Where are we spending vs where we need to spend to improve health?

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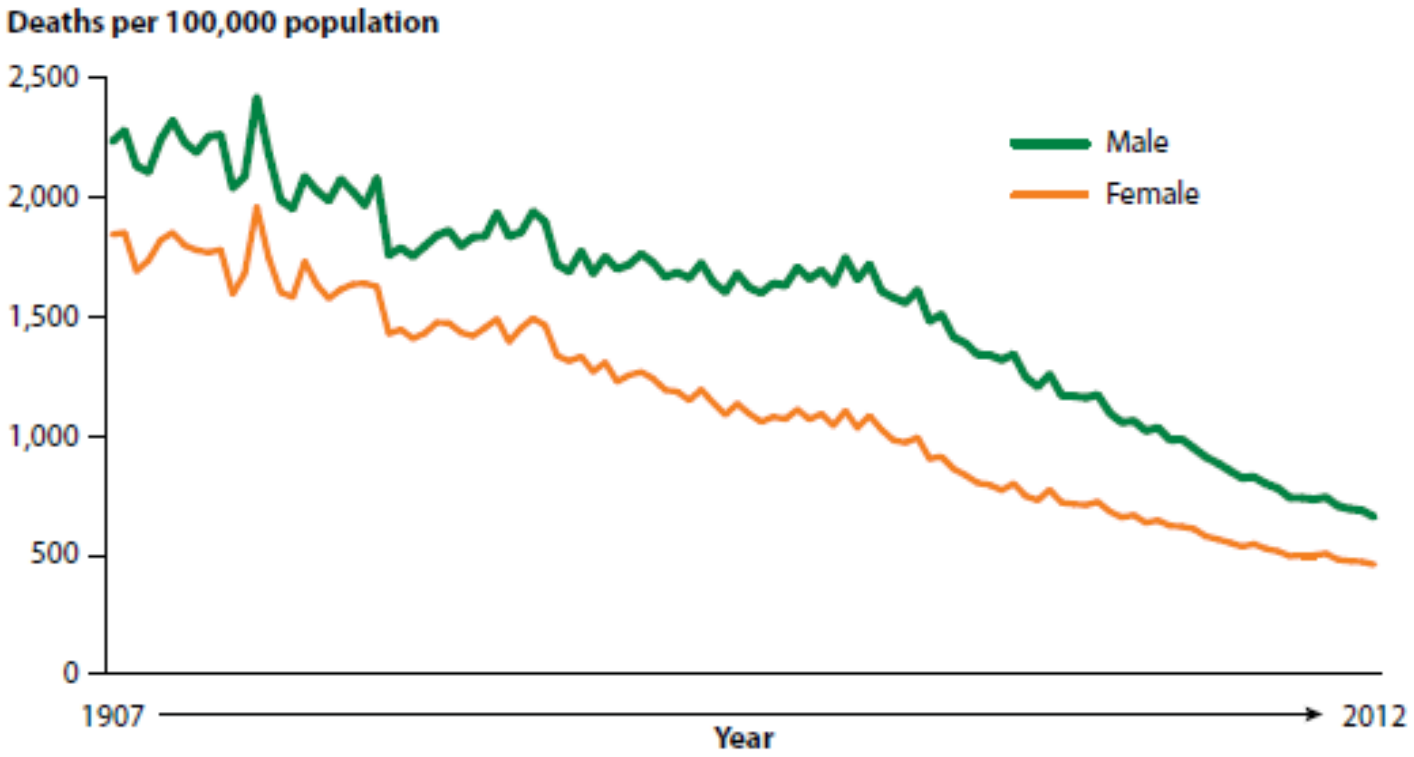
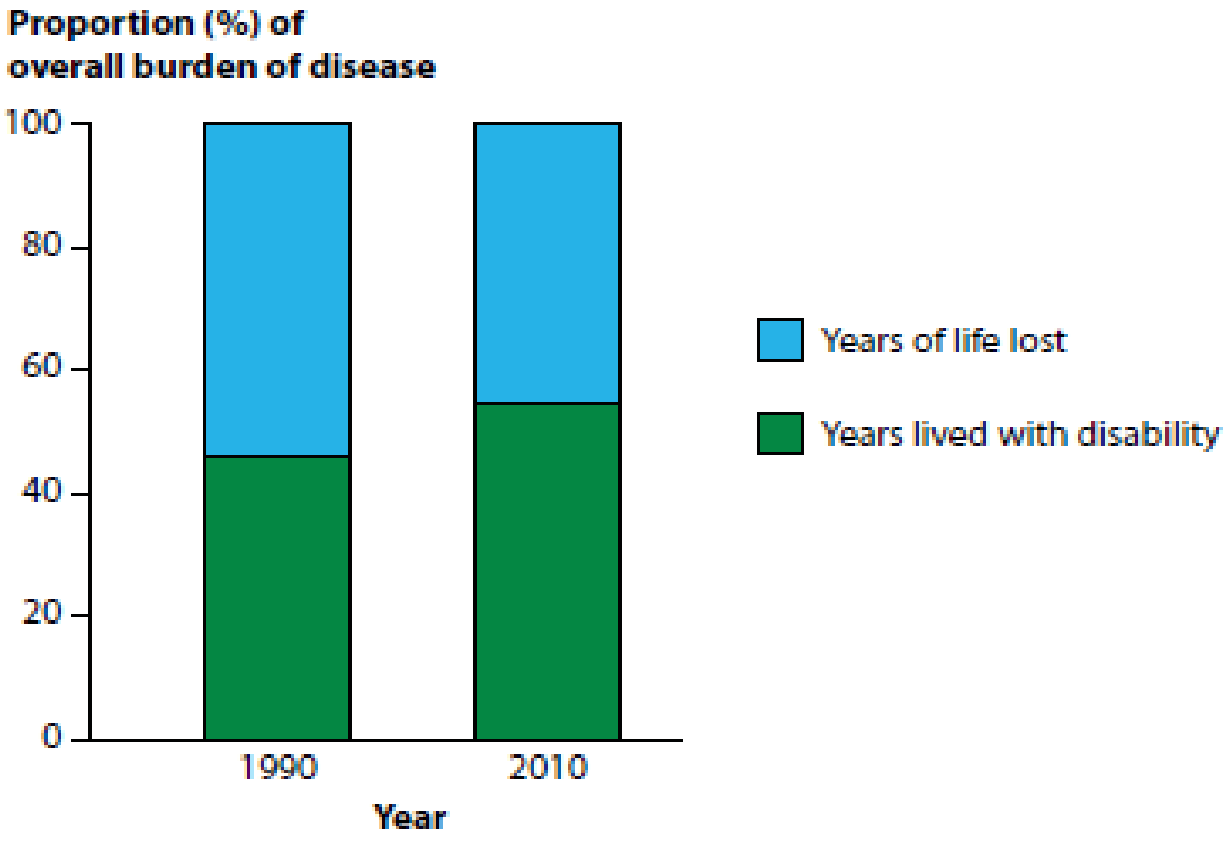
CENTRE FOR CHRONIC DISEASE PREVENTION

Life is longer, but is it better?



Sources: ABS 2013d; AIHW 2013c.

Age-standardised death rates, by sex, 1907–2012



Source: AIHW analysis of IHME 2013.

Proportion of overall burden of disease due to premature death and health loss, Australasia, 1990 and 2010

Total DALYs, Australia 2011

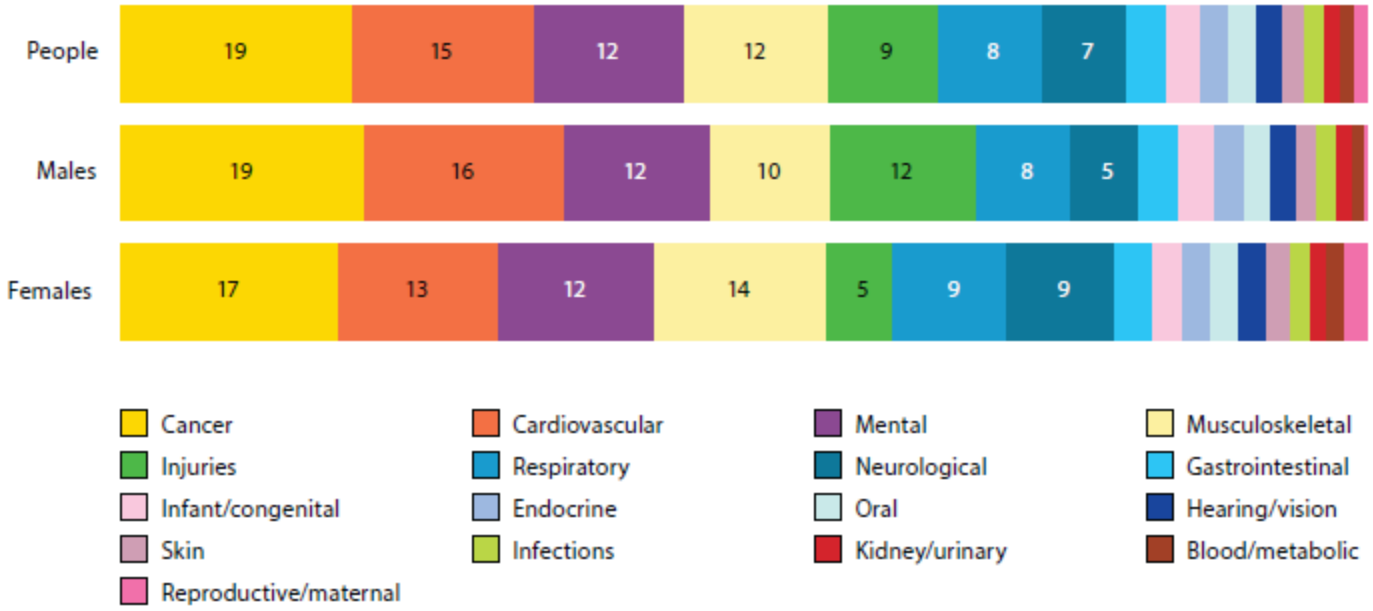
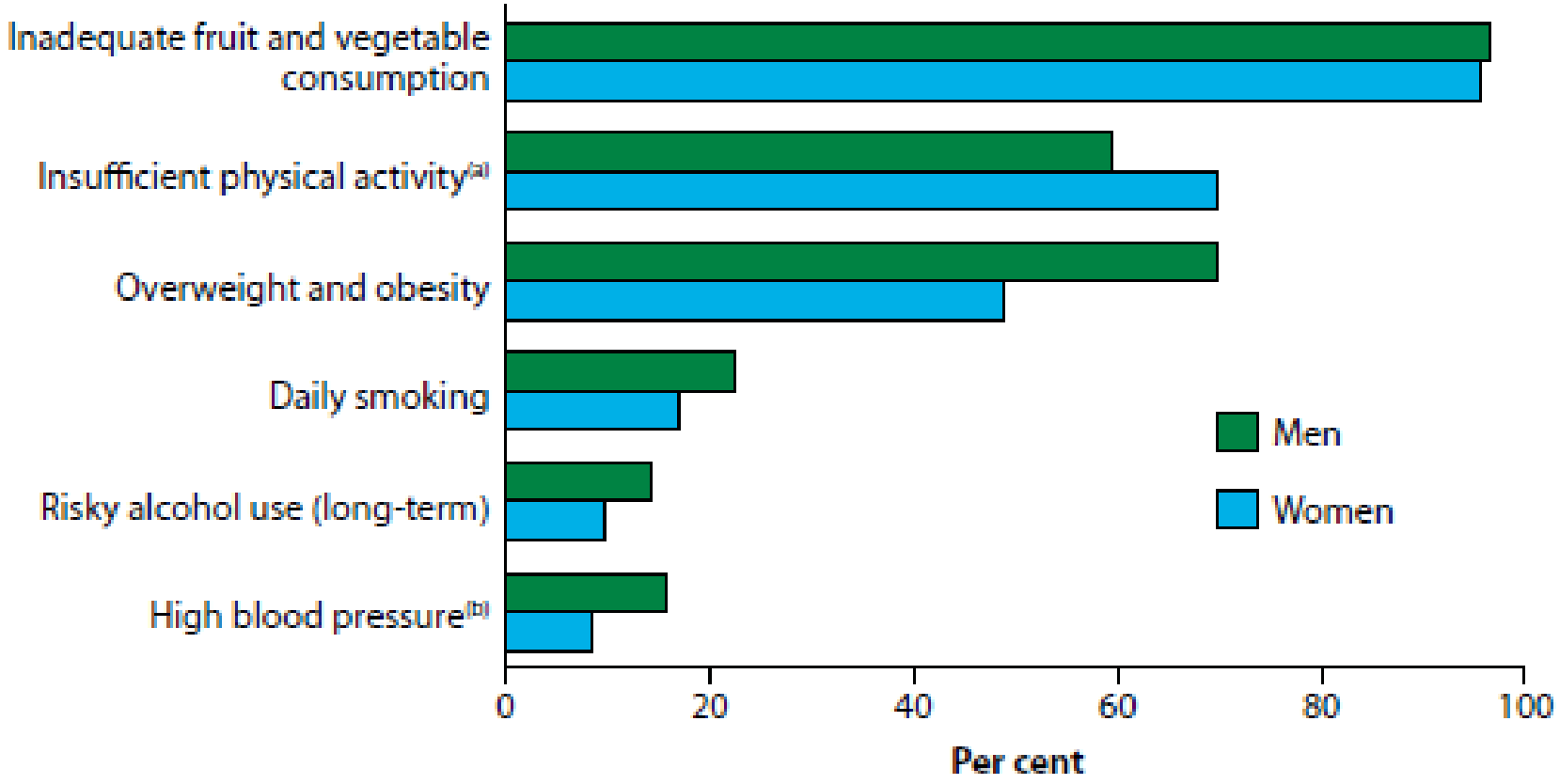


Figure 3.3: Proportion (%) of total burden, by disease groups and sex, 2011

Australian Burden of Disease Study: impact and causes of illness and deaths in Australia 2011

Health behaviours of working age Australians



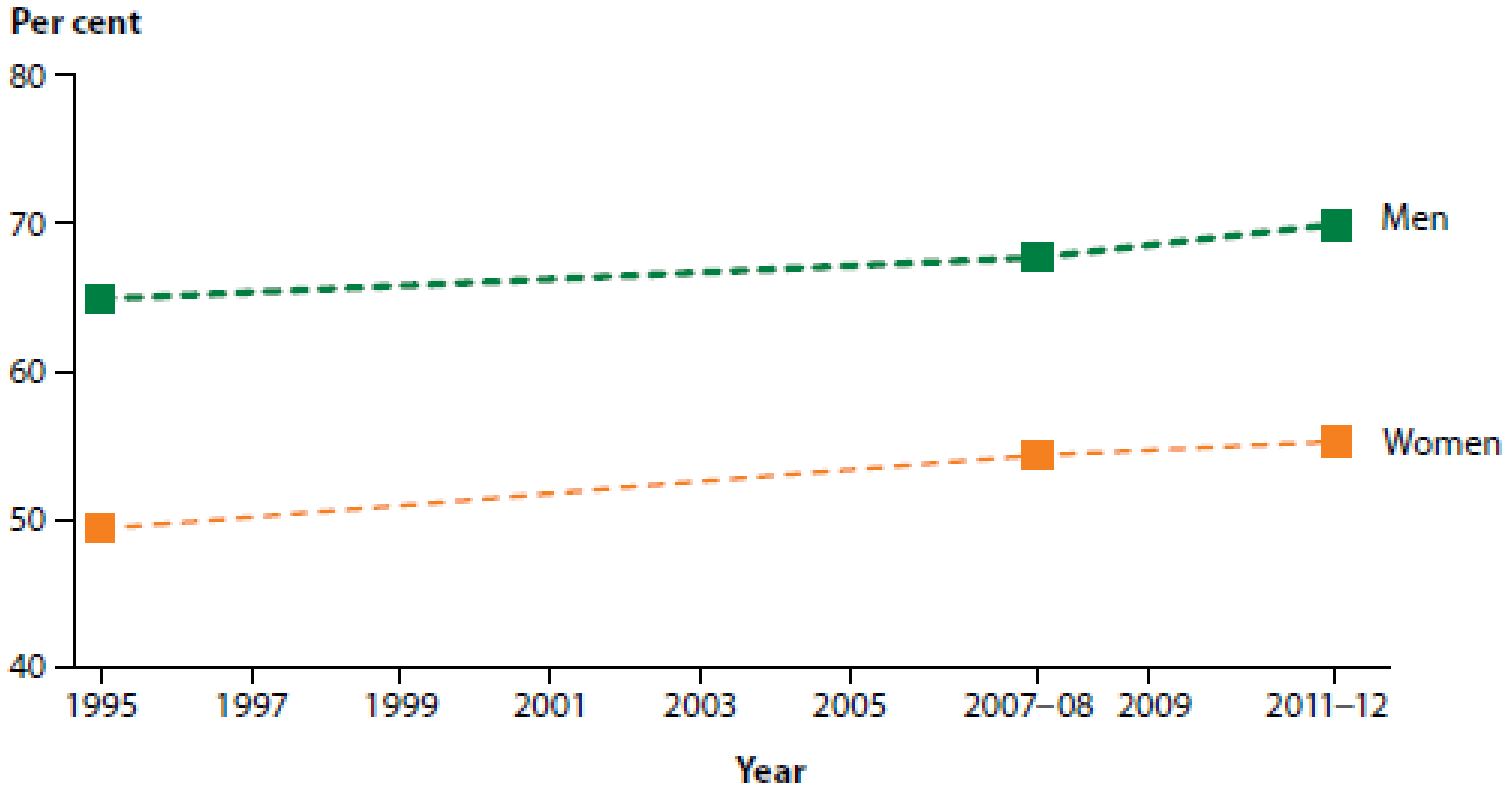
(a) Includes all people reporting sedentary or low activity.

(b) Defined as blood pressure of 140/90 mmHg or higher.

Sources: AIHW analysis of ABS 2013a, 2013b.

Prevalence of selected health risk factors in people aged 25–44, by sex, 2011–12

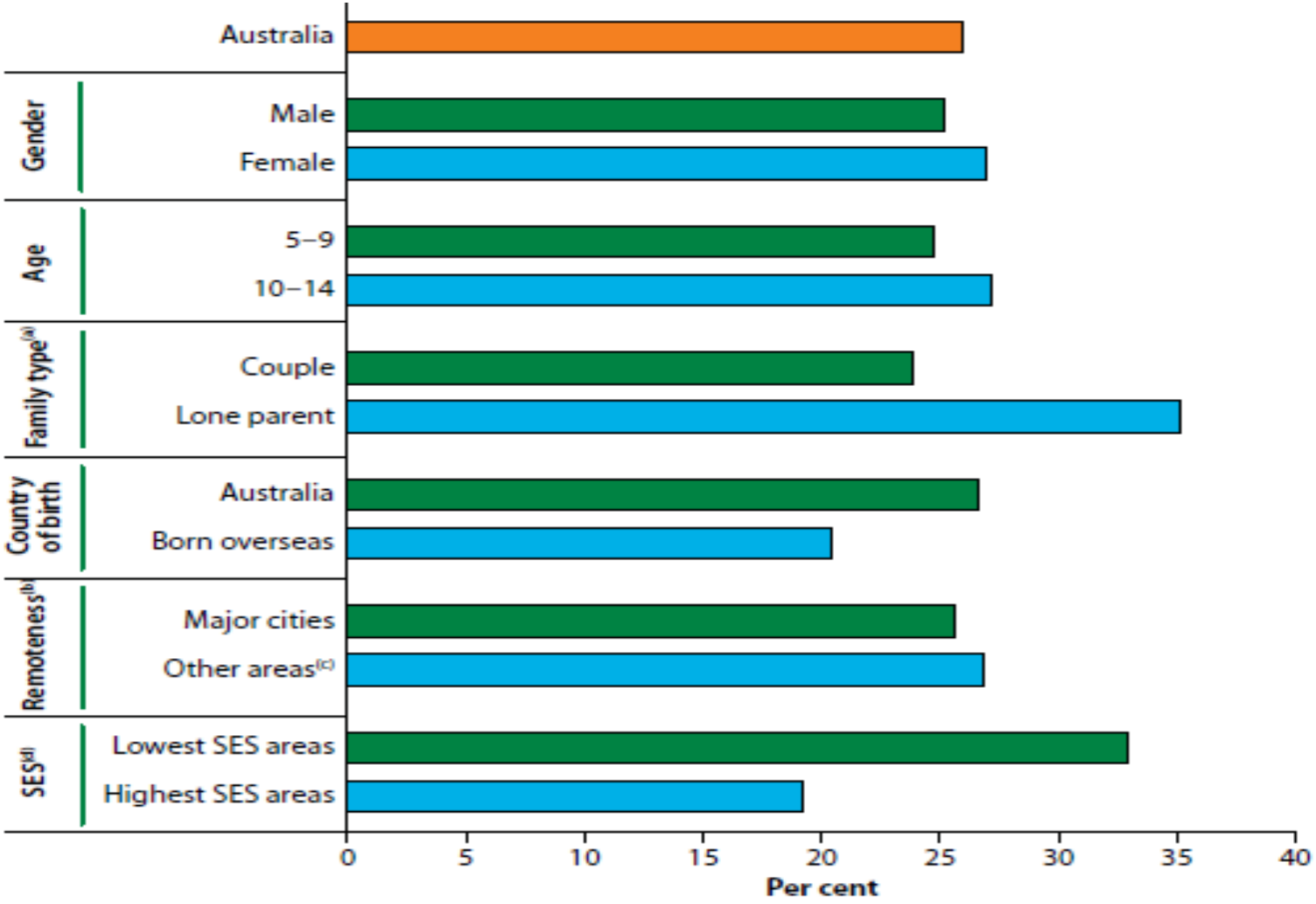
We’re getting fatter



Source: ABS 2009a: Table 17; ABS 2013b: Table 5.

Age-standardised rate of overweight or obesity, people aged 18 and over, by sex, 1995 to 2011–12

Overweight Children

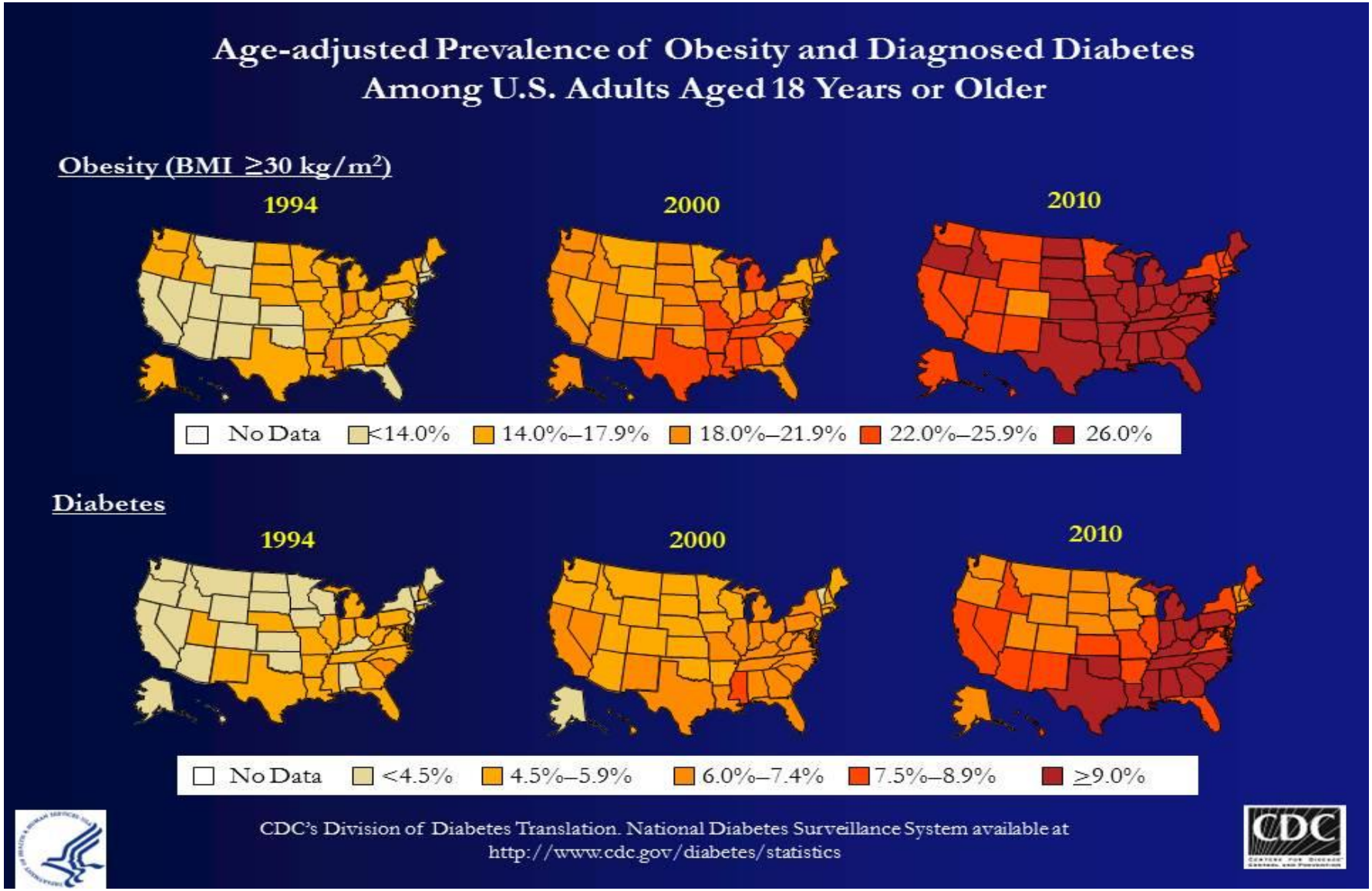


(a) Includes families with children aged less than 15 years only, and families with children aged less than 15 years and older.
(b) Based on 2011 Australian Statistical Geographic Standard.
(c) Other areas include *Inner regional*, *Outer regional*, and *Remote* areas.
(d) Based on 2011 Index of Relative Socio-economic Disadvantage.

Source: ABS 2013c.

Overweight and obese children aged 5–14, by population groups, 2011–12

Diabesity in the USA



Health expenditure

Health is an expensive business: in 2011–12, health expenditure in Australia was estimated at

$140.2 billion, or 9.5% of gross domestic product (GDP), compared with $82.9 billion in 2001–02 and

$132.6 billion in 2010–11 (AIHW 2013b).

Almost 70% of total health expenditure during 2011–12 was

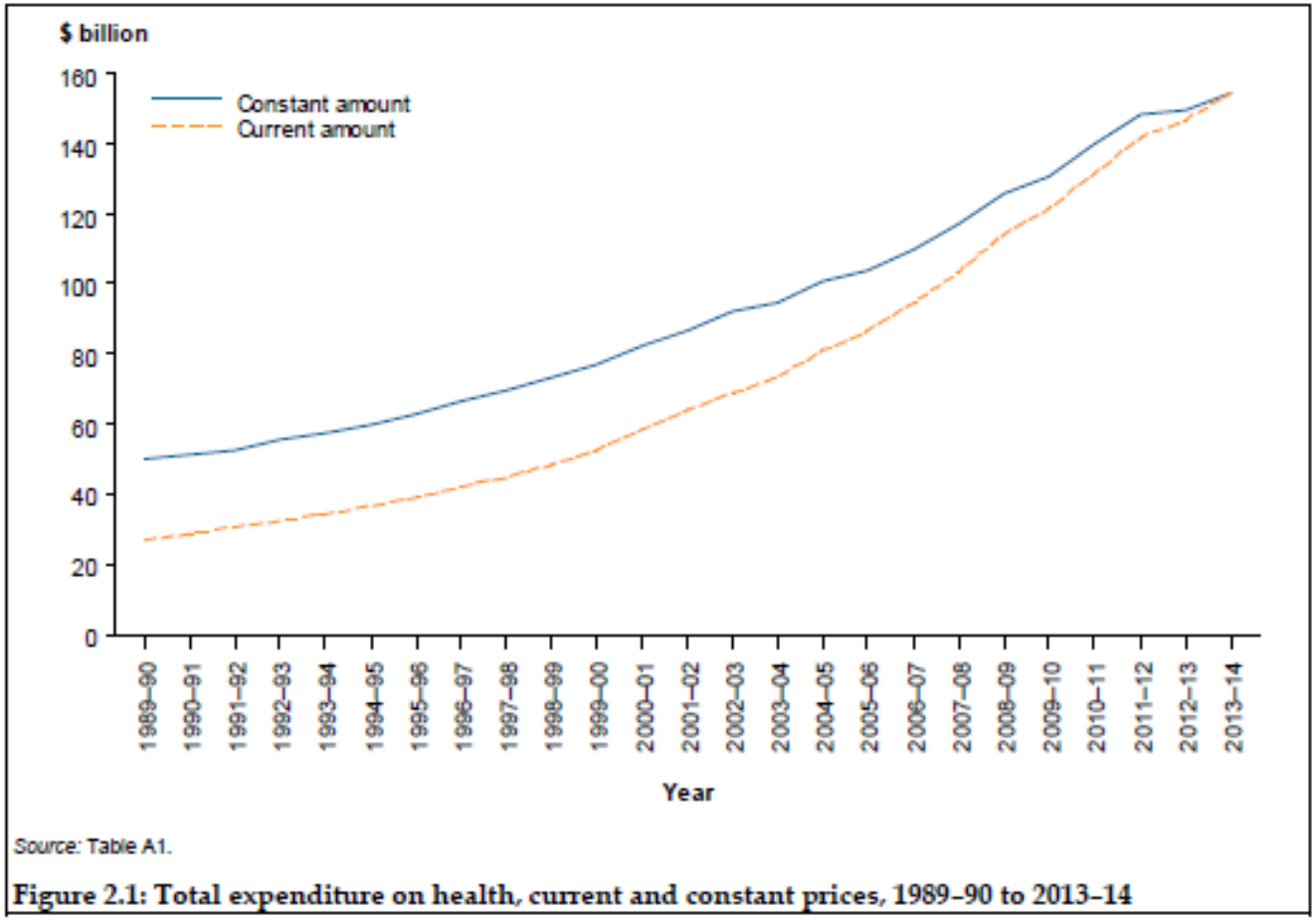
funded by governments, with the Australian Government contributing 42.4% and state and territory

governments 27.3%. The remaining 30.3% ($42.4 billion) was paid for by patients (17%), private health

insurers (8%) and accident compensation schemes (5%).

AIHW 2014. Australia's health 2014. Australia's health series no. 14. Cat. no. AUS 178. Canberra: AIHW

25 years of health spending in Ausrtalia

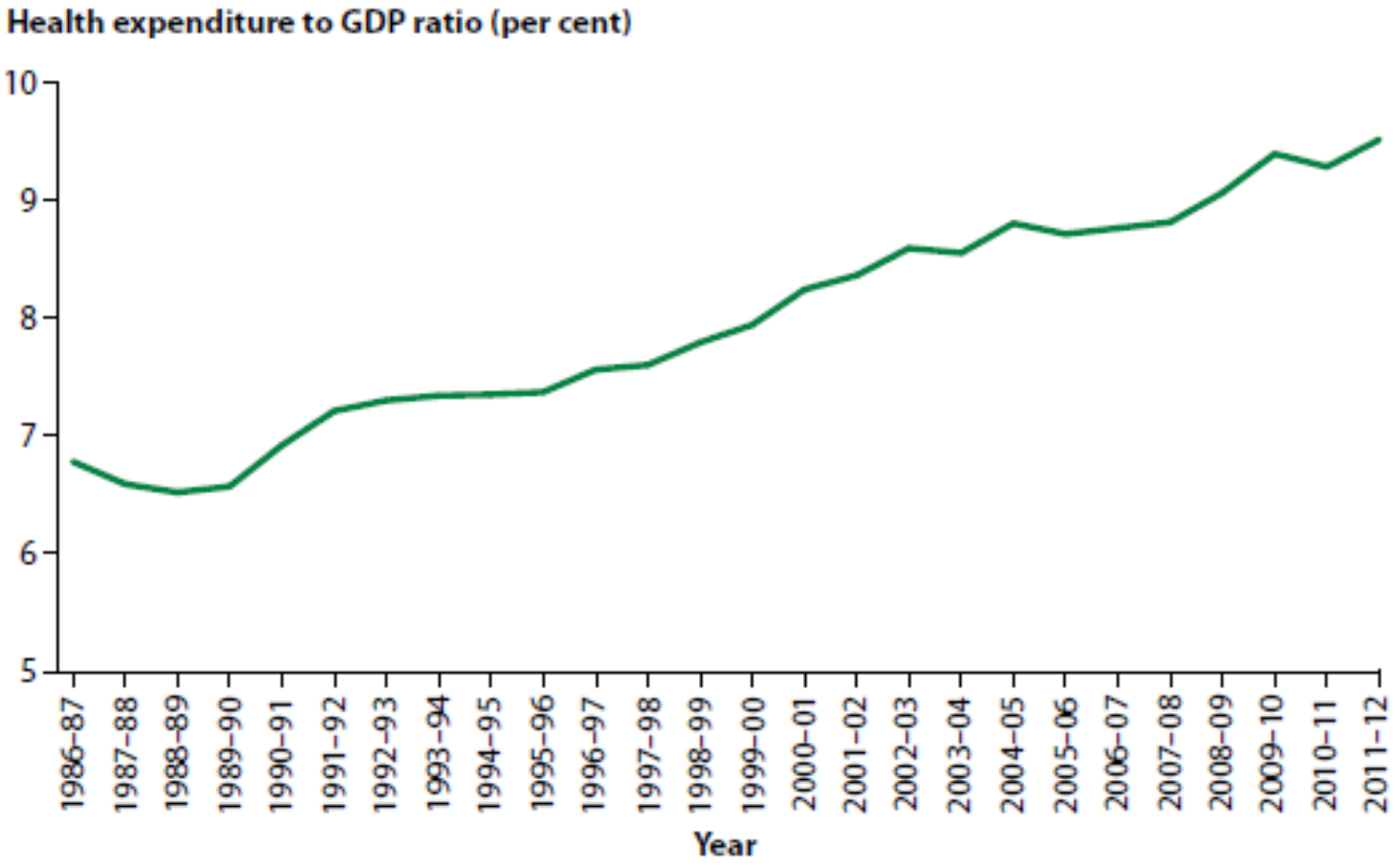


Source: Table A1.

Figure 2.1: Total expenditure on health, current and constant prices, 1989–90 to 2013–14

Source: AIHW 25 years of health expenditure in Australia 1989–90 to 2013–14

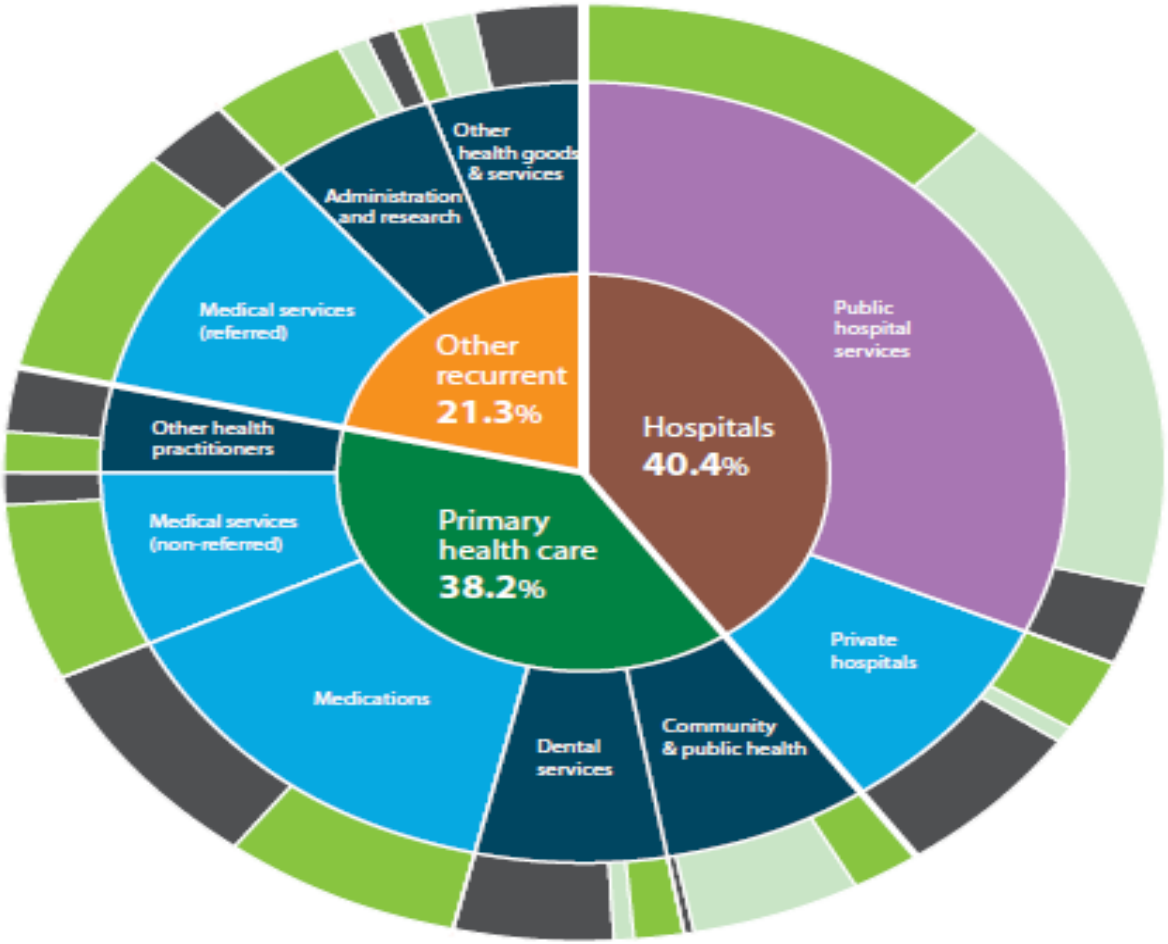
Rising cost of care



Source: AIHW health expenditure database.

Total health expenditure to GDP ratio, 1986–87 to 2011–12

Where are we spending?



Share of expenditure

- Hospitals
- Primary health care
- Other recurrent

Responsibility for services

- Combined private sector and public sector —all levels of government
- State and territory governments
- Private providers

Funding

- Australian Government funding share
- State/territory government funding share
- Private funding share

AIHW 2014. Australia's health 2014. Australia's health series no. 14. Cat. no. AUS 178. Canberra: AIHW

Age-standardised expenditure per person on health services by ASGC region, 2007-8

Source: AIHW 2011

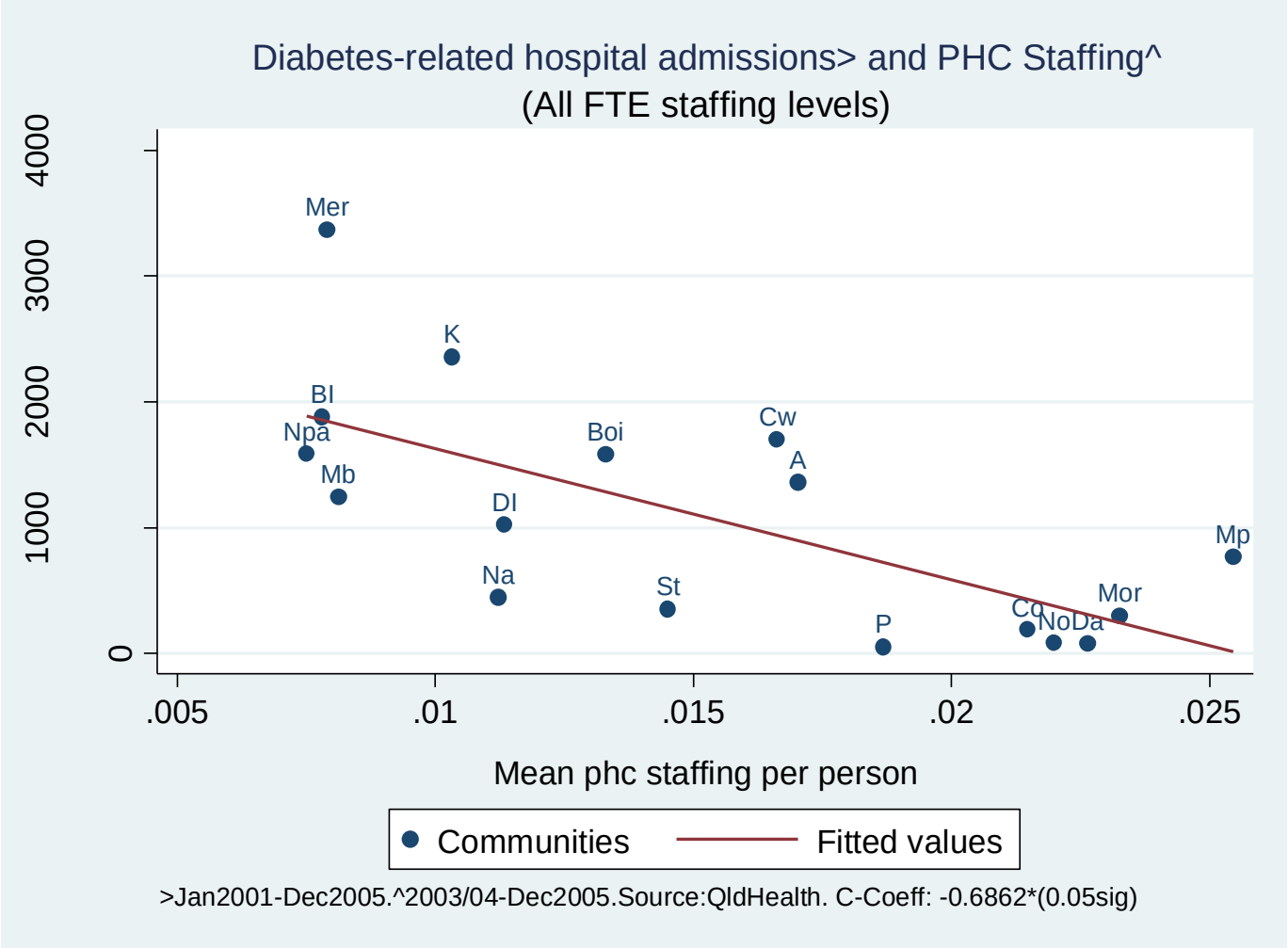
Service	Major city	Inner regional	Outer regional	Remote and very remote	Total
Admitted patient	1,324	1,359	1,460	2,036	1,369
Medicare	761	636	569	453	710
PBS drugs*	321	317	306	302	318
Total	2,406	2,311	2,335	2,791	2,397

*Includes Section 100 pharmaceuticals

Primary Care does make a difference

Association between PHC resourcing (staff) and costs of hospitalisation among diabetics in FNQ remote communities, 2001-5

(Gibson, Segal, McDermott 2011)



>Jan2001-Dec2005.^2003/04-Dec2005.Source:QldHealth. C-Coeff: -0.6862*(0.05sig)

The drug bill 2010

Source: AIHW 2011

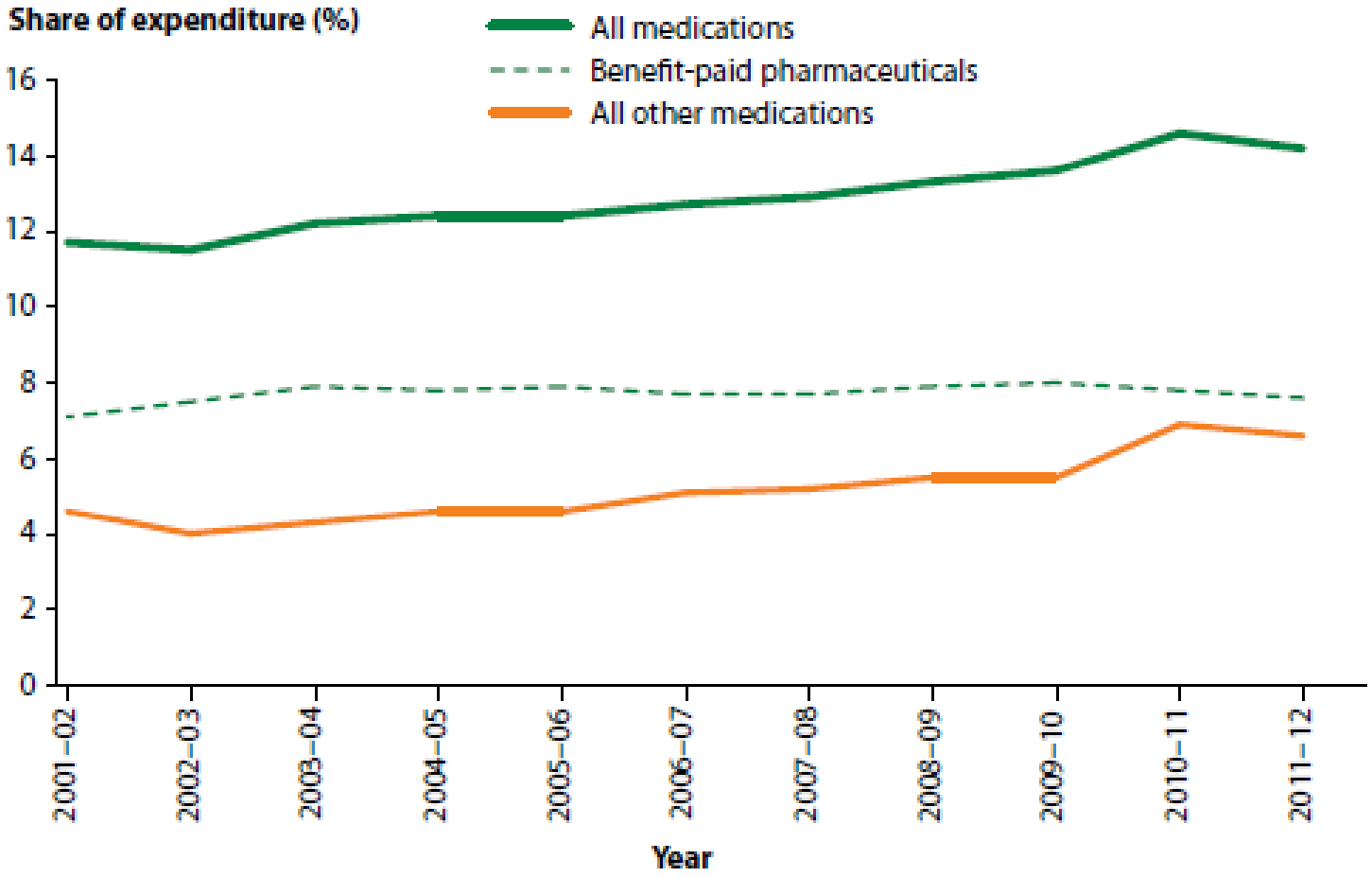
- "Govt PBS expenditure for the year ending June 2010 totalled $8.4 billion, an increase of 9.3% on 2009. Total PBS prescription volumes increased by 1.1% to 183.9 million.
- The growth in expenditure compared with a smaller rise in prescription volume reflects the continuing trend of doctors prescribing newer and more expensive drugs."

The top 3:

- Atorvastatin (Lipitor, Pfizer) – 10,468,431 scripts costing $733,670,794
- Rosuvastatin (Crestor, AstraZeneca) – 4,409,502 scripts costing $344,480,173
- Clopidogrel (Plavix, Bristol Myers) – 2,708,187 scripts costing $214,905,232.

5 statins accounted for 21,030,536 scripts costing $1,327,709,469

Rising drug bill



Source: AIHW health expenditure database.

Proportion of total recurrent health expenditure on medications, constant prices, 2001–02 to 2011–12

Top 10 PBS/RPBS drugs by total cost to Australia, 2014

Drug	DDD/1000/Pop	Scripts	Total Cost
ROSUVASTATIN	41.21	7,491,779	348,572,496
ADALIMUMAB	0.54	165,070	296,247,832
ESOMEPRAZOLE	25.30	7,134,970	253,319,926
SALMETEROL and FLUTICASONE		3,170,238	227,206,347
ATORVASTATIN	56.61	7,907,495	202,160,480
AFLIBERCEPT		116,421	183,301,012
RANIBIZUMAB		113,154	175,206,021
RITUXIMAB		46,198	162,354,136
ETANERCEPT	0.30	90,567	160,619,151
TIOTROPIUM BROMIDE	7.01	2,002,890	145,301,882

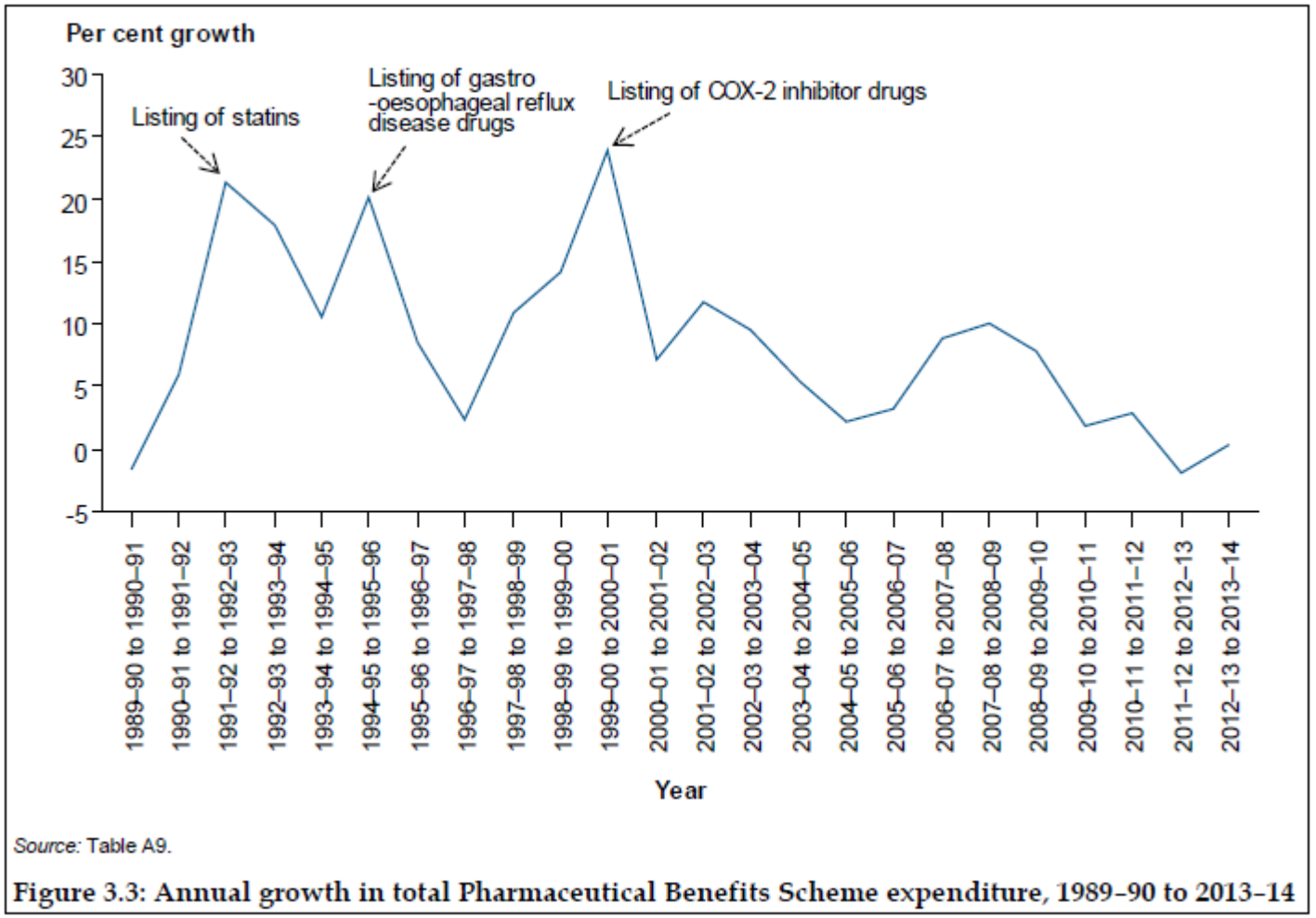
Source: Australian Statistics on Medicine 2014

Top 10 drugs by prescription counts, 2014

Drug	PBS/RPBS	Under co-payment	Total
ATORVASTATIN	7,907,495	2,499,072	10,406,567
ESOMEPRAZOLE (PPI)	7,134,970	1,557,660	8,692,630
ROSUVASTATIN	7,491,779	874,100	8,365,879
PARACETAMOL	6,438,001	387,242	6,825,243
PERINDOPRIL	3,971,847	2,037,079	6,008,926
PANTOPRAZOLE (PPI)	4,342,545	1,559,456	5,902,001
AMOXYCILLIN	2,364,420	3,483,591	5,848,011
CEFALEXIN	2,813,318	2,714,097	5,527,415
METFORMIN HYDROCHLORIDE	3,551,430	1,539,276	5,090,706
AMOXYCILLIN with CLAVULANIC ACID	2,162,928	2,715,103	4,878,031

Source: Australian Statistics on Medicine 2014

PBS spending

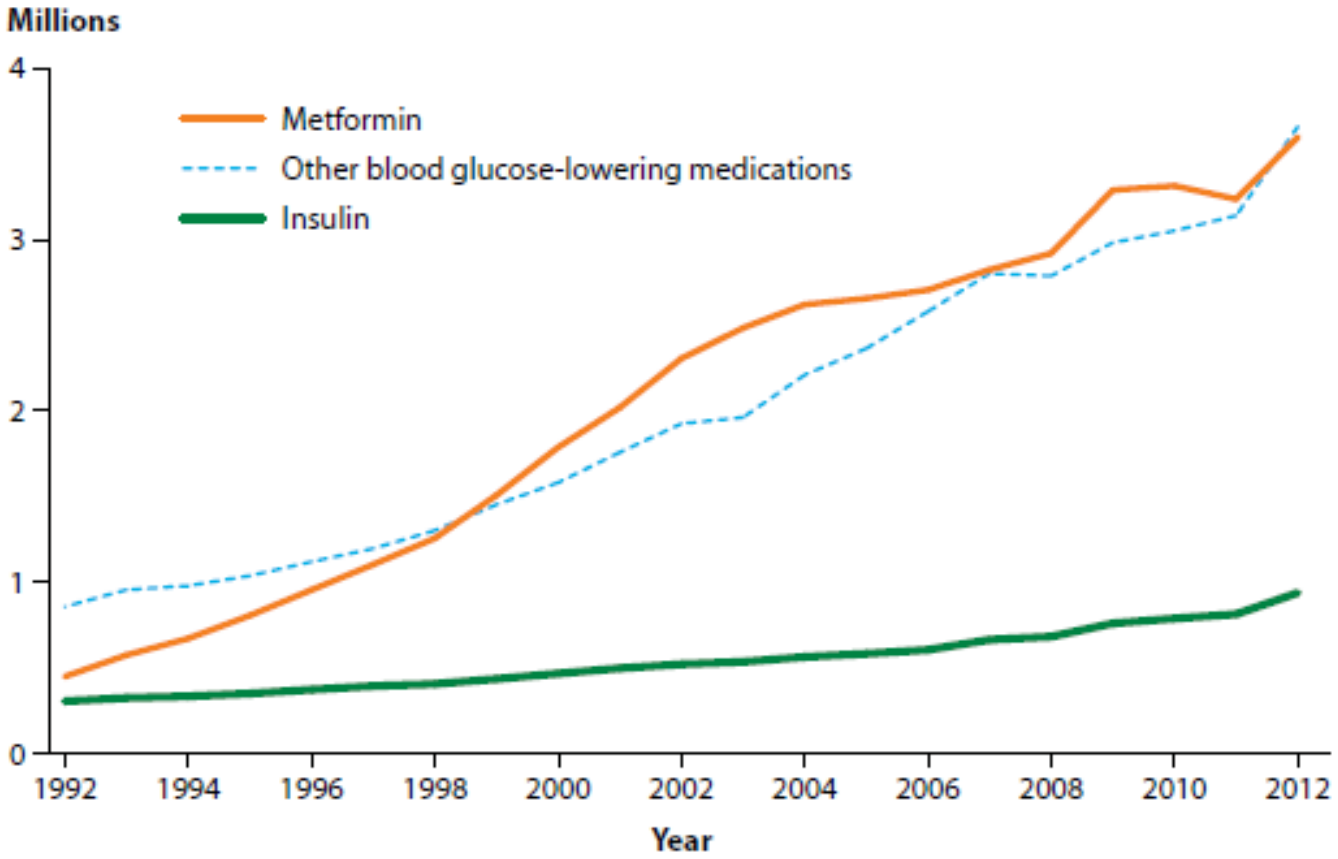


Source: Table A9.

Figure 3.3: Annual growth in total Pharmaceutical Benefits Scheme expenditure, 1989–90 to 2013–14

Australian Institute of Health and Welfare 2016. 25 years of health expenditure in Australia 1989–90 to 2013–14. Health and welfare expenditure series no. 56. Cat. no. HWE 66. Canberra: AIHW.

Obesity-fueled diabetes – impact on drug sales



Source: Data extracted by AIHW (January 2013) from the Department of Human Services website.

Prescriptions claimed for diabetes medicines, 1992–2012

"Privatise the profit, socialise the cost"

Pfizer 2010: Analysis of the Consolidated Statements of Income

(MILLIONS OF DOLLARS)	2010	2009	2008	10/09	09/08
Revenues (USD)	**$67,809**	$50,009	$48,296	**36**	4
Cost of sales	**16,279**	8,888	8,112	**83**	10
% of revenues	**24.0%**	17.8%	16.8%		
Marketing expenses	**19,614**	14,875	14,537	**32**	2
% of revenues	**29.0%**	29.7%	30.1%		
R&D expenses	**9,413**	7,845	7,945	**20**	(1)
% of revenues	**13.9%**	15.7%	16.5%		
Income taxes	**1,124**	2,197	1,645	**(49)**	34
Effective tax rate	**11.9%**	20.3%	17.0%		
Net income to Pfizer Inc.	**$ 8,257**	$ 8,635	$ 8,104	**(4)**	7
% of revenues	**12.2%**	17.3%	16.8%		

Increasing proportion of major studies funded by industry, 1994-2002

Source: Patsopoulos et al, BMJ 2006;332:1061-4

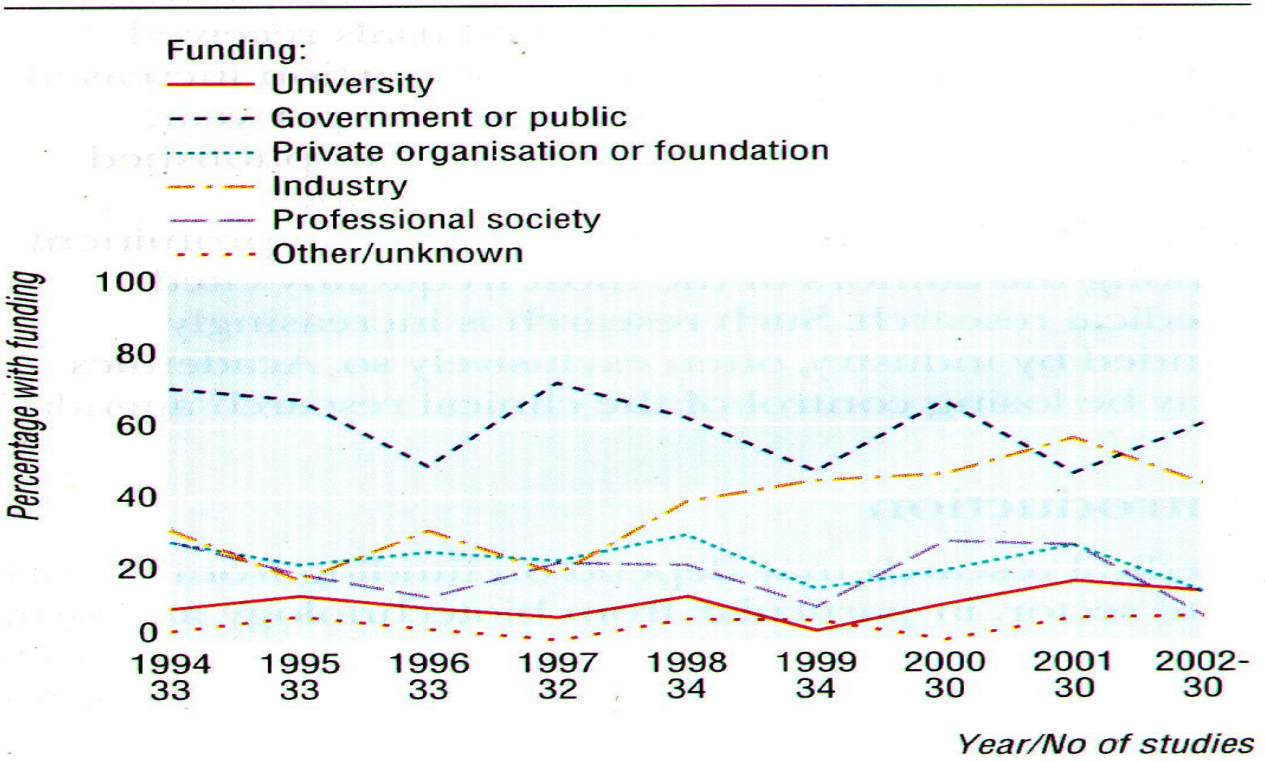


Fig 2 Proportion of frequently cited articles published each year according to sources of funding. Studies with funding from diverse categories of support are counted in all relevant categories

New insights from new technology

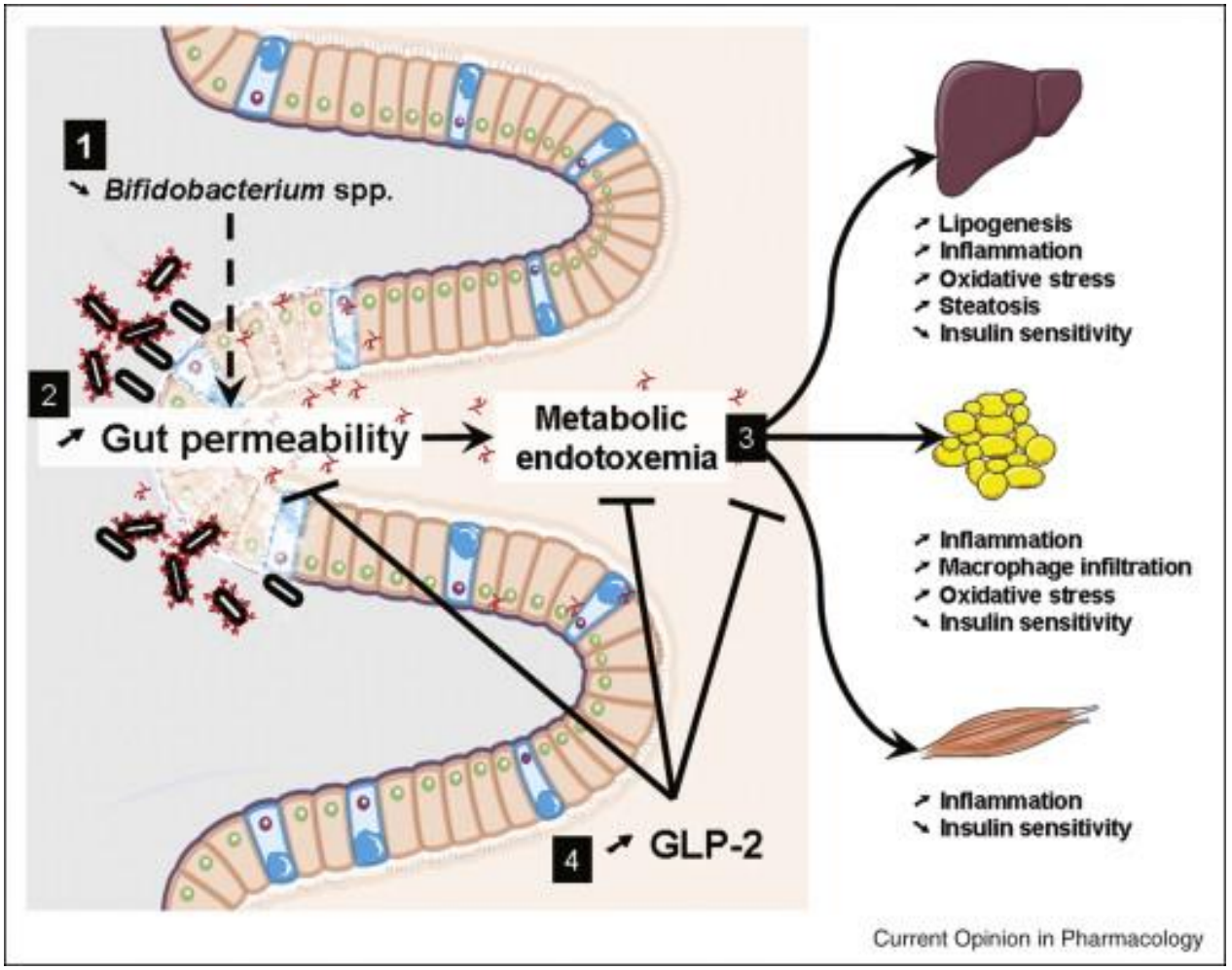
New tools

- Whole genome sequencing: the microbiome
- Bio-informatics and computing capability
- Big data and e-health records

New disciplines

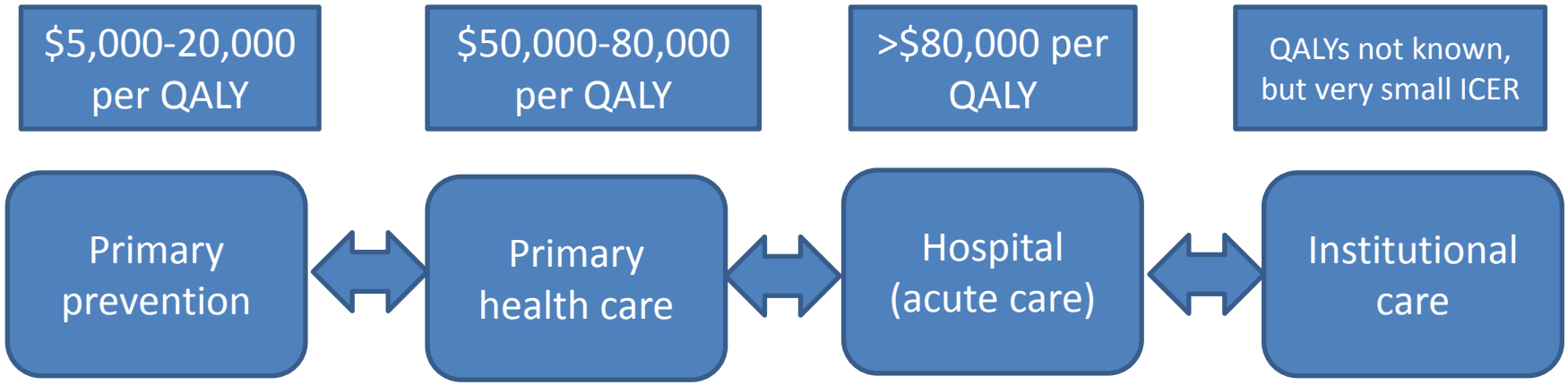
- Epidemiology & Synthesis of trials/observational studies/data linkage
- Epigenetics – heritable changes in gene function without a change in nucleotide sequence (DNA methylation, histone changes and microRNAs)
- Immunology/Immunometabolism/Systems biology
- Molecular biology

Changes in gut microbiota (following highly processed diet, obesity, diabetes) promote gut permeability, increase metabolic endotoxemia and trigger the development of chronic inflammation and metabolic disorders.



Patrice D Cani , Nathalie M Delzenne **Interplay between obesity and associated metabolic disorders: new insights into the gut microbiota C**urrent Opinion in Pharmacology, Volume 9, Issue 6, 2009, 737 - 743

Pushback: Increasing cost-effectiveness of prevention along the care continuum



- Regulation and taxation of unhealthy food
- Active transport
- Regulation of industry lobby groups

- Primary care reform – "medical home",
- Population-based PHNs
- Investment in lifestyle change for high risk people

Better integration with primary and community sectors

"De-medicalise" aged and palliative care

Return to the Mediterranean

Components of the anti-inflammatory diet

MORE: Fresh fruit and vegetables, olive oil, nuts, fish, cheese, dairy
LESS: Red meat, highly processed anything (cakes, biscuits, lollies)
NO: Sugar sweetened or artificially sweetened beverages, Smokes

"Eat food, mainly plants, not too much" Michael Pollan