Influencing prescribing behaviour including challenges

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Growing pressures on pharmaceutical expenditure will continue with ongoing reforms

- Pharmaceutical expenditure grew by 50% in real terms during past decade - 60% of total expenditure in some countries

- This is set to continue unless addressed due to:
  - ageing populations and rising levels of NCDs
  - continued inappropriate prescribing
  - stricter clinical targets
  - continued launch of new premium priced products

- This is resulting in ongoing initiatives across countries to improve the rational use of medicines. These include:
  - Models to optimise the use of new medicines including new expensive oncology medicines
  - Initiatives to enhance the use of low cost generics
  - Initiatives to improve the utilisation of anti-infectives

Ref: Godman et al 2012 to 2015; Moon, Godman et al 2014; Furst et al 2015

Key learning points

- Demonstrate why it is important to analyse policy and other initiatives before planning new initiatives – especially with scarce personnel and resources

- How to collate information across countries and meaningfully analyse this to provide future direction (personal perspective)

- Potential challenges and ways to address these (personal perspective)

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Pharmaceutical policy and initiatives incorporate a number of areas

- Pharmaceutical policy is designed to improve the safe and effective use of medicines. This incorporates a number of areas including:
  - issues of unmet need and access to medicines
  - pricing of medicines and cost containment
  - improving the rational use of medicines (RUM)
  - issues of innovation and service provision

- Issues regarding pharmaceutical expenditure can be divided into:
  - **supply-side measures** - principally concerned with the pricing of medicines and associated regulations
  - **demand-side measures** - principally concerned with interventions/activities designed to influence the subsequent utilization of medicines

Ref: Traulsen, Almarsdottir 2005; Seiter 2010; Godman, Kwon et al – Accepted for publication

European ideals – comprehensive and equitable healthcare for all with limited co-payment

- These challenges issues are particularly important in Europe where:
  - ❑ Equity and solidarity are key principles
  - ❑ Compulsory contributions (taxation or health insurance) – amount depends on income
  - ❑ Goal is continued universal and comprehensive healthcare

- Concerns with the ever increasing prices of new medicines - despite low cost of goods (as low as 2%) and monies spent on R & D perceived as considerably lower than current rhetoric of over US$1bn/ new product launch

- Companies need their products reimbursed else limited sales in Europe (near monopoly) – this enhances the bargaining power and initiatives that health authorities/ health insurance agencies can instigate to maintain these ideals

Ref: Godman, Malmstrom et al 2015; Godman et al 2014; van Woerkom, Pipenbrink, Godman et al 2012

Demand-side measures can be collated under the 4 Es to compare their influence across countries

- Demand side initiatives can be collated under 4 'E's – well accepted by payers and endorsed in publications:
  - **Education** – e.g. Academic detailing, benchmarking, guidelines and formularies
  - **Economics** – e.g. financial incentives for physicians, pharmacists or patients
  - **Engineering** – e.g. prescribing targets - % of PPIs as generics, % of statins as generics, % of patients achieving agreed BP and lipid goals
  - **Enforcement** – e.g. prescribing restrictions, compulsory generic substitution

Ref: Wettermark, Godman et al 2009; Godman et al 2012 - 2015

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Health authorities should enhance the use of low cost renin-angiotensin inhibitors to save costs

- It is generally recognised that only a limited number of patients experience a cough with ACEIs (only a few patients discontinued treatment in the clinical trials due to coughing)
- Consequently, the goal of health authorities should be to limit the utilisation of patented ARBs versus generic ACEIs (as seen as equally effective)
- More recently, limit the utilisation of patented ARBs vs. generic losartan with all ARBs again seen as essentially similar at therapeutically equivalent doses
- Time series analyses undertaken among countries to examine the impact of health authority activity. Health authorities learnt from each other once generics became available – allowing for time series analyses with generic losartan

Ref: Moon, Flett, Godman et al 2010; Godman, Bishop et al 2013; Moon, Godman et al 2014

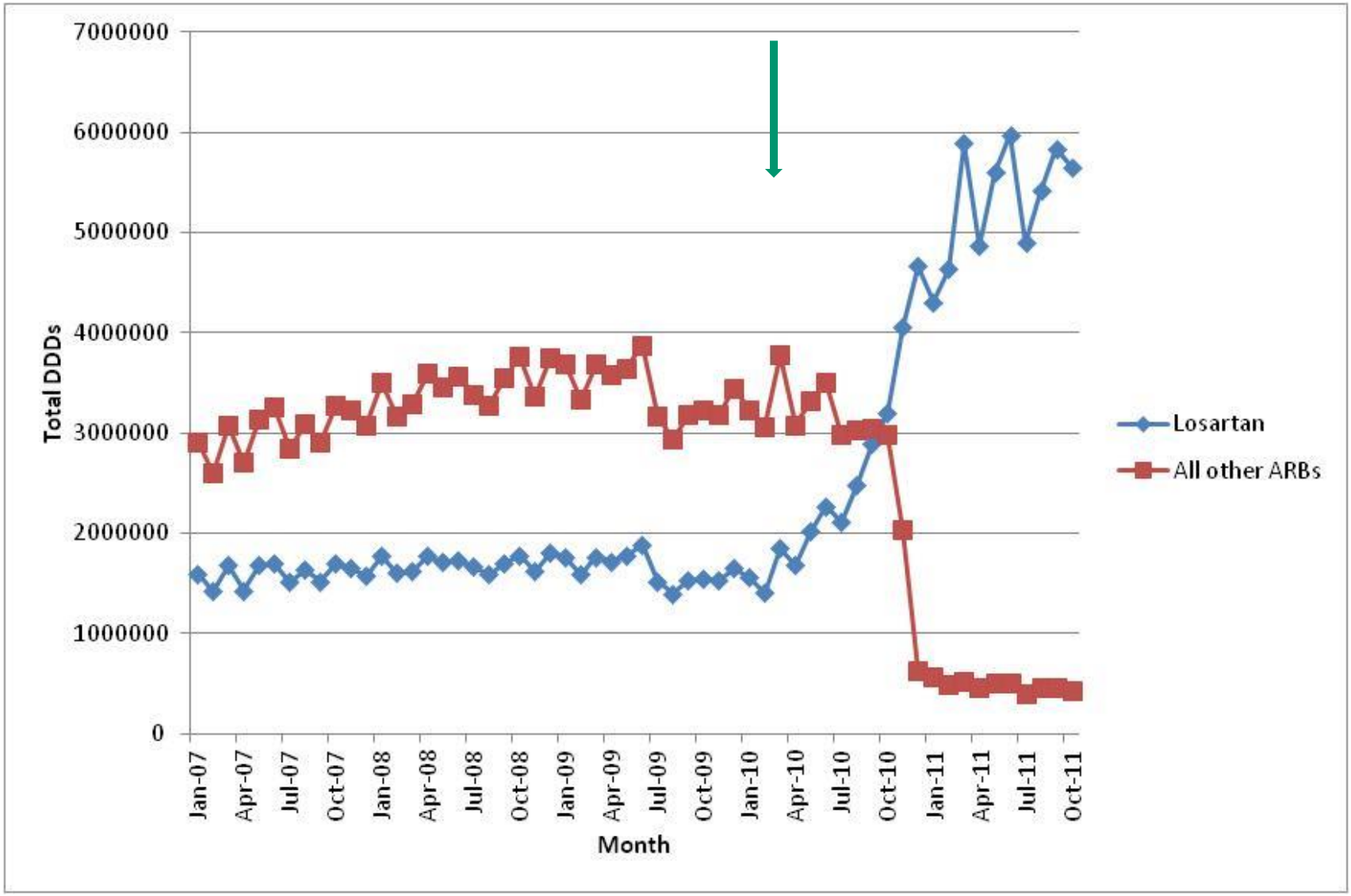
Different activities were undertaken by health authorities in Western European countries in response to generic losartan (first generic ARB)

Country	Generic losartan reimbursed	Activities
Austria	October 2008	Prescribing restrictions removed for losartan but not the other ARBs. Potential sanctions for abuse
Belgium	July 2010	Prescribing restrictions removed for losartan; prior authorisation for other ARBs (otherwise 100% co-payment). General co-payment 25%
Bury PCT	July 2010	No immediate measures. This changed in March 2011 with multiple measures including educational activities, switching programmes, prescribing targets and financial incentives
Denmark	April 2010	Delisting of all other ARBs from the reimbursed list apart from losartan
Ireland	March 2010	No specific activities were undertaken to enhance losartan utilisation
Scotland	July 2010	No specific activities as high INN prescribing rates, other priorities and the imminent launch of generics of other ARBs
Spain (Catalonia)	July 2006	No specific activities regarding losartan - apart from general activities enhancing the prescribing of generics
Sweden	March 2010	Multiple activities among the counties including educational programmes, switching programmes and financial incentives

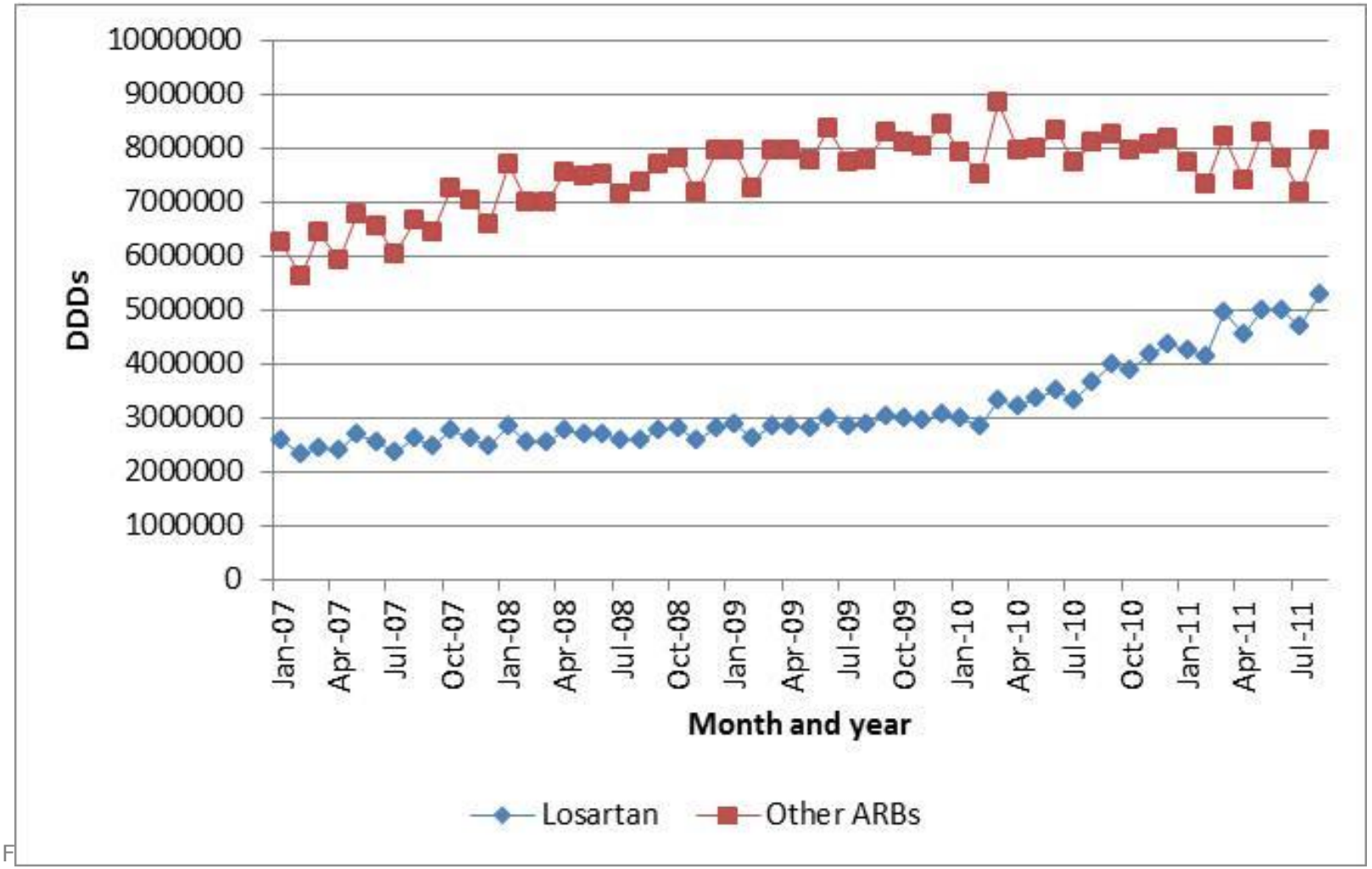
Ref: Moon, Godman et al 2014

Appreciable change in losartan utilisation in Denmark once patented ARBs delisted

Generic losartan reimbursed and other ARBs removed

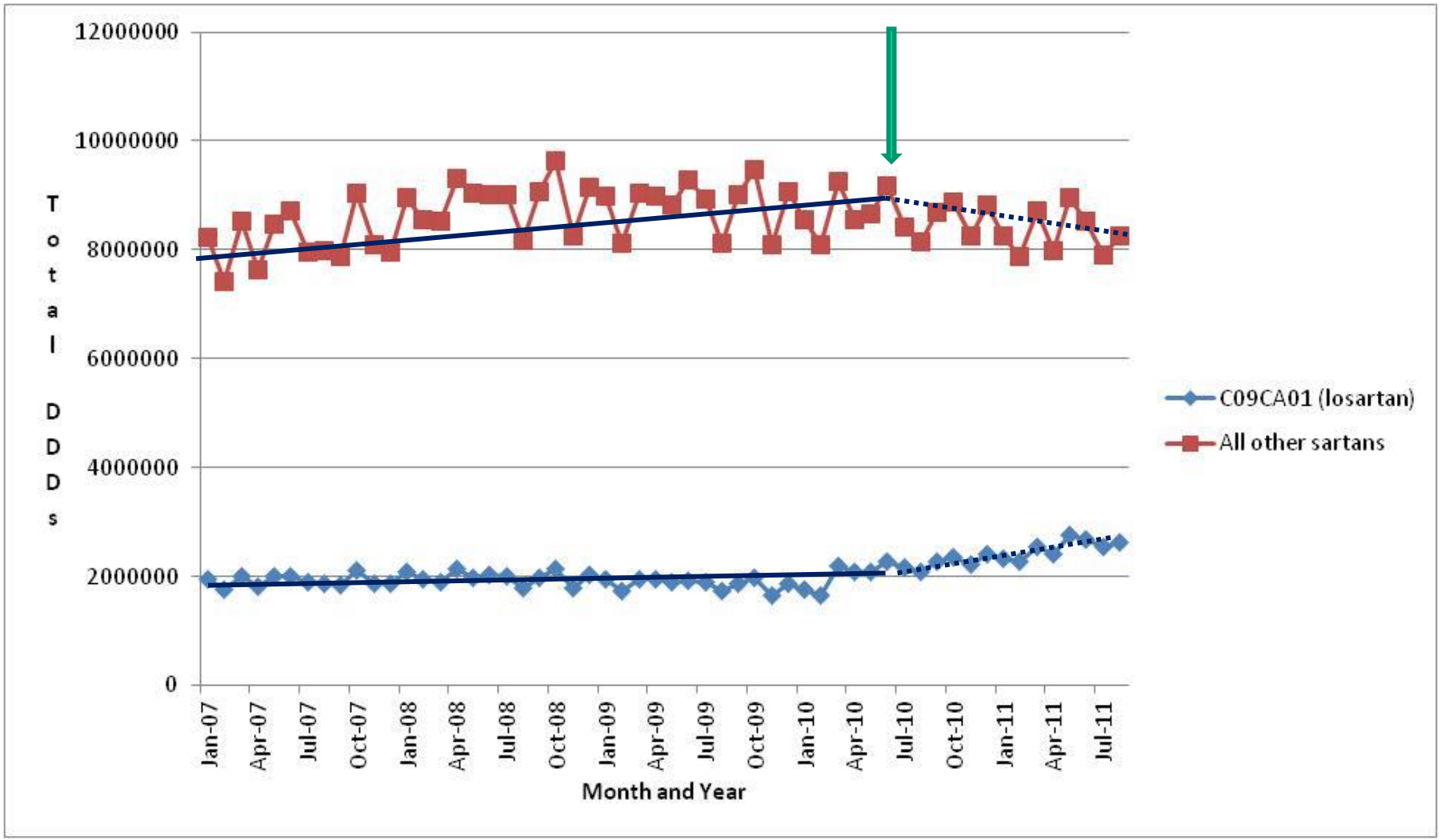


Multiple demand side measures among the Counties in Sweden including guidelines, prescribing targets, financial incentives and therapeutic switching significantly increased losartan utilisation post generics (March 2010) reducing costs (costs⬇ by 26%; utilisation ⬆16%)



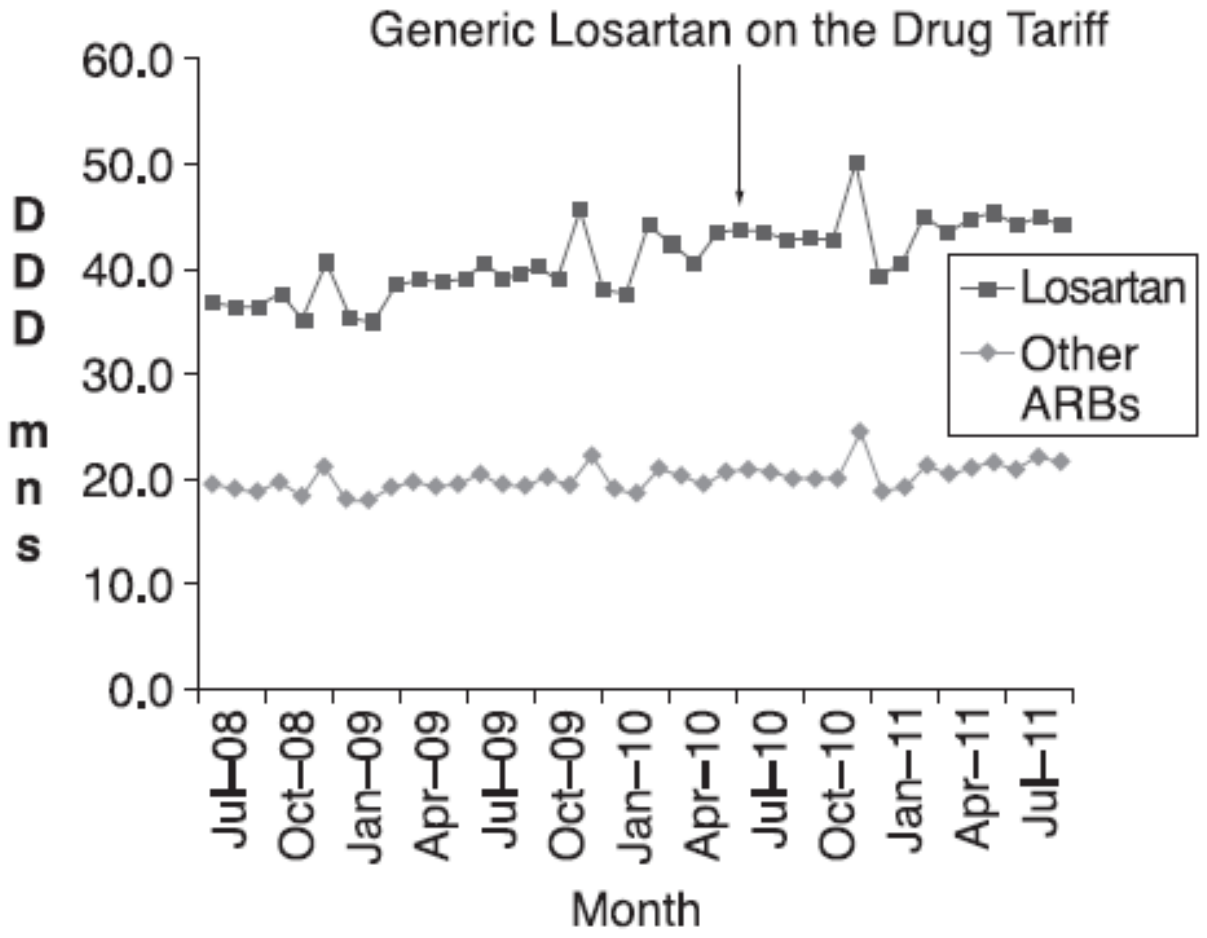
Ref: Godman, Wettermark, Miranda et al 2013

Appreciable change in losartan utilisation in Belgium once prescribing restrictions lifted



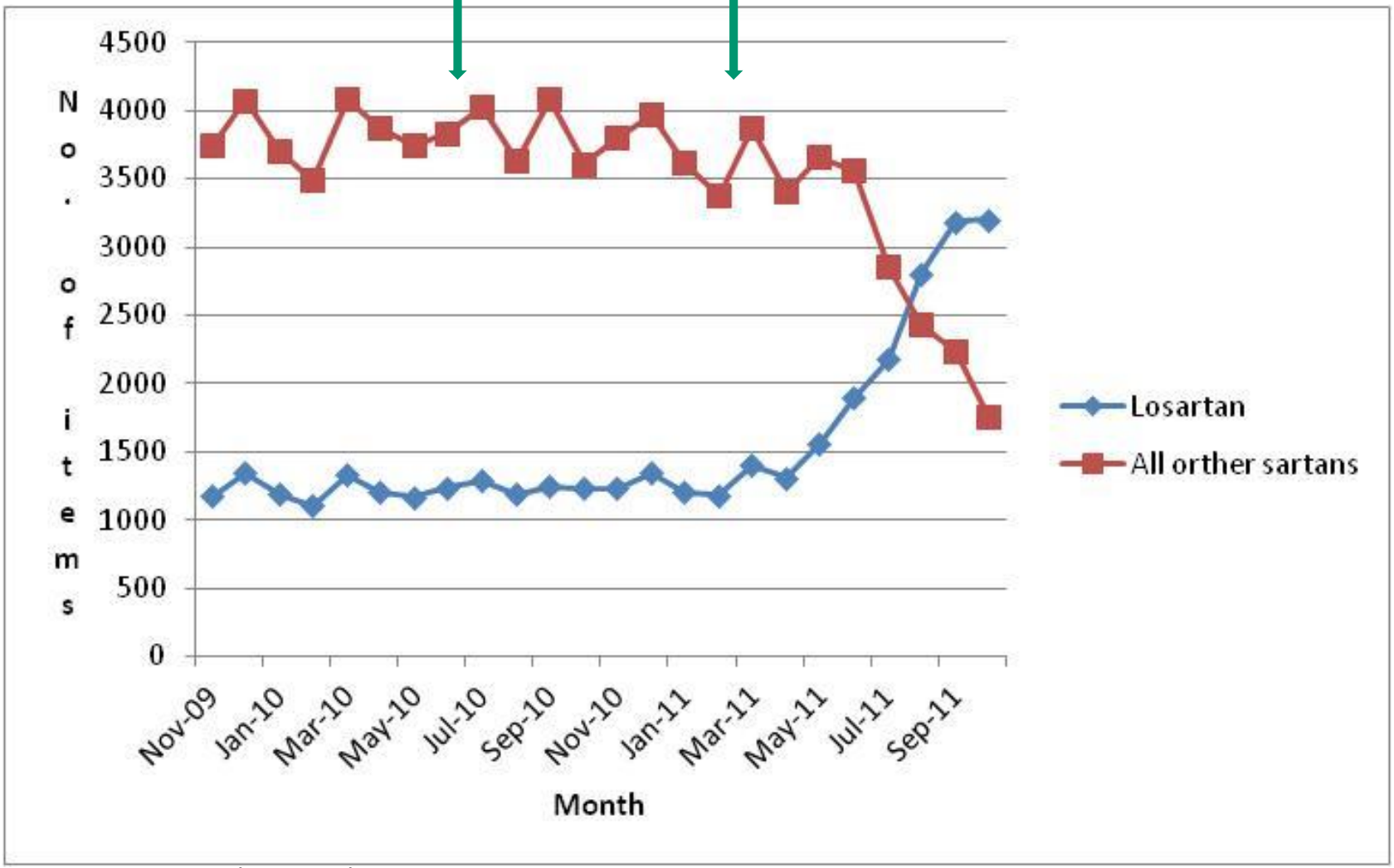
Ref: Simoens, De Bruyn et al 2013

No change in the utilisation of losartan following generics in Scotland even with measures encouraging generic ACEIs (exacerbated by a more complex message). This suggests no 'spill over' effect between classes



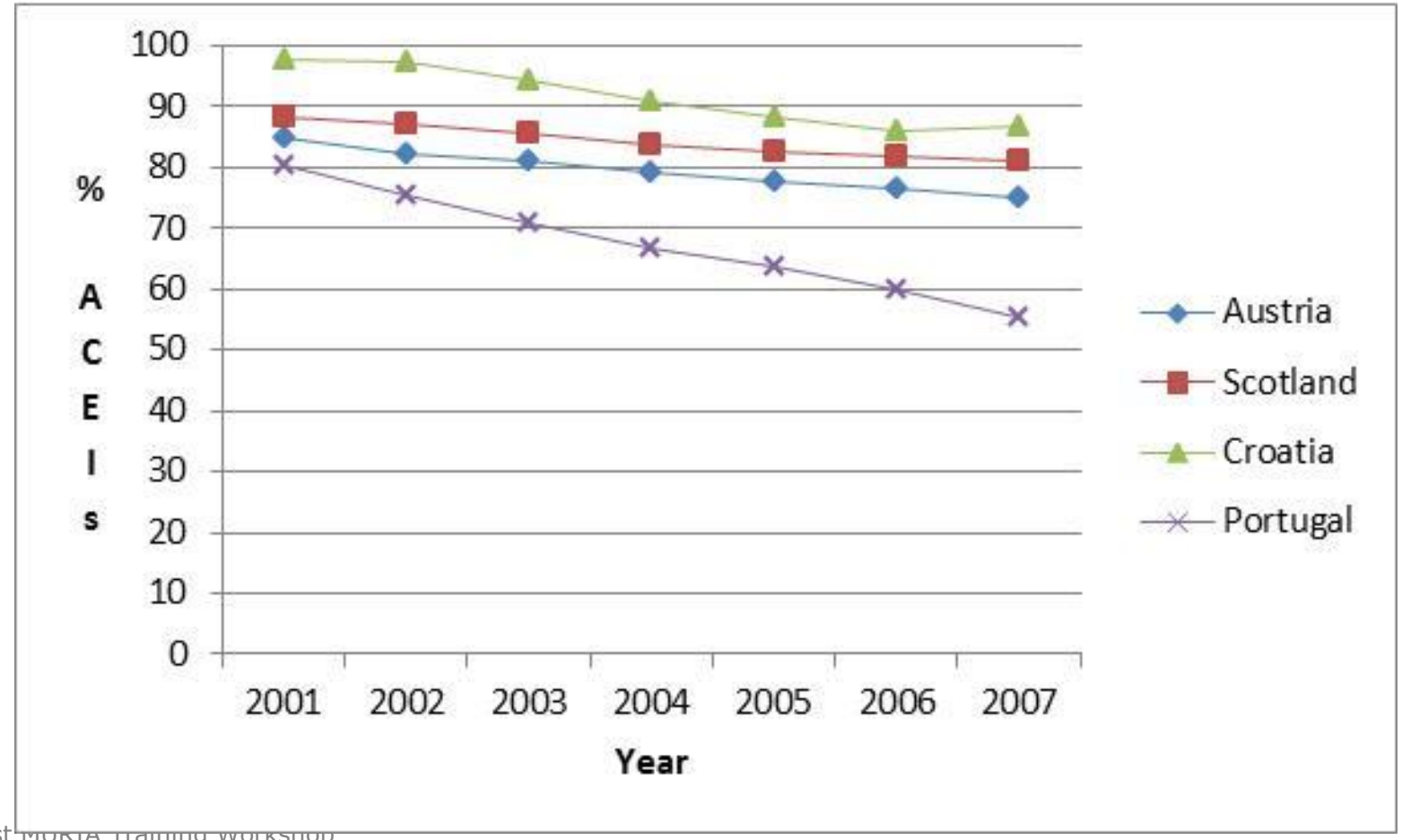
Ref: Bennie, Bishop, Godman et al 2013

These findings of no 'spill over' further endorsed by study in Bury PCT where initially no change in losartan utilisation post generics. This changed with multiple measures (similar to Sweden)



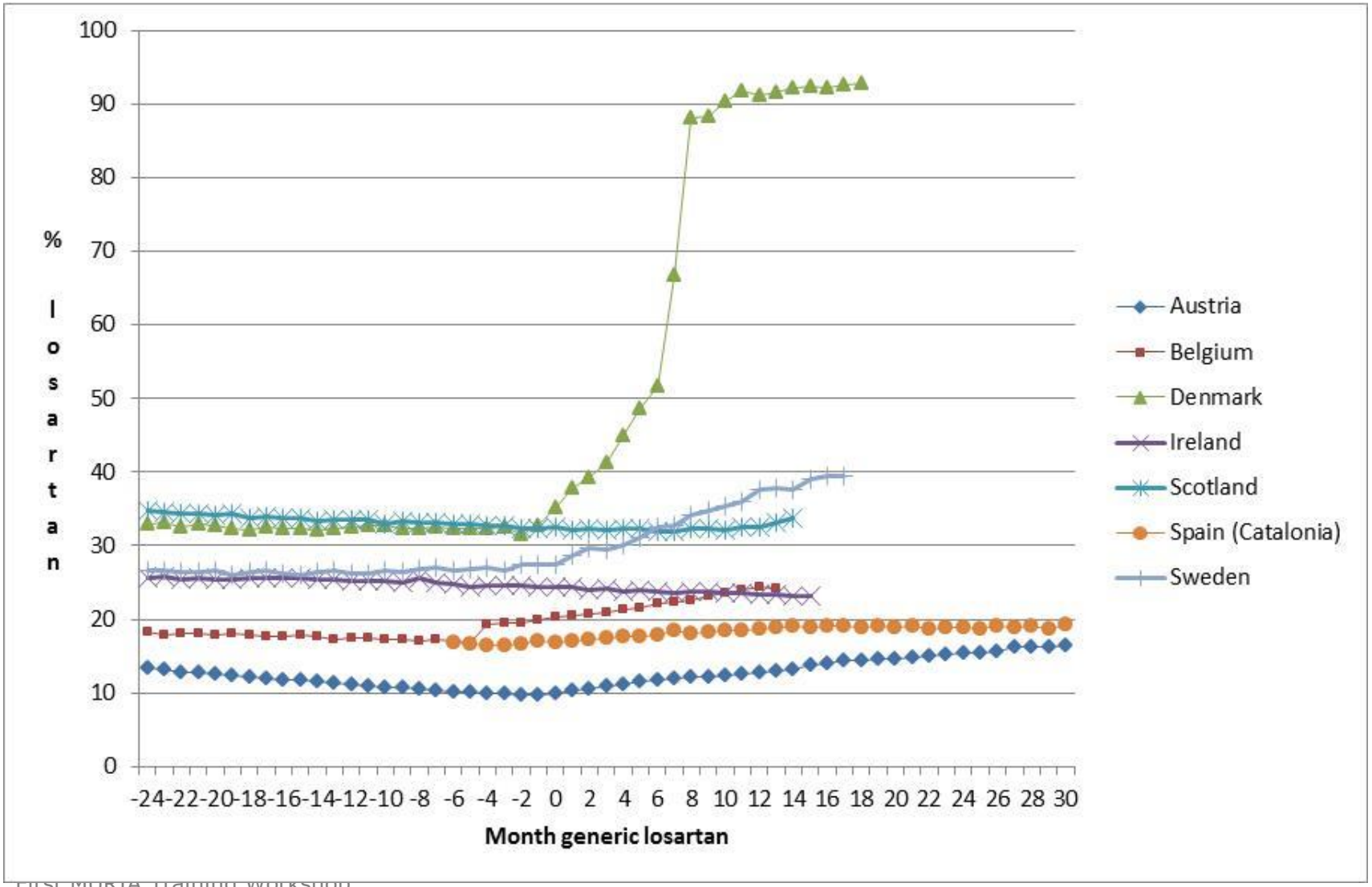
Ref: Martin, Godman et al 2014

Multiple demand-side measures limited ARB utilisation vs. generic ACEIs in Scotland versus Portugal, matching the influence of prescribing restrictions for ARBs in Austria and Croatia (ARBs second line – greater intensity of follow-up in Croatia vs. Austria) - y axis = % ACEIs vs. total renin-angiotensin inhibitors on a DDD basis



Ref: Godman, Bishop et al 2013

Multiple demand-side activities in Austria, Belgium, Denmark and Sweden increased losartan use once available as generics vs. Ireland, Scotland and Spain



Ref: Moon, Godman et al 2014

Good consistency in the change in slope for the 3 countries with limited/ no demand-side measures (Ireland, Scotland and Spain) following generic losartan applying linear random coefficient models with country specific intercepts and slopes adds robustness to 'no spill over' suggestion

Countries	Change in slope % units per month (95% CI)	Standard deviation of the change in slope Sd (95% CI)
All	0.82 (-0.17 to 1.82)	1.33 (0.78 to 2.26)
Excluding Denmark	0.30 (0.04 to 0.56)	0.32 (0.18 to 0.57)
Excluding Denmark and Sweden	0.22 (0.02 to 0.43)	0.23 (0.12 to 0.43)
Excluding Denmark, Sweden, Austria, Belgium	0.10 (0.01 to 0.20)	0.08 (0.03 to 0.19)

Ref: Moon, Godman et al 2014

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Criteria have been developed to enhance CNC studies. These should be born in mind for the future

- Criteria for undertaking good quality drug utilization and policy cross-country comparative studies have recently been documented

- These include:
  - ❑ Appropriate use of theory
  - ❑ Explicit selection of comparator countries, i.e. the rationale including differences in epidemiology, financing of healthcare and potential policies
  - ❑ Rigour of the comparative design including research approach (although time series analyses difficult if multiple interventions undertaken over time as seen with the PPIs and statins – not so with generic losartan) – the chosen study design will depend on available datasets
  - ❑ Attention to the complexity of cross-national comparisons
  - ❑ Contribution of the study to our current knowledge

Ref: Cacace et al 2013

Comparative effectiveness/ safety studies of different treatment approaches

Analytical drug utilisation studies using patient data

Patient data for descriptive drug utilisation studies

Patient identity data to determine ongoing incidence and prevalence of diseases

Aggregated drug utilisation statistics (volume and/ or expenditure)

Increasing sophistication

Ref: Adapted from Wettermark 2013

Why compare cross-country?

- Within-country drug use data can provide insight into local use and policies

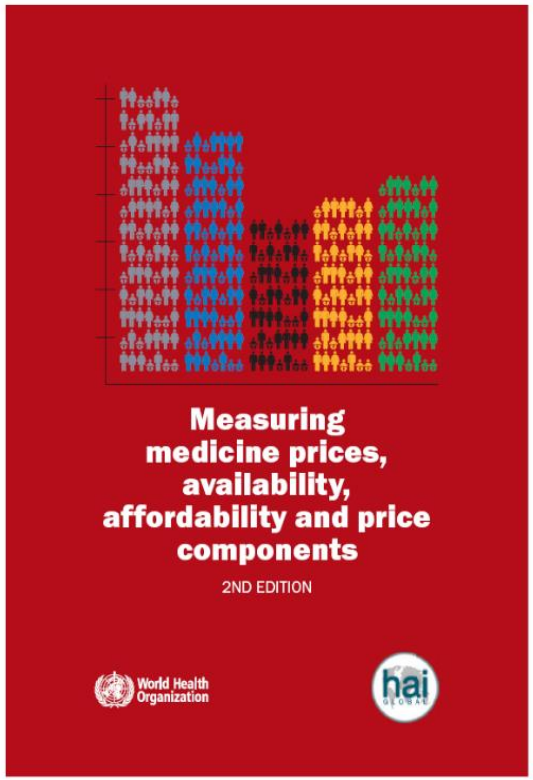
- Comparison with other countries can give further information/raise issues, e.g.:
  - Are there differences?
  - Why are there differences?
  - What does this mean for quality of care? Health care system?
  - Cross country data powerful in advocacy messages

Challenges

- Cross-country comparisons must be undertaken carefully → valid similarities and differences between like products in like sectors
- Differences context/setting, e.g.:
  - Different treatment guidelines
  - Different resistance patterns (antimicrobials)
- Differences in data collection
- Database content/validity
- Existing databases?
- Compare vs. pool data?

Possible solutions

- Standardised classification systems (ATC) and measures of unit (DDD)
- Collect own data
- Methodological rigour:
  - ❑Same protocol
  - ❑Same data collection tools
- Some standardised tools exist
- Surveys, qualitative methods



Limitations

- Be aware of the limitations of available data/ countries
- Know the different contexts and data quality

There are several approaches to enhance the quality of CNC studies. These helped by:

- Using standard and comparable methodologies for utilisation, e.g. DDDs and DIDs in ambulatory care (PDDs can be difficult to ascertain if no access to patient specific data)
- Working with pertinent groups, e.g. health authority/ Ministry personnel/ Insurance personnel when describing policy initiatives in given sectors and including them as authors in any study
- Using robust databases for the studies that are regularly audited (as opposed to utilisation data from commercial sources given the expense)
- Using other accepted methodologies if difficult to obtain utilisation data from databases, e.g. qualitative and other approaches
- Accepting that time series analyses may not always be possible – and stating why, e.g. PPI and statin studies

Ref: Godman et al 2010 to 2015

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Drug utilisation and policy studies provide a good platform for implementing future policies

We have shown that:

- 4Es help document demand side measures for comparison purposes within and across countries
- Multiple demand-side measures can favourably influence prescribing patterns across classes and countries with no 'spill over' effect from one class to another
- Challenges do exist – but these can be overcome through persistence and seeking to publish findings as the first step to influence future changes in prescribing patterns. In addition, awareness of the limitations of the research
- Important to have a good mix of countries (and similar context) for cross national comparative (CNC) studies to enhance the robustness of the findings and their generalisability

Thank You

Any Questions!

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