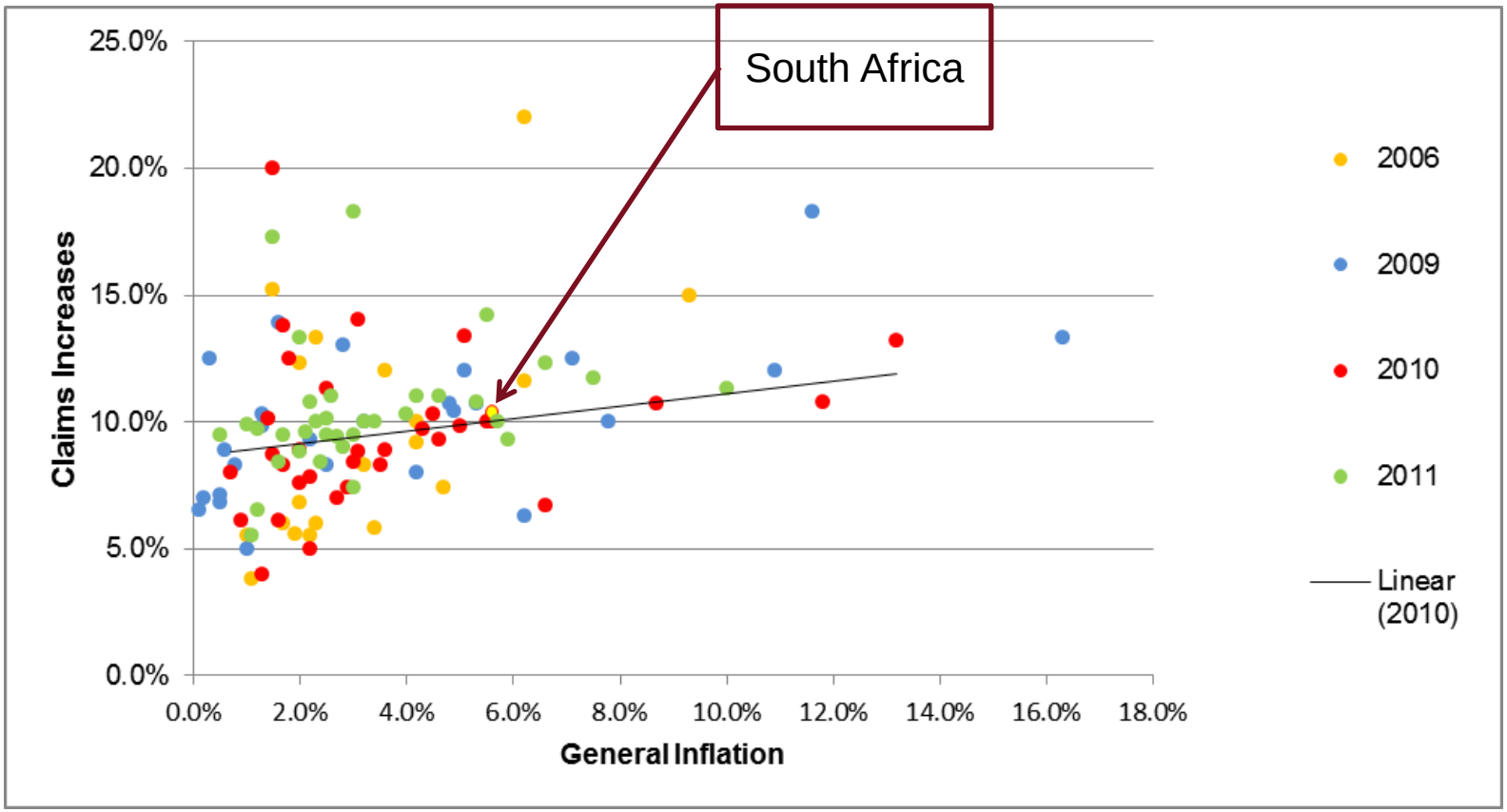
Group	Quality measure	Year 0: Prior to implement-ation	Year 1: Post implement-ation	Change
Diabetes	HbA1C coverage	46.7%	50.7%	3.9%
Asthma	Adherence to chronic asthma medication	71.9%	76.1%	4.1%
Cardiac	Congestive cardiac failure admissions	9.2%	4.6%	-4.6%

Improved quality of care

Consequences: Actuarial involvement in managed care arena



International Claims Increase Experience



Source: Towers Watson Global Trends Report 2012
Each dot is a country's average claims increase

Final Comments

- The industry's contribution increases are not out of line with international experience
- The industry has done well to remain viable given the regulatory incomplete dispensation

Final Comments

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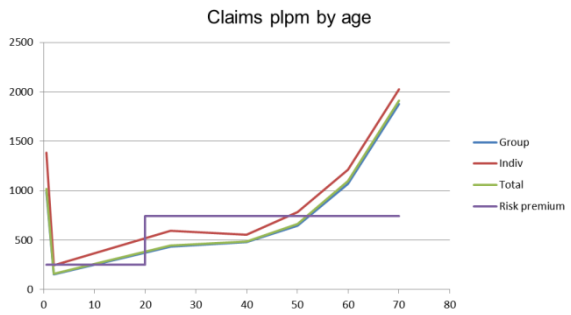
- But, the continuing viability of the industry is structurally dependent upon:
  - Consumer fear of financial ruin and physical/mental ruin
  - Consumer perception of the quality of State hospitals and the fear of being admitted to one
  - Affordability of medical schemes
  - Tax subsidies
  - Irrational consumer behaviour
  - Consumer apathy / ignorance
  - Non-core product offerings, such as loyalty
  - Using other available risk management techniques; benefit design; marketing; broker commission via linked products
  - Managed care

Final Comments

Structural dependence on all of the above, but particularly on…

- Group business
  - Employer subsidies
  - Employer compulsion

    in employment contracts



Restricted schemes:
45% of industry

Open schemes:
Actual Medscheme results,
assume Discovery 85% groups,
rest 30% groups

Combined:
80% group business in the industry(?!)

  - Group business can be sustainable in the current limited underwriting incomplete regulatory framework.

Final Comments

Beware of a tipping point where employer group business changes to voluntary individual business!

Once it starts, we'll see an actuarial death spiral for the medical scheme *market*.

We will then need to quickly move to either:

- a proper voluntary mutuality (pillar 3) dispensation with the State protecting the vulnerable or
- a proper compulsory solidarity (pillar 2) dispensation.

Best to fix it now.

Thank You

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