Inappropriate antibiotic use for cough and URTIs

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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

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Alike van der Velden: disclosures

- Employee of Julius Centre for Health Sciences and Primary Care – University Medical Centre Utrecht
- Research supported by The Netherlands organization for health research and development (ZonMw) and the European Union (FP7)
- The consumer survey reported herein was conducted by RB
- 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

Patient consultation for cough and RTI

- Reasons for consultation:
  - Worry about the illness (severity, duration)
  - Rule out serious complication
  - Medication to treat or reduce their symptoms
    - Physicians tend to over-estimate patients' desire for an antibiotic[1,2]
- Patients' expectations are usually not directly explored
  - Reassurance, diagnosis (based on physical examination)
  - Overall advice and/or with respect to pain/symptomatic relief[3]
  - Information on natural course and self-limitedness of disease
- Misperceived patient expectations, limited time, patients' pressure for antibiotics – often for wrong reasons – diagnostic uncertainty
  - Overprescribing of antibiotics for respiratory disease

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.

Antibiotics for cough/bronchitis and URTIs

- Most RTIs have a viral origin
  - More than 90% of acute coughs are non-bacterial[1]
  - Bronchitis: ~50% no causal agent, >25% viral, <25% bacterial
- Favorable natural course of disease
  - Often self-limiting
  - Complications are rare
- Limited effectiveness of antibiotics
  - Bronchitis: NNTB=8, reduction in duration of symptoms=14 hours[2]
  - Sinusitis: NNTB=18[3]
  - Sore throat/tonsillitis: NNTB=20[4]

NNTB = Number needed to treat for benefit

1. http://www.cdc.gov/getsmart/community/materials-references/print-materials/hcp/adult-acute-cough-illness.pdf. Accessed May 2015. 2. Smith S. *et al. Cochrane Database Syst Rev*. 2014;3:3. 3. Lemiengre M. *et al. Cochrane Database Syst Rev*. 2012;10:4. 4. Spinks A. *et al. Cochrane Database Syst Rev*. 2013;11:4.

ARTI 4

Formulier luchtwegconsulten

57374

nr 144 - 45

Consultdatum: 15 04 2009 0

A. Persoonskenmerken patiënt

Geboortedatum 03 - 04 - 1960

Geslacht ☒ man ☐ vrouw, ☐ zwanger/zogend

Algemene gezondheidstoestand goed 1 ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ slecht

Comorbiditeit ☒ geen

☐ ja, nl: ☐ COPD ☐ gecompromitteerd immuunsysteem, maligniteit

☐ hartfalen ☐ aangeboren hart/long aandoening

☐ diabetes mellitus ☐ ernstige neurologische aandoening

☐ anatomische afwijking KNO-gebied (bv Syndroom van Down, palatoschisis)

☐ status na acuut reuma ☐ anders, nl:

Ooroperaties in voorgeschiedenis (incl. buisjes) ☒ nee ☐ ja

Overgevoeligheid voor antibioticum ☒ nee ☐ ja, welk antibioticum

Rookt de patiënt ☒ nee ☐ ja

B. Algemene klachten patiënt

Klachten Hoesten + Dyspnoe

Eerder contact in deze episode ☒ nee ☐ ja, verergering tov vorig contact ☐ nee ☐ ja

toen antibiotica voorgeschreven ☐ nee ☐ ja

Hoe vaak heeft de patiënt een vergelijkbare episode gehad in het afgelopen jaar 00 keer

Mate van ziek zijn *(oordeel huisarts)* mild 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐ ernstig

Duur van de klachten 07 dagen

Koorts *(vlg patiënt)* ☒ nee ☐ ja, , °C, sinds dagen

Hoestklachten ☐ nee ☒ ja

Denkt u dat patiënt antibiotica verwacht zeker niet 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☒ zeker wel

C. Belangrijkste klacht

Oorklachten ☒ nee ☐ ja, ga door naar oorklachten (1, zoz)

Keelklachten ☒ nee ☐ ja, ga door naar keelklachten (2, zoz)

Verkoudheid/sinusklachten ☒ nee ☐ ja, ga door naar verkoudheid/sinusklachten (3, zoz)

Lagere luchtwegklachten ☐ nee ☒ ja, ga door naar lagere luchtwegklachten (4, zoz)

ARTI 4

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1. Oorklachten

	rechts	links
Oorpijn	☐ nee ☐ ja	☐ nee ☐ ja
Loopoor	☐ nee ☐ ja	☐ nee ☐ ja
Grijpt naar oor	☐ nee ☐ ja	☐ nee ☐ ja
Trommelvlies beoordeelbaar	☐ nee ☐ ja	☐ nee ☐ ja
Kleur	☐ normaal ☐ dof ☐ rood	☐ normaal ☐ dof ☐ rood
Stand	☐ normaal ☐ ingetrokken ☐ bomberend	☐ normaal ☐ ingetrokken ☐ bomberend

2. Keelklachten

Keelpijn	☐ nee ☐ ja	Exsudaat farynx/tonsillen	☐ nee ☐ ja
Vurig rode keel	☐ nee ☐ ja	Peritonsillair infiltraat	☐ nee ☐ ja
Slikklachten	☐ nee ☐ ja	Gezwollen lymfeklieren in hals	☐ nee ☐ ja
		Zo ja, zeer gezwollen en pijnlijk in gehele halsregio	☐ nee ☐ ja

3. Verkoudheid/sinusklachten

Neus verstopt	☐ nee ☐ ja	Recente verkoudheid/griep	☐ nee ☐ ja
Loopneus	☐ nee ☐ ja	Pijn erger bij voorover bukken	☐ nee ☐ ja
Purulente rinorroe	☐ nee ☐ ja	Pijn in tand/kiezen bij kauwen	☐ nee ☐ ja
Frontale/Maxillaire pijn	☐ nee ☐ ja	Purulent secreet in keel	☐ nee ☐ ja

4. Lagere luchtwegklachten

Piepen	☐ nee ☒ ja	Ophoesten sputum	☐ nee ☒ ja
Dyspnoe, benauwd	☐ nee ☒ ja	Zo ja, purulent	☐ nee ☒ ja
Tachypnoe	☐ nee ☒ ja	Afwijking bij auscultatie	☐ nee ☒ ja
Pijn bij doorzuchten	☒ nee ☐ ja	Zo ja, links-rechts verschil	☒ nee ☐ ja
		Vermoedt u een pneumonie	☒ nee ☐ ja

Evaluatie

Bronchitis R78 ICPC-code

Beleid

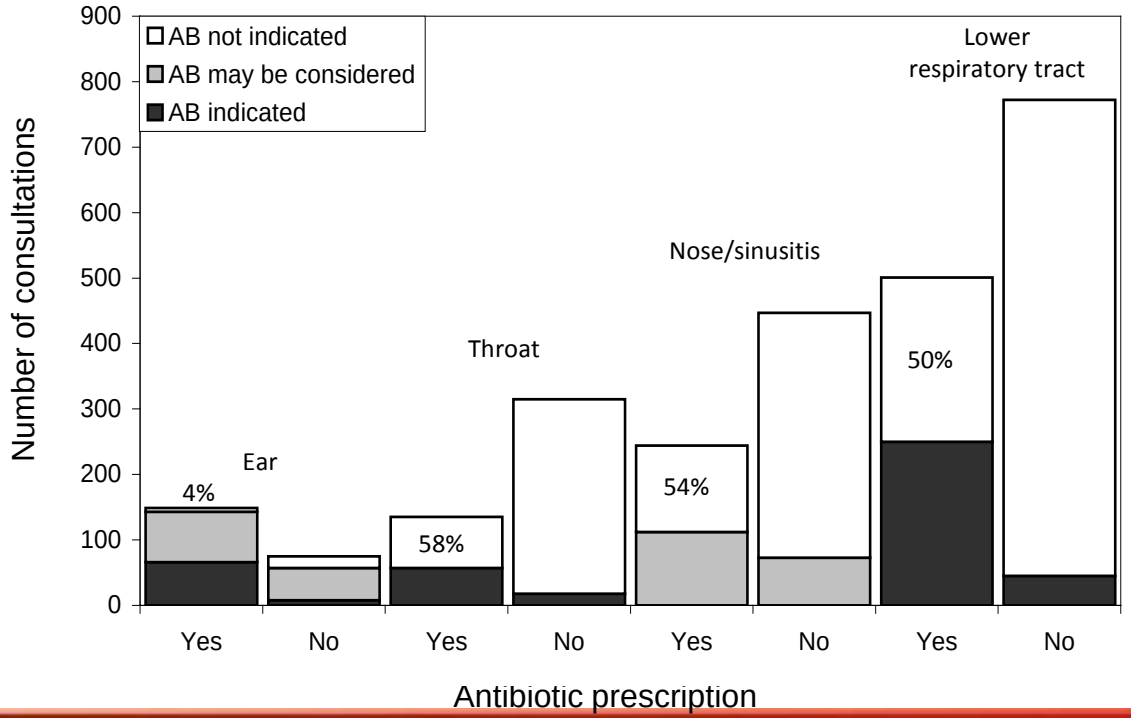
Geruststelling, advies	☐ nee ☒ ja	Verwijzing naar specialist	☒ nee ☐ ja
Symptomatische behandeling	☒ nee ☐ ja	Aanvullend onderzoek (bv Rö, lab)	☒ nee ☐ ja
Antibiotica prescriptie	☐ nee ☒ ja, welk		

antibioticum Doxy 1 d A A02

(niets invullen)

Overprescribing of antibiotics for RTIs
Data from The Netherlands[1]

- In one-third of RTI consultations, an antibiotic is prescribed
- Overprescribing: 46% of prescriptions
- Most overprescribing for lower RTIs (cough/bronchitis)



1. Dekker A. *et al. Fam Pract*. 2015 Apr 24. (Epub ahead of print).

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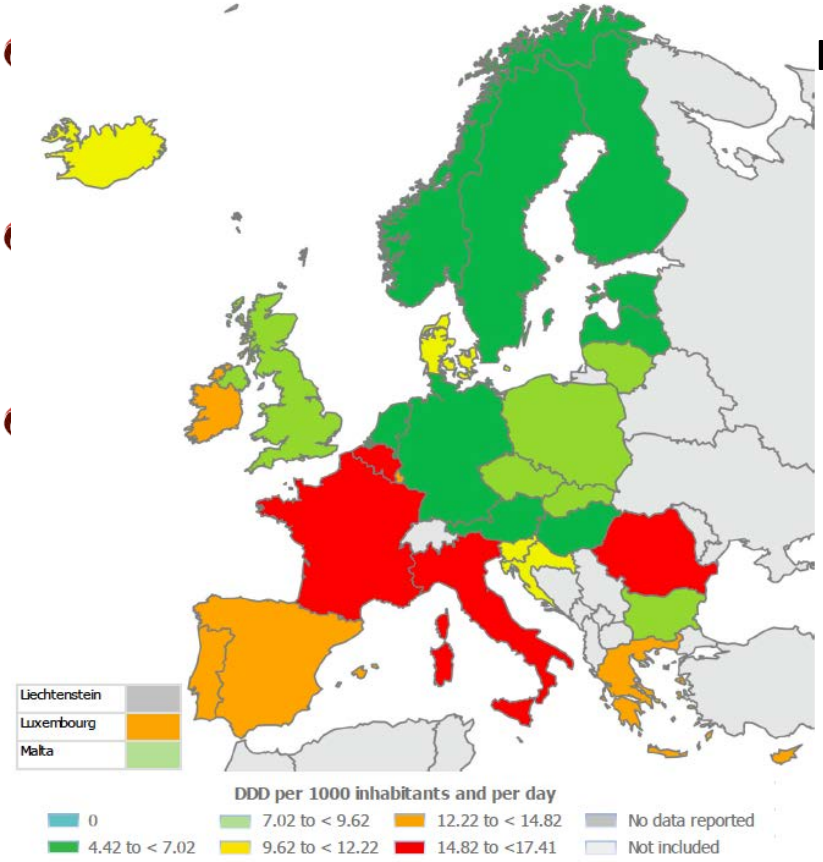
Consequences of antibiotic overprescribing

- Bacterial resistance

Consumption of beta-lactam penicillins



Streptococcus pneumoniae isolates non-susceptible to penicillin

nsultation)

Goossens, H et al. *Lancet* 2005, 365(9459),579–587
Riedel S, et al. *Eur J Clin Microbiol Infect Dis*. 2007;26(7):485–490
ECDC 2012. Accessed May 2015. Link: http://ecdc.europa.eu/en/publications/Publications/antimicrobial-consumption-europe-esac-net-2012.pdf

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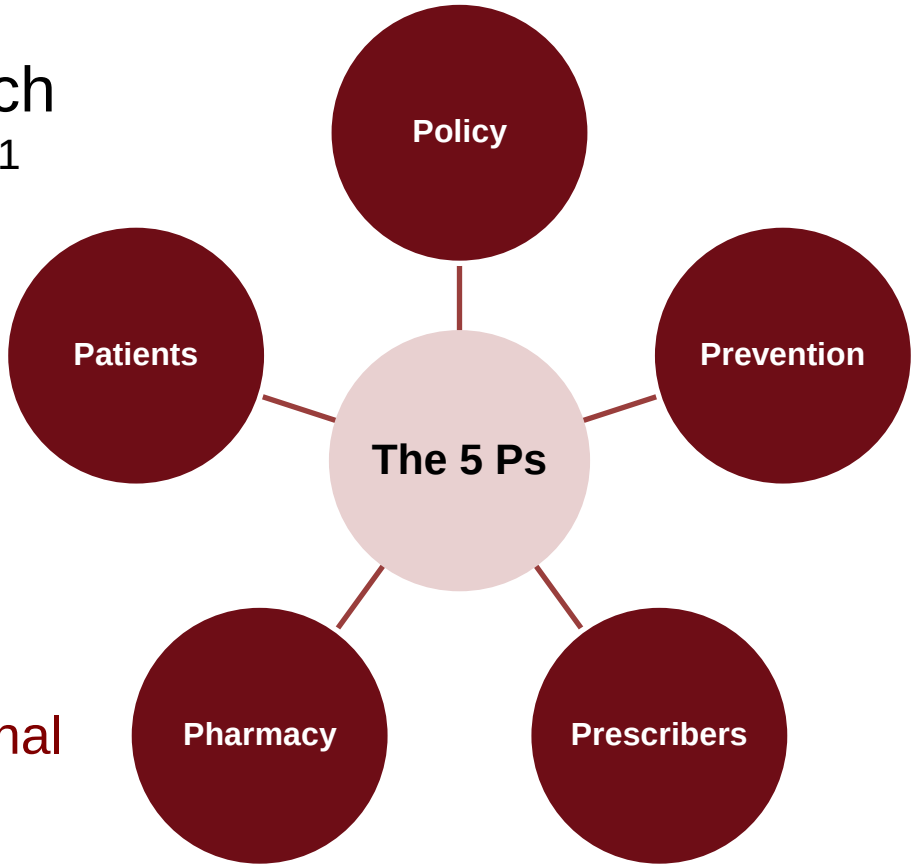
The GRIP 5P framework

- Framework for an evidence-based, non-antibiotic approach in the management of URTIs[1]



- Approach aims to change behavior
  - 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.

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Patient behavior in RTI consultation
Study methods

- **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)
    - Did they obtain the product prescribed or recommended
    - Antibiotic use

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

Results: consultation for cough – why, who, outcome*

- Reasons for consulting any physician for cough:
  - "I needed a prescription" – 26.1%
  - "This person is the expert" – 23.6%
  - "This person knows my medical history" – 21.2%
  - "This is the person I trust the most" – 21.2%
- Who do they consult for cough?
  - 10.7% of subjects contacted a HCP
  - 9.0% of subjects contacted a physician
  - 8.6% contacted a GP
- For subjects consulting any physician for cough:
  - 18.9% were recommended an antibiotic
  - 19.2% were prescribed an antibiotic

* Averaged results for chesty cough/chest congestion and dry tickly cough.

Results: antibiotic use for RTI

All HCP, 33 countries	Antibiotic use	No	Yes*
Total number of encounters for all conditions, N (% total)		52,769 (80)	13,306 (20)
RTI† encounters, N		10,104	5,259
– Proportion of all RTI encounters, %		66	34
Chesty cough‡ encounters, N		1,474	941
– Proportion of chesty cough encounters, %		61	39
Dry tickly cough encounters, N		2,330	1,180
– Proportion of dry tickly cough encounters, %		66	34
All cough encounters, N		3,804	2,121
– Proportion of all cough encounters, %		64	36
– Proportion of total encounters for all conditions, %		–	**16**

*For all conditions, most encounters resulting in antibiotic use were in Indonesia (37%), UAE (35%) and Malaysia (35%)

†RTI: sore throat; nasal congestion; sinus pain; laryngitis (no hay fever), chesty cough, dry/tickly cough.
‡Chesty cough/chest congestion.

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Results: contacts and prescribing for cough

Countries	Total*	Brazil	Germany	India	Indonesia	Malaysia	UAE	UK	USA
Subjects with chesty cough/ chest congestion									
% contacted any HCP	8.6	4.0	4.7	12.4	16.0	13.7	9.7	6.2	8.5
% contacted GP	7.1	3.8	3.0	11.6	14.7	12.0	8.0	4.7	7.4
% Ab Rx†	21.7	14.3	10.0	17.2	28.0	17.5	11.6	23.1	33.3
Subjects with dry tickly cough									
% contacted any HCP	12.7	13.6	8.3	19.3	15.8	13.9	17.4	4.9	5.1
% contacted GP	10.0	10.2	6.1	17.0	14.3	12.0	13.8	2.5	3.8
% Ab Rx†	16.6	11.9	0.0	12.9	33.3	18.8	14.5	21.4	23.8

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

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Conclusion: what do these data tell us?

- >1/5 of subjects expect a prescription for cough
- HCP contacts driven by trust and confidence in the HCP
- >1/3 all RTI encounters and >1/3 all cough encounters resulted in antibiotic use
- Cough accounted for ~16% of antibiotic use, a greater proportion than any other condition
- GPs accounted for most HCP contacts for cough
- Many patients with uncomplicated cough still receive antibiotics

Recommendations

- Inappropriate antibiotic prescribing for cough must be reduced to mitigate further growth of antibiotic-resistant infections
- Further professional education is needed for prescribers, especially in primary care, with an emphasis on communication and symptomatic relief
- GPs are in a key position to advise and educate patients on symptomatic treatment options
- Patient education on appropriate expectations and effective self-management is needed
- Coordinated changes at global and local levels are needed for effective implementation of antibiotic stewardship

Implementing GRIP's 1, 2, 3 approach

- GP, nurses and pharmac … ach to educate their patients wit … ct them towards self-managemer
- GRIP's 1, 2, 3 approach
  - Take a consistent appro
  - Put the patient at the ce
  - Direct towards symptom
- GRIP's 1, 2, 3 approach:
  - Address patients conce
  - Be vigilant – assess sever
  - Counsel on effective self-
- A toolkit with template mate … GRIP website[2]
- GRIP is committed to conti …

1. van der Velden AW, *et al. Int J Clin Pract*. 2013;67(S180):10–16.
2. GRIP. Available at: www.grip-initiative.org. Accessed May 2015.

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