Antibiotic stewardship – a role for Managed Care

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GRIP
Global Respiratory Infection Partnership

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- Aim: To decrease inappropriate antibiotic use by developing a consistent global approach for behavioural change
  - Reducing antibiotic resistance
  - Securing antibiotic treatments and public health for the future
  - Encouraging prescribers and patients to focus on symptom management where appropriate

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Doug Burgoyne: disclosures

- Dr Burgoyne is CEO of Veridicus Health, a health and pharmacy benefits management company based in Salt Lake City, Utah
- The consumer survey reported herein was funded by RB and conducted by a research company
- The Global Respiratory Infection Partnership was convened by RB. All materials are sponsored by and developed in partnership with RB Healthcare. The views expressed in the materials are those of the Partnership

Introduction

Antimicrobial resistance (AMR) is a global public health challenge that is being accelerated by the misuse of antimicrobials[1,2]

Inappropriate use of antibiotics in primary care is a particular problem, with respiratory tract infections (RTIs) being one of the most common conditions for which antibiotics are prescribed[3]

To create a consistent global approach to change behaviour, the **Global Respiratory Infection Partnership** (GRIP) has formulated a framework for an evidence-based, non-antibiotic approach in the management of RTIs[4]

GRIP's 1, 2, 3 approach helps healthcare professionals to:

Take a consistent approach to the management of sore throat

Put the patient at the centre of the consultation[5]

Direct towards symptomatic treatment, where appropriate

1. Oxford J, et al. *Int J Clin Pract*. 2013;67(S180):1–3. 2. WHO. Antimicrobial resistance. Fact sheet 194. Updated April 2015. Accessed August 2015. Link: http://www.who.int/mediacentre/factsheets/fs194/en/ 3. ECDC. Accessed July 2015. Link: http://ecdc.europa.eu/en/eaad/antibiotics/pages/messagesforprescribers.aspx?preview=yes&pdf=yes
4. Essack S, et al. *Int J Clin Pract*. 2013;67(S180):4–9 5. van der Velden AW, et al. *Int J Clin Pract*. 2013;67(S180):10–16

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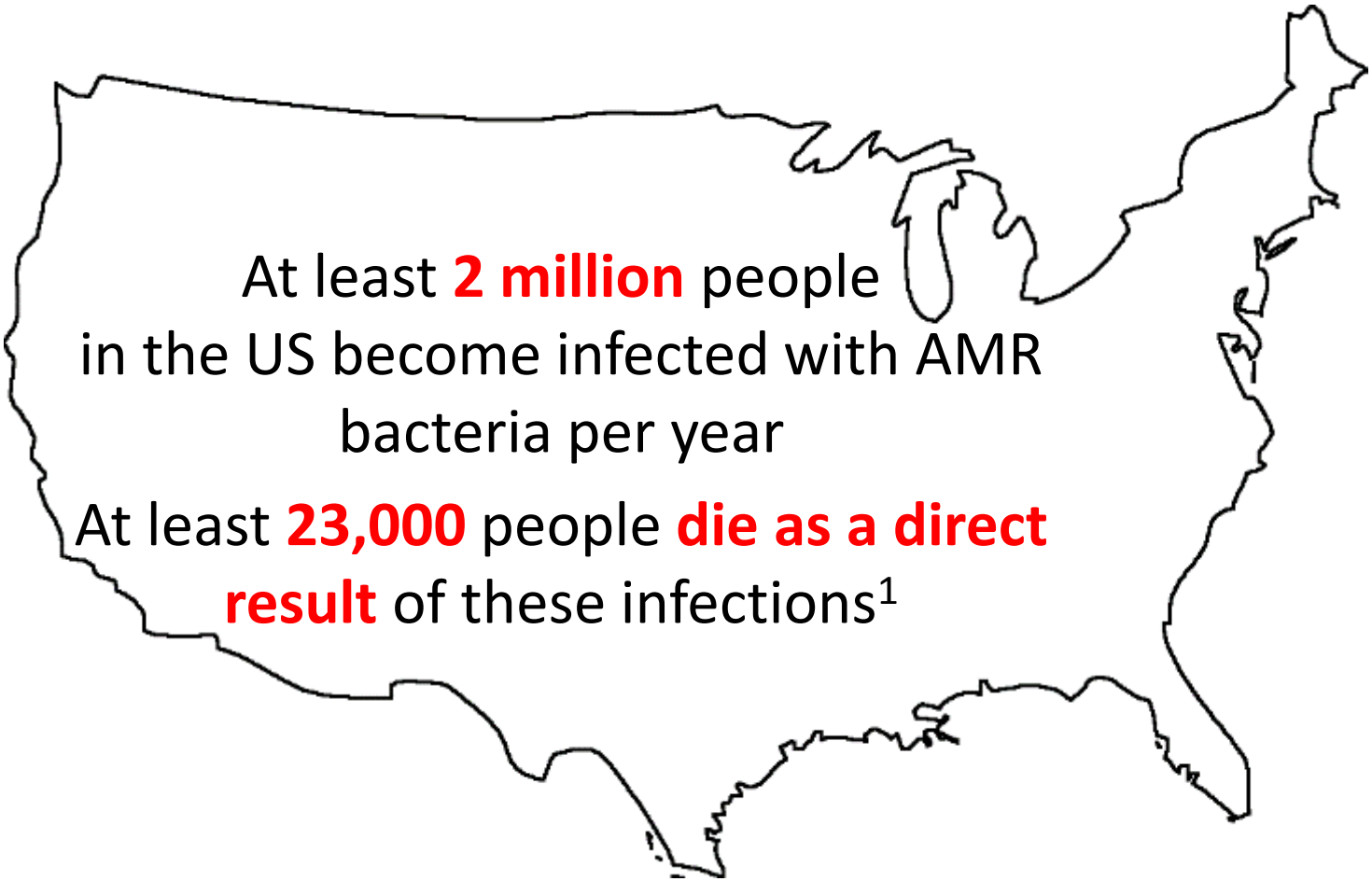
What is the incidence of AMR in the US?



At least **2 million** people in the US become infected with AMR bacteria per year

At least **23,000** people **die as a direct result** of these infections[1]

1. Centers for Disease Control and Prevention. Antibiotic / antimicrobial resistance. Available at: http://www.cdc.gov/drugresistance/ Accessed 17 August 2015

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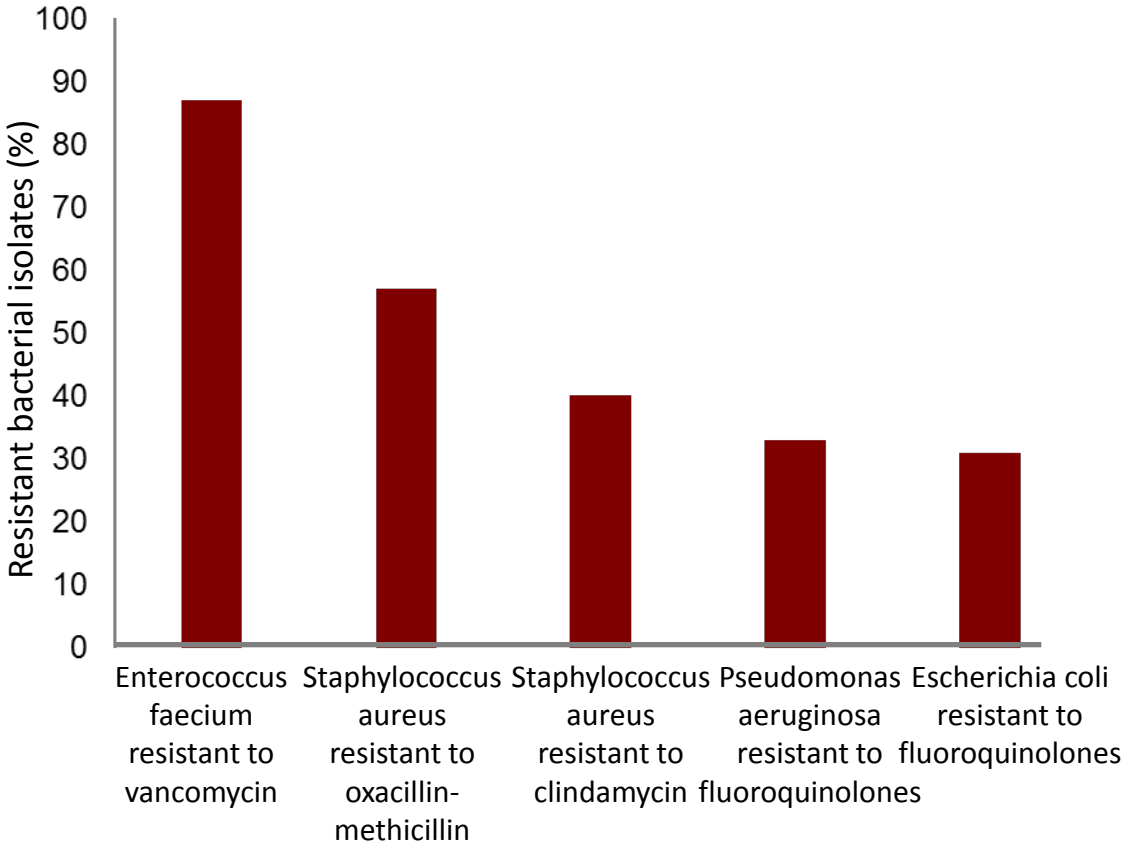
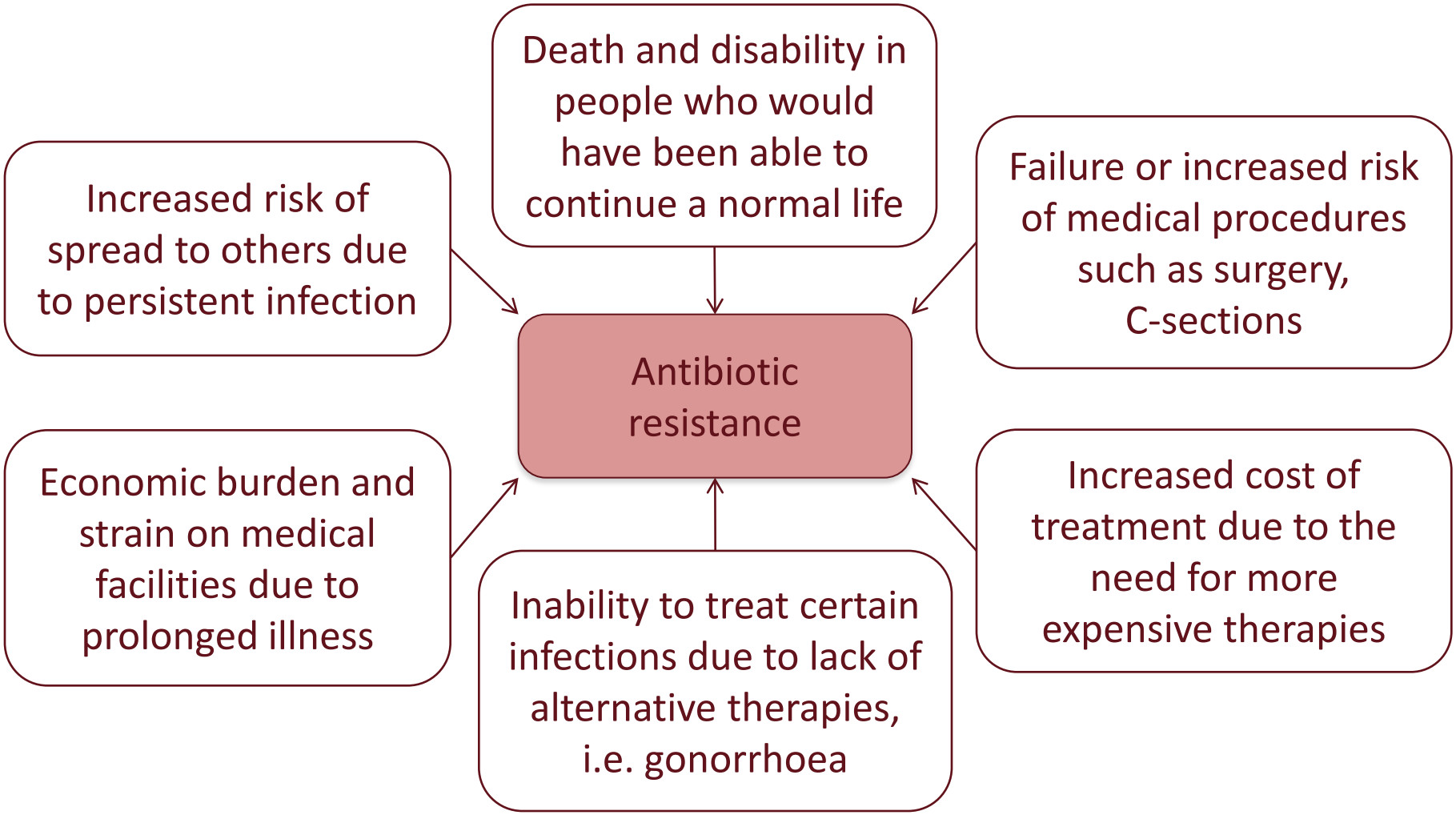
Prevalence of antibiotic resistance in US hospitals

- Data from 80,089 qualifying admissions in 19 US hospitals, 2007–2010
- Study evaluated percentage of bacterial isolates that were resistant to antibiotics



1. Edelsberg J, et al. Diagn Microbiol Infect Dis. 2014 Mar;78(3):255-62.

Implications of antibiotic resistance



Economic considerations

Low cost of antibiotics, but high cost of resistance

- Cost of antibiotics is relatively low from payer and insurance companies' perspectives
  - Little incentive to improve management

'Stagnant or declining performance in appropriate use of antibiotics'
State of Health Care Quality 2013 report by National Committee for Quality Assurance[1]

- BUT cost of resistance is much higher
  - In 188 patients with antibiotic-resistant infections **in a single hospital**, the lowest estimated attributable medical and societal cost was $13.35 million (2008 data)[2]

1. The State of Healthcare Quality Report 2013. Available at: http://www.ncqa.org/Portals/0/Newsroom/SOHC/2013/SOHC-web_version_report.pdf Accessed 18 August 2015. 2. Roberts RR, et al. Clin Infect Dis. 2009 Oct 15;49(8):1175-84.

US antibiotic use for respiratory tract infections

Acute RTI-associated antibiotic prescriptions in 2005–2006:[1]

- Children under 5: **779 per 1000** population
- Individuals over 5: **146 per 1000** population
- Increase in broad-spectrum antibiotics for these conditions

Of adult antibiotic prescriptions in 2007–2009:[2]

- The most common category was respiratory conditions, which accounted for **41%** of all visits in which antibiotics were prescribed

1. Grijalva CG, et al. JAMA. 2009 Aug 19;302(7):758-66; 2. Shapiro DJ, et al. J Antimicrob Chemother. 2014 Jan;69(1):234-40.

US antibiotic use for respiratory tract infections

Condition	Number of visits in which antibiotics were prescribed (millions)	Percentage of visits in which antibiotics were prescribed
Acute RTI for which antibiotics may potentially be indicated (e.g. pneumonia, acute sinusitis)	13	65
Acute RTI for which antibiotics are unlikely to be indicated (e.g. bronchitis, laryngitis)	13	51
Other respiratory conditions for which antibiotics are unlikely to be indicated (e.g. asthma)	14	23
All respiratory	**40**	**38**

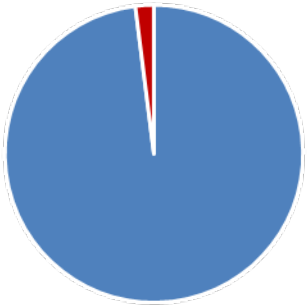
1. Shapiro DJ, et al. J Antimicrob Chemother. 2014 Jan;69(1):234-40.

Are antibiotics efficacious for RTIs?

- Vast majority of URTI symptoms do not benefit from antibiotics[1]
  - ~60–90% or URTIs are non-bacterial[2–4]
  - Most RTIs are self-limiting and effective **non-antibiotic treatment of symptoms** would reduce pressure for antibiotic use[5]
  - Symptomatic relief is effective in treating URTIs[6-7]

- Take sinusitis as an example:[3]

In the US, approximately **2%** of cases are bacterial



?

Yet **90%** receive antibiotics from their GP

1. Duerden M. *Prescriber.* 19 November 2014. Accessed August 2015. Link: http://www.prescriber.co.uk/details/journalArticle/7088851/Antibiotics_its_time_to_get_a_GRIP.html. 2. Foden N., *et al. Br J Gen Pract*. 2013;63:611–613. 3. Ah-See K., *et al. BMJ* 2007;334:358–361. 4. CDC. Accessed August 2015. Link: http://www.cdc.gov/getsmart/community/materials-references/print-materials/hcp/adult-acute-cough-illness.pdf. 5. Hansen M, *et al. Front Public Health* 2015;3:35. 6. Bolt P, et al. Arch Dis Child. 2008;93:40–44. doi:10.1136/adc.2006.110429. 7. Buchholz V, et al. Naunyn-Schmied Arch Pharmacol. DOI 10.1007/s00210-009-0416-x

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Patient perspectives: survey of patient behaviour in RTI consultation

- Consumer survey: 33 countries, Nov/Dec 2014
  - Europe, Asia, Africa, Australasia, North/South America
  - 15-minute online questionnaire
  - Minor ailments in five categories* in previous 12 months
    - Pain
    - Cough, cold, respiratory
    - Gastric, bowel
    - Eye
    - Foot
  - 17,302 subjects responded (24,561 RTI episodes)
  - Questioning:
    - Why they visited a HCP
    - Who they consulted (what kind of HCP)
    - Result of visit (recommendation, prescription – antibiotic, other)
    - If they obtained the product prescribed or recommended
    - Antibiotic use

* Subjects were also asked about blood pressure, cholesterol levels, eczema, and diabetes

US results: consultation for URTIs – why, who, outcome

- Who do they consult for URTI? (n=351)
  - 38% of subjects contacted a HCP
  - 89% of these HCP consultations were with any physician
  - 84% of these HCP consultations were with a GP

- Most common reasons for consulting a healthcare professional for URTI (n=119):
  - "I needed a prescription" – 36%
  - "This person knows my medical history" – 28%
  - "This person is the expert" – 17%
  - "This is the person I trust the most" – 23%

- Of subjects who consulted a physician for URTI and were prescribed a product (n=55):
  - 60% were prescribed an antibiotic

Patient perception of physician prescribing rates for URTIs – US vs. other countries

All physicians, 33 countries	
% AB Rx*	18%

Countries	Brazil	Germany	India	Indonesia	Malaysia	UAE	UK	USA
Subjects with URTI								
% contacted any physician	52%	33%	64%	55%	61%	57%	22%	34%
% AB Rx†	15%	10%	15%	28%	18%	17%	23%	28%

Rx, prescription.
*Aggregate data across all 33 countries.
†Proportion of patients consulting any physician and receiving a prescription for an antibiotic.

RB Data on File.

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Patient consultation for RTIs: insights into the physician-patient interaction

- Physicians tend to over-estimate patients' desire for an antibiotic[1,2]
- Physicians may misinterpret the expectations or a patient, have limited time, or respond to patients' pressure for antibiotics
  - These factors may lead to overprescribing of antibiotics for respiratory disease
- Patients' expectations are usually not directly explored
  - Reassurance, diagnosis (based on physical examination)
  - Overall advice and/or advice about pain/symptomatic relief[3]; this is supported by the consumer survey data
  - Information on natural course and self-limitedness of disease
- There is a key opportunity for primary care to educate, advise and reassure:
  - Physiology and duration of URTI symptoms
  - Efficacy of appropriate treatment options
  - Highlighting appropriate symptomatic treatment

1. van Driel ML, *et al. Ann Fam Med.* 2006;4:494–499. 2. Altiner A, *et al. J Antimicrob Chemother.* 2007;60:638–644. 3. Hansen M, *et al. Front Public Health* 2015;3:35.

GRIP activities:[1] changing prescribing attitudes

CAPABILITY

- *Ensuring HCPs have the **necessary knowledge and information** to practice appropriate RTI management*
  - GRIP toolkit materials

MOTIVATION

- ***Reducing patient demand** for antibiotics in RTIs indirectly changes HCP motivation to prescribe/dispense/sell*
  - *Patient leaflet, tear-off pad and poster*

OPPORTUNITY

- *Creation of an **environment where prescribing in RTIs is not the norm** (physical and social)*
  - *GRIP's 5P framework for change*

GRIP 2014: More action, less resistance. Accessed August 2015. www.grip-initiative.org.

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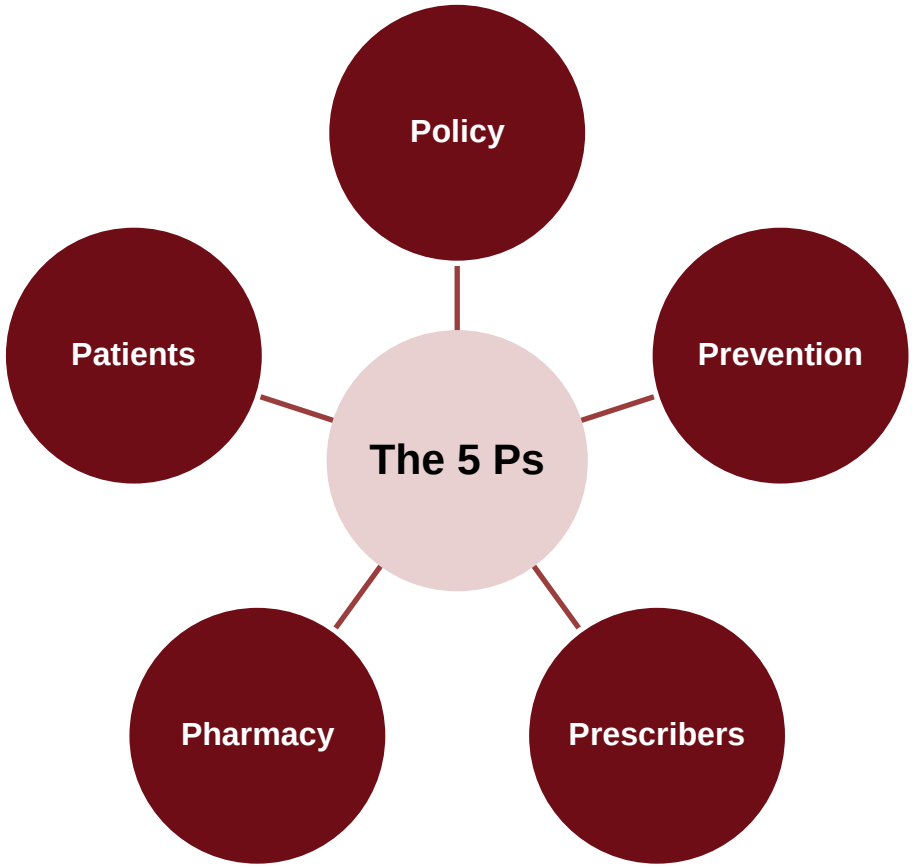
The GRIP 5P framework

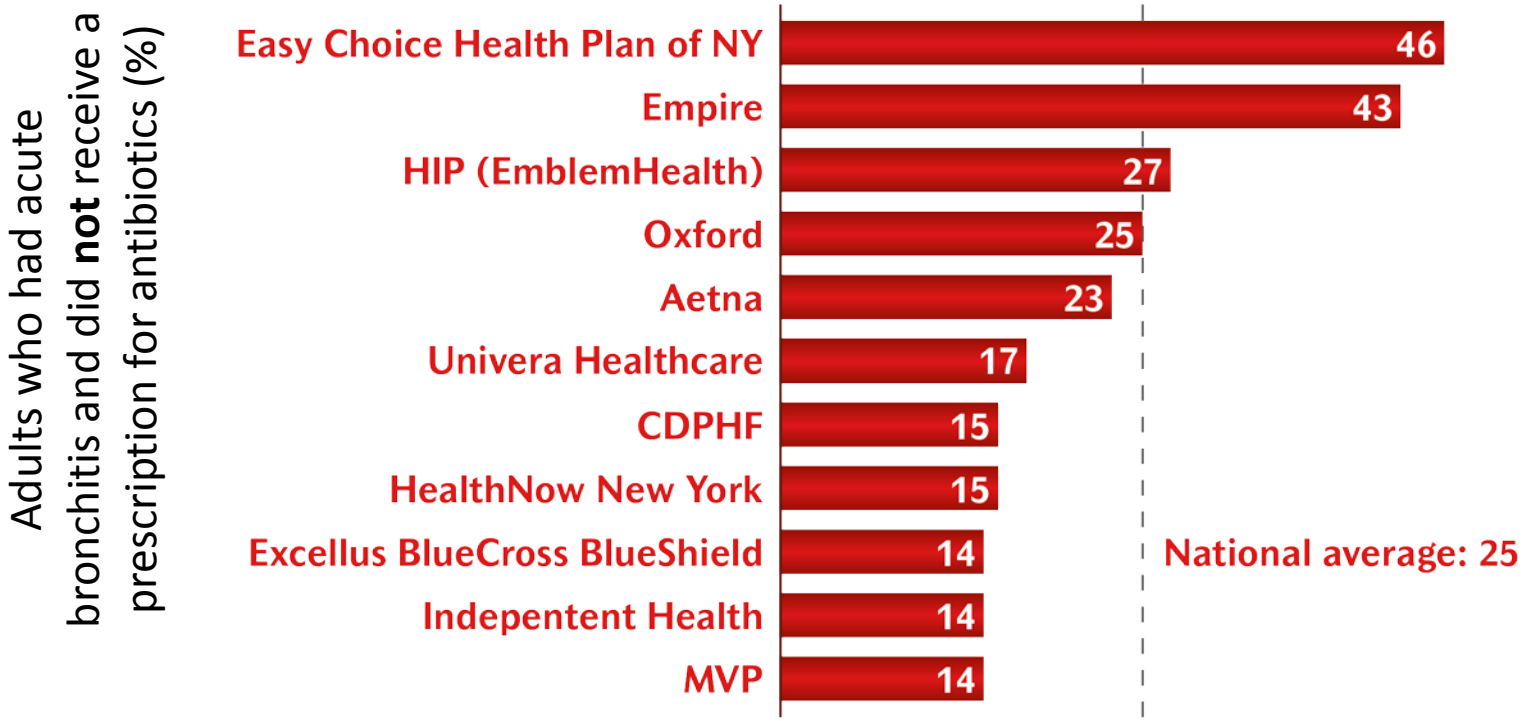
- A framework to facilitate change towards appropriate use of antibiotics[1]
- The aim is to adopt a **patient-centered symptomatic management** strategy
  - Flexible, interlinking framework
  - Adaptable across countries
  - Can provide a global and regional framework for change



1. Essack S, *et al. Int J Clin Pract*. 2013;67(S180):4–9

Success of antibiotic stewardship varies by health plan

Commercial Healthcare Maintenance Organization health plan performance on **avoidance of antibiotic therapy** in adults with acute bronchitis in New York



Higher scores denote better performance.

Figure adapted from: Burns J. Manag Care. 2014 Apr;23(4):26-30, 32-3. Data source: 2013 Health Plan Comparison in New York,' N.Y. State Department of Health, citing data from the National Committee for Quality Assurance (NCQA).

1. Burns J. Manag Care. 2014 Apr;23(4):26-30, 32-3.

Call to action: reduce inappropriate antibiotic use

Where can Managed Care make a change?

Educate prescribers and patients (GRIP)

Highlight cost savings achievable with antibiotic stewardship

Enhance use of treatment decision making tools in primary care

Incentivise symptomatic treatment in primary care, especially for RTIs

Enable pharmacists to issue "prescriptions" for reimbursable symptomatic OTC treatments

Reimburse when GPs prescribe OTC products for symptomatic treatment or for patient counsel on inappropriate antibiotic use

Remove incentives for inappropriate antibiotic use

- Current financial incentives are often at odds with best clinical practice
- Need to increase use of revenue models that are not dependent on number prescriptions filled, i.e. remove financial incentives to increase volume of antibiotics prescribed
  - Administration charges vs. pricing models
- Consider how to tackle physician concern about unhappy patients who may give low satisfaction scores if they have not received a prescription for antibiotics

Incentivize development of novel antibiotics and stewardship of existing antibiotics

- Consider financial incentives for symptomatic treatment of RTIs
- Lobby for policies that introduce financial incentives (e.g. value-based reimbursement) to encourage development of novel antibiotics
- Drive development and implementation of large-scale antibiotic stewardship programmes
  - Invest in tools to support this, for example:
    - Tools making use of electronic medical records to support health plan monitoring
    - Clinical decision-making tools for primary and secondary care
  - Encourage health plan involvement/financial support of local and regional stewardship programmes

Summary and conclusions

- Antibiotic resistance is a substantial and growing global public health threat in the US[1,2]
- The cost of antibiotics is relatively low from payer and insurance companies' perspectives, but the cost and impact of antibiotic resistance is potentially crippling
  - Consider financial incentives for symptomatic treatment of RTIs
- The most common category for adult antibiotic prescriptions is RTIs,[3] despite the fact that many RTIs are non-bacterial[4–6]
- The call to action to reduce inappropriate use of antibiotics is **urgent**
- Managed care can contribute to antibiotic stewardship, particularly in the field of RTIs, by providing incentives for OTC symptomatic treatment and supporting implementation of stewardship programmes
- There is a key opportunity for primary care to educate, advise and reassure:
  - Physiology and duration of URTI symptoms
  - Efficacy of appropriate treatment options
  - Highlighting appropriate symptomatic treatment

1. Centers for Disease Control and Prevention. Antibiotic / antimicrobial resistance. Available at: http://www.cdc.gov/drugresistance/ Accessed 17 August 2015. WHO. Antimicrobial resistance. Fact sheet 194. Updated April 2015. Accessed August 2015. Link: http://www.who.int/mediacentre/factsheets/fs194/en/. 3. Shapiro DJ, et al. J Antimicrob Chemother. 2014 Jan;69(1):234-40. 4. Foden N., *et al. Br J Gen Pract*. 2013;63:611–613. 5. Ah-See K., *et al. BMJ* 2007;334:358–361. 6. CDC. Accessed August 2015. Link: http://www.cdc.gov/getsmart/community/materials-references/print-materials/hcp/adult-acute-cough-illness.pdf