Canadian Consensus Development Conference on Surveillance and Screening for AROs

Patient Involvement

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Question 5d.

5d

① What can patients and the public do to help?

① Would more education of the public and patients re: appropriate use of antibiotics help reduce the incidence of AROs, and what would be the most effective strategy?

What can patients, the public, and health care professionals do to help?

5d.1

- Theoretical frameworks:
- Adopting a more pro-active role in the care process
  - Patient participation
  - Patient empowerment
  - Patient involvement

Davey P et al. Clinical Microbio and Infect, Volume 8 Supplement 2, 2002

What can patients, the public, and health care professionals do to help?

5d.1

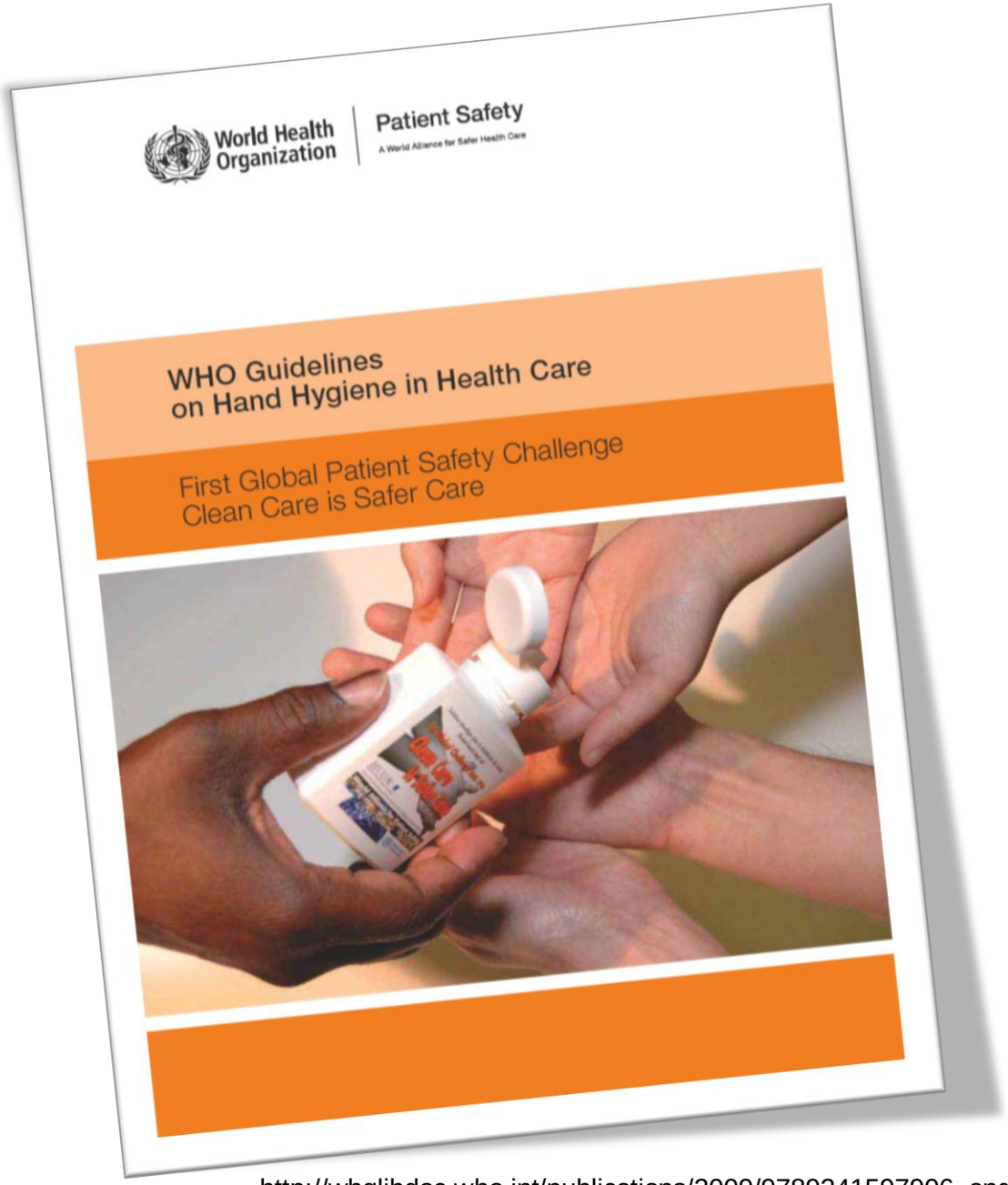
Patients and the public could help prevent the spread of ARO in numerous ways:

- Promotion of good hygiene practices in the community and in healthcare settings
  - Hand hygiene
  - Cough etiquette

WHO Guidelines on Hand Hygiene in Health Care. 2009, World Health Organisation: Geneva.

Longtin, Y., et al., *Evaluation of patients' mask use after the implementation of cough etiquette in the emergency department.* Infect Control Hosp Epidemiol, 2009. **30**: p. 904-8.

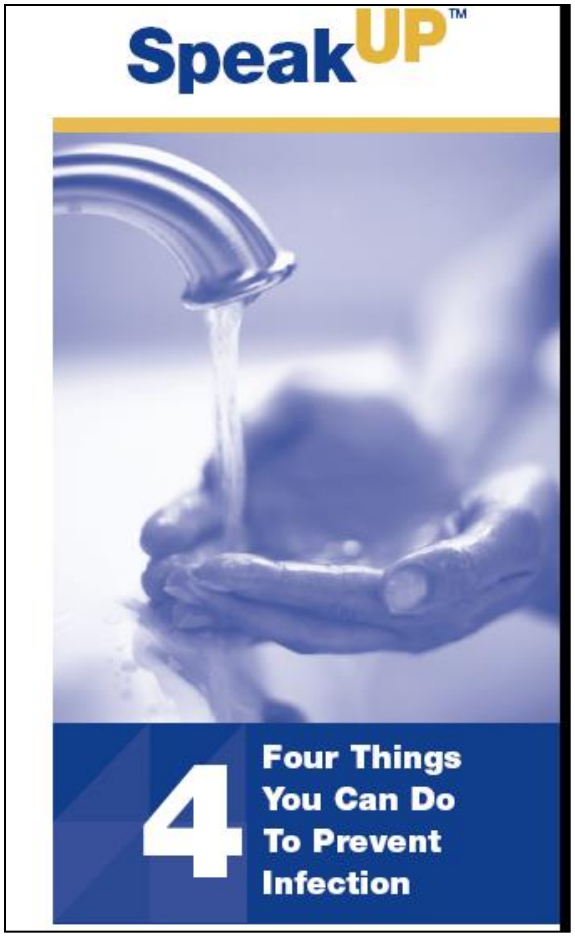
Professional organizations and patient involvement in hand hygiene



http://whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf

WHO, 2009

Patient Participation & Hand Hygiene



The Joint Commission

Avoiding contagious diseases like the common cold, strep throat, and the flu is important to everyone. Here are four easy things you can do to fight the spread of infection.

1.

Clean your hands.

- Use soap and warm water. Rub your hands really well for at least 15 seconds.
- Or, if your hands do not look dirty, clean them with alcohol-based hand sanitizers. Rub the sanitizer all over your hands, especially under your nails and between your fingers, until your hands are dry.
- Clean your hands before touching or eating food. Clean them after you use the bathroom, take out the trash, change a diaper, visit someone who is ill, or play with a pet.

2.

Make sure health care providers clean their hands and wear gloves.

- Doctors, nurses, dentists and other health care providers come into contact with lots of bacteria and viruses. So before they treat you, ask them if they've cleaned their hands.
- Health care providers should wear clean gloves when they perform tasks such as taking throat cultures, pulling teeth, taking blood, touching wounds or body fluids, and examining your private parts. Don't be afraid to gently remind them to wear gloves.

3.

Cover your mouth and nose.

Many diseases are spread through sneezes and coughs. When you sneeze or cough, the germs can travel 3 feet or more! Cover your mouth and nose to prevent the spread of infection to others.

- Use a tissue! Keep tissues handy at home, at work and in your pocket. Be sure to throw away used tissues and then clean your hands.
- If you don't have a tissue, cover your mouth and nose with the bend of your elbow or hands. If you use your hands, wash them right away.

4.

If you are sick, avoid close contact.

- If you are sick, stay away from other people. Stay home if you have a fever. Call work or school and tell them you are sick.
- When you go for medical treatment, call ahead and ask if there's anything you can do to avoid infecting people in the waiting room.

These steps can help prevent the spread of colds, the flu*, and diseases like

- Pneumonia*
- Whooping cough*
- SARS
- Chicken pox*
- Tuberculosis
- Strep throat
- Mumps*
- Measles*
- Rubella* (also known as German measles)

*Remember to get a shot to prevent this disease or infection.

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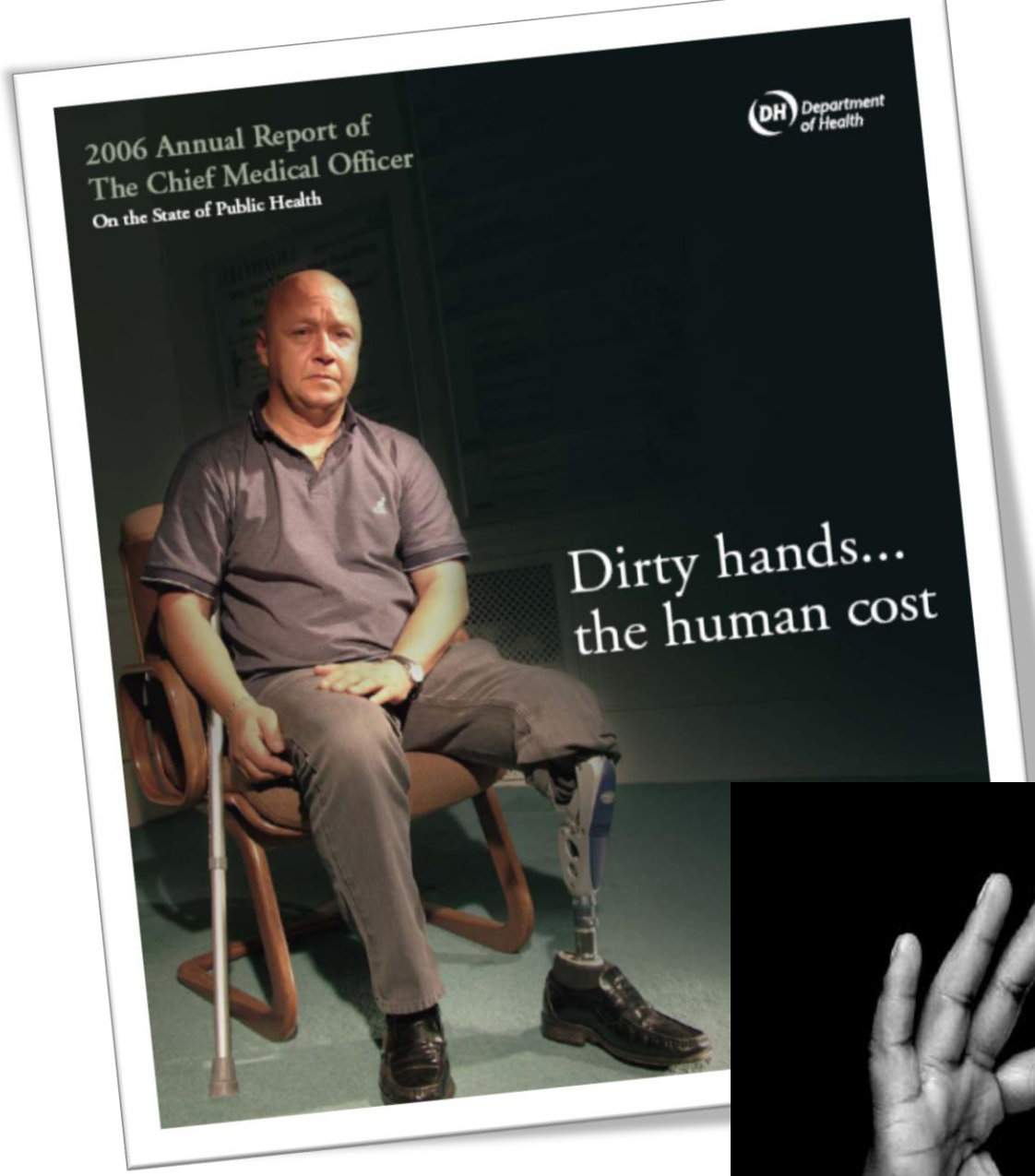

2006 Annual Report of
The Chief Medical Officer
On the State of Public Health
Department of Health
Dirty hands...
the human cost


CLEAN
HANDS?
IT'S
K TO ASK

Canada

Si vous êtes suivi par un professionnel de la santé, n'hésitez pas à lui dtemander de se nettoyer les mains avant de vous examiner.

Les patients, les membres de leur famille et les travailleurs de la santé ont tous un rôle à jouer dans la réduction des infections nosocomiales. En tant que patient, en plus de veiller à vous laver souvent les mains, n'hésitez pas à demander à votre professionnel de la santé de faire de même avant de vous prodiguer des soins. Ensemble, nous pouvons changer les choses et réduire les infections en adoptant pour de bon une hygiène des mains optimale.

- Wide support from numerous organizations
- However, many questions remain unanswered
  - Efficacy
  - Patient acceptance
  - HCW perception
  - Impact on patient-HCW relationship

Efficacy

Efficacy

Are patient participation programs associated with improvements in hand hygiene compliance?

What is the evidence?

Efficacy

- Few studies have assessed the efficacy of PP programs to improve hand hygiene compliance
  - Discrepant results

Efficacy of PP programs

	South Jersey USA 1999[1]	Oxford U.K. 2001[2]	Pennsylvania USA 2004[3]	Ohio USA 2008[4]	Pennsylvania USA 2008[5]
Did you ask a nurse?	90%	100%	95%	3-45%	15%
Did you ask a physician?	32%	35%	31%	0%	8%
Soap Consumption	↑ 34% (p=0.02)	↑50% (NS)	↑94% (p < 0.001)	?	?

1. McGuckin M. et al. Am J Infect Control. 1999 Aug;27(4):309-14.
2. McGuckin M. et al. J Hosp Infect. 2001 Jul;48(3):222-7
3. McGuckin M. et al. Am J Infect Control. 2004 Jun;32(4):235-8.
4. Lent V. et al. Am J Infect Control 2008; In press
5. Julian KG., Infect Control Hosp Epidemiol. 2008 Aug;29(8):781-2.

Efficacy

- Few data show that soap consumption **may** increase
- However:
  - No data regarding hand hygiene compliance!
  - Data from an era of low hand hygiene compliance
    - Can these results be extended to settings using a multi-modal strategy who obtained “relatively high” compliance?
- Need contemporary data!

What can patients, the public, and health care professionals do to help?

5d.1

Patients and the public could help prevent the spread of ARO in numerous ways:

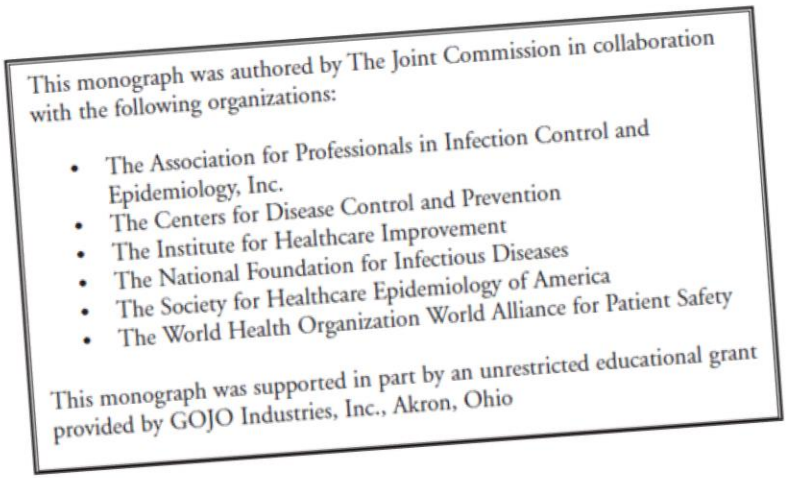
– Quality of care auditors

- Hand hygiene
- Cough etiquette

Bittle, M.J. and S. LaMarche, *Engaging the patient as observer to promote hand hygiene compliance in ambulatory care.* Jt Comm J Qual Patient Saf, 2009. **35**: p. 519-25.

Longtin, Y., et al., *Evaluation of patients' mask use after the implementation of cough etiquette in the emergency department.* Infect Control Hosp Epidemiol, 2009. **30**: p. 904-8.

MEASURING HAND HYGIENE ADHERENCE: OVERCOMING THE CHALLENGES



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- The Association for Professionals in Infection Control and Epidemiology, Inc.
- The Centers for Disease Control and Prevention
- The Institute for Healthcare Improvement
- The National Foundation for Infectious Diseases
- The Society for Healthcare Epidemiology of America
- The World Health Organization World Alliance for Patient Safety

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The Joint Commission

CDC
Centers for Disease Control and Prevention

SHEA
The Society for Healthcare Epidemiology of America

Institute for Healthcare Improvement

*www.**jointcommission**.org/assets/1/18/hh_monograph.pdf*

The Joint Commission

Patients

In some organizations, patients are asked to provide information on health care worker hand hygiene. (Using patients as observers is not the same as using patients to remind health care workers to perform hand hygiene, which is a commonly used strategy for improvement; that strategy is described in more detail in Chapter 9.) Using patients as observers may be most effective in settings such as ambulatory care, in which patients are relatively healthy and where independent observers are rarely used. Keep in mind that staff need to know they should perform hand hygiene in front of a patient; the patient will not see hands being cleansed if it is done outside a patient's field of vision.

*www.**jointcommission**.org/assets/1/18/hh_monograph.pdf*

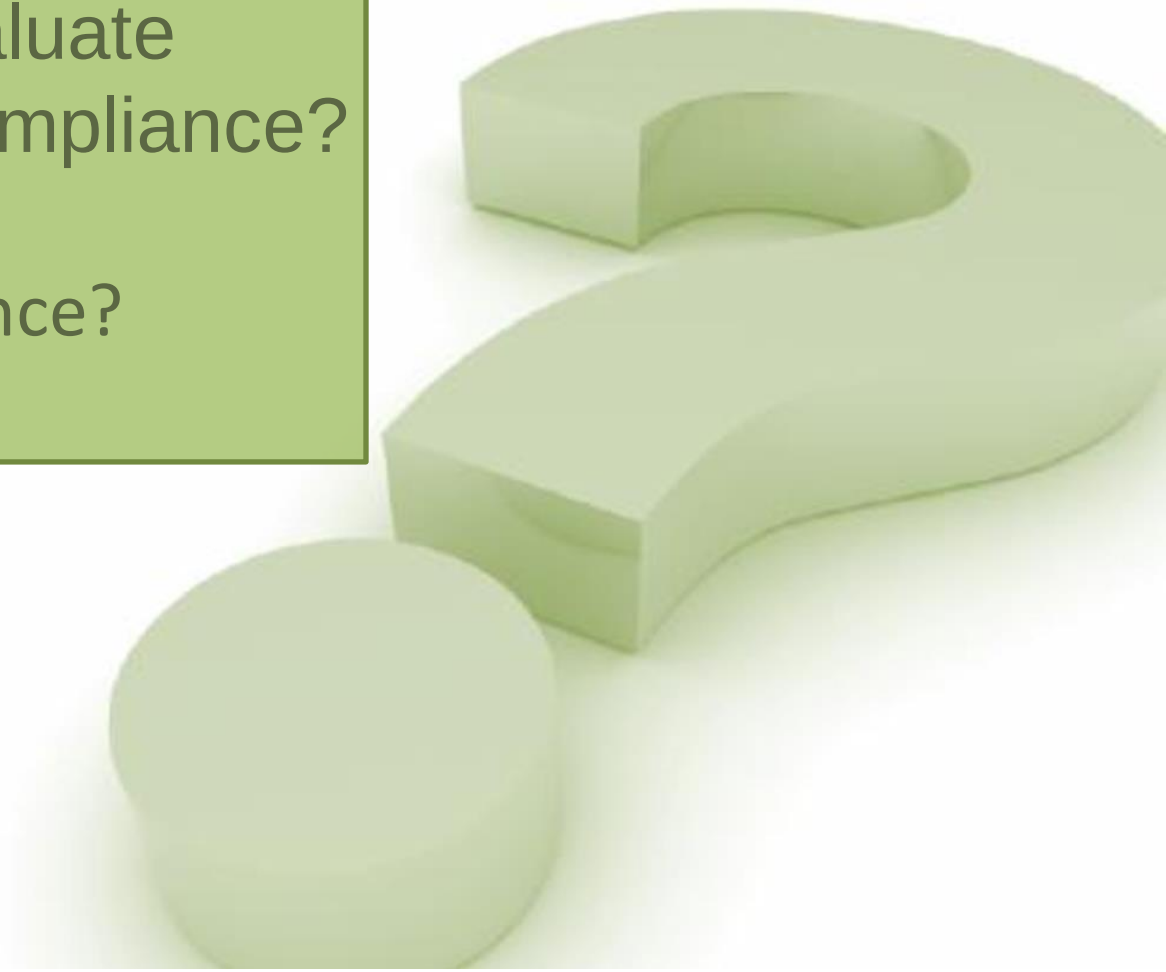
Accreditation Canada

- Standard 4.5
  - The organization monitors compliance with IPC policies and procedures and makes improvements to the policies and procedures and/or education program based on the results
  - Observation can be done by a trained observer within an organization, or by patients/families within an organization or in the community
  - Organizations providing services in client homes who find direct observation not possible can consider alternative methods, such as Questions on client satisfactions surveys that ask about staff's hand hygiene compliance.

Efficacy

Can patients evaluate hand hygiene compliance?

What is the evidence?



JOHNS HOPKINS
MEDICINE

BE A PARTNER IN YOUR HEALTHCARE

Clinic _____

Date _____

Healthcare Worker	**Performed hand hygiene**
__ Physician	__ Yes __ No __ Unsure
__ Other	__ Yes __ No __ Unsure

Comments: _____

_____

_____

Be a partner in your health care!

➢ Our goal is to provide you with safe, high quality healthcare. We welcome any additional comments or suggestions.

➢ Using soap & water or alcohol rubs (such as purell) helps to prevent the spread of germs.

➢ Please observe the healthcare providers while you are in clinic today to see if they are washing their hands or using the alcohol rub before and after providing your care.

➢ Be a partner in your health care by completing the reverse side of this card and placing in receptacle in the reception area.

* The card is issued to the patient at check-in. The patient receives a small pencil to complete the card and places the card in a yellow drop box on leaving the clinical practice.

Patient evaluation of Hand Hygiene compliance

	Yamada SM*	Bittle MJ
Setting	Outpatient clinic, Tripler Army Medical Center Honolulu, HI	Outpatient clinic, Johns Hopkins Hospital
Number patients enrolled	1520	?
Response rate	43.3-75.5%	20% (18-72%)
Compliance as per patients	96-100%	88%
Compliance as per nurses prior to study (inpatient)		63-78%
Concordance of observations		100% (n=65)

* Abstract only

Yamada SM AJIC 2008:36(5);E114-E115

Bittle MJ *et al*. Jt Comm J Qual Patient Saf. 2009;35(10):519-25.

Patient Involvement in HH observation

- Logical step in the involvement of patients
- Recommended by many organizations
- However, poorly documented and many questions remain unanswered

Risks and Benefits

- **Potential disadvantages**
  - Could cause anxiety to patients if they witness suboptimal quality of care
  - Could modify patient-caregiver relationship negatively
    - Relationship could become more confrontational
  - Possible bias:
    - Desire to please HCW/desire to take “revenge”
  - Places more responsibility onto vulnerable patients
  - Share responsibility in case of adverse event?

Longtin Y et al. Arch Intern Med. 2012;172(19):1516-7.
Longtin Y et al. Mayo Clin Proc. 2010 Jan;85(1):53-62.

Question 5d.2

5d.2

- Would more education of the public and patients regarding appropriate use of antibiotics help reduce the incidence of AROs, and what would be the most effective strategy?

Patients, antimicrobials and microbial resistance

- Numerous misconceptions from the public regarding indications to use antimicrobials

*World Health Organization. Report on Infectious Diseases. Overcoming antimicrobial resistance. Geneva:World Health Organization, 2000; [*http://www.who.int/infectious-disease-report/2000/index.html)

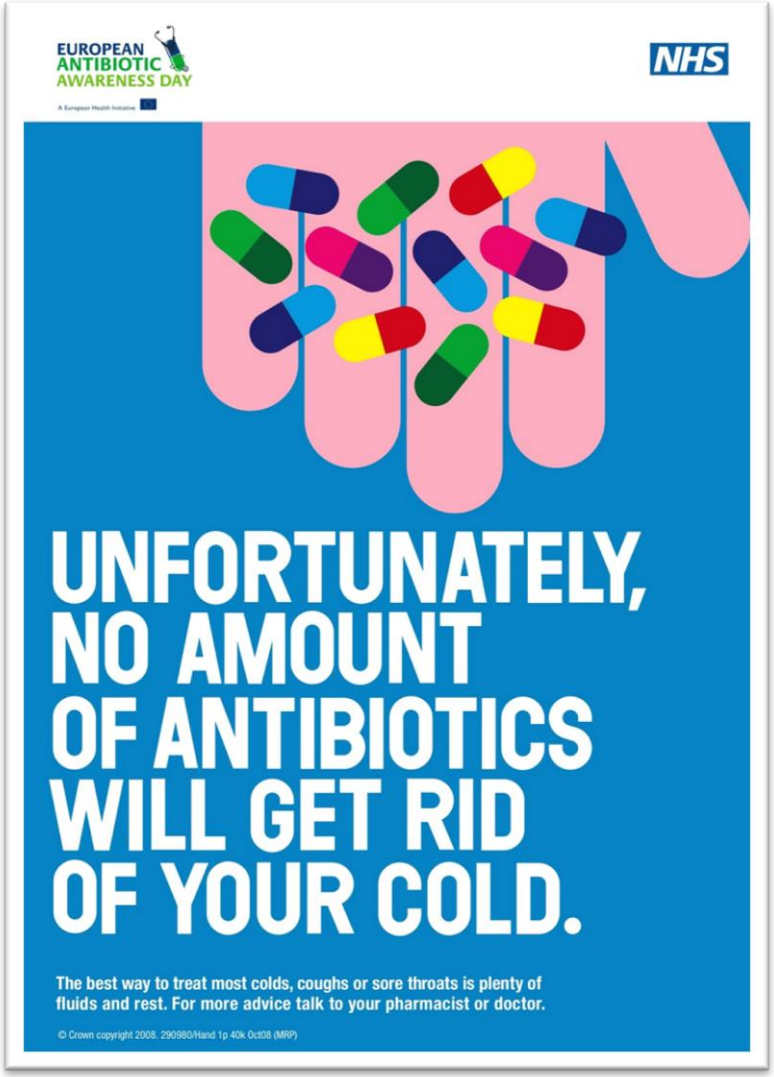
Public education and antimicrobial use

- Numerous public education campaigns have been conducted regionally and nationally
- Intensity of campaigns varies widely
  - Simple internet campaigns
  - Expensive mass-media campaigns

Content of education programs

- Most public education campaigns have targeted respiratory tract infections

  – Rarely, UTI (Belgium)



Huttner, B., et al., *Characteristics and outcomes of public campaigns aimed at improving the use of antibiotics in outpatients in high-income countries.* Lancet Infect Dis, 2010. **10**(1): p. 17-31.

Content of education programs

- Prudent antimicrobial use
- Need to avoid overuse
- Lack of efficacy in viral infections
- Need to follow prescription and complete course
- Correlation between Abx use and resistance
- Risks associated with Abx
  - (C. difficile infections, candidiasis, toxicity, selection of ARO, etc.)

1. ECDC http://ecdc.europa.eu/en/healthtopics/antimicrobial_resistance/basic_facts/Pages/factsheet_general_public.aspx
2. Antibiotic Awareness Canada. http://antibioticawareness.ca/?page_id=73
3. CDC Get Smart http://www.cdc.gov/getsmart/antibiotic-use/antibiotic-resistance-faqs.html
4. WHO http://www.who.int/gpsc/5may/patient-tips.pdf

Setting up campaign

Use of multiple concomitant channels increases awareness

Communication channels

Posters	Pamphlets
Billboards*	Radio*
television,*	print media,
public transport advertisement*	Website
Letters	Guidelines and seminars

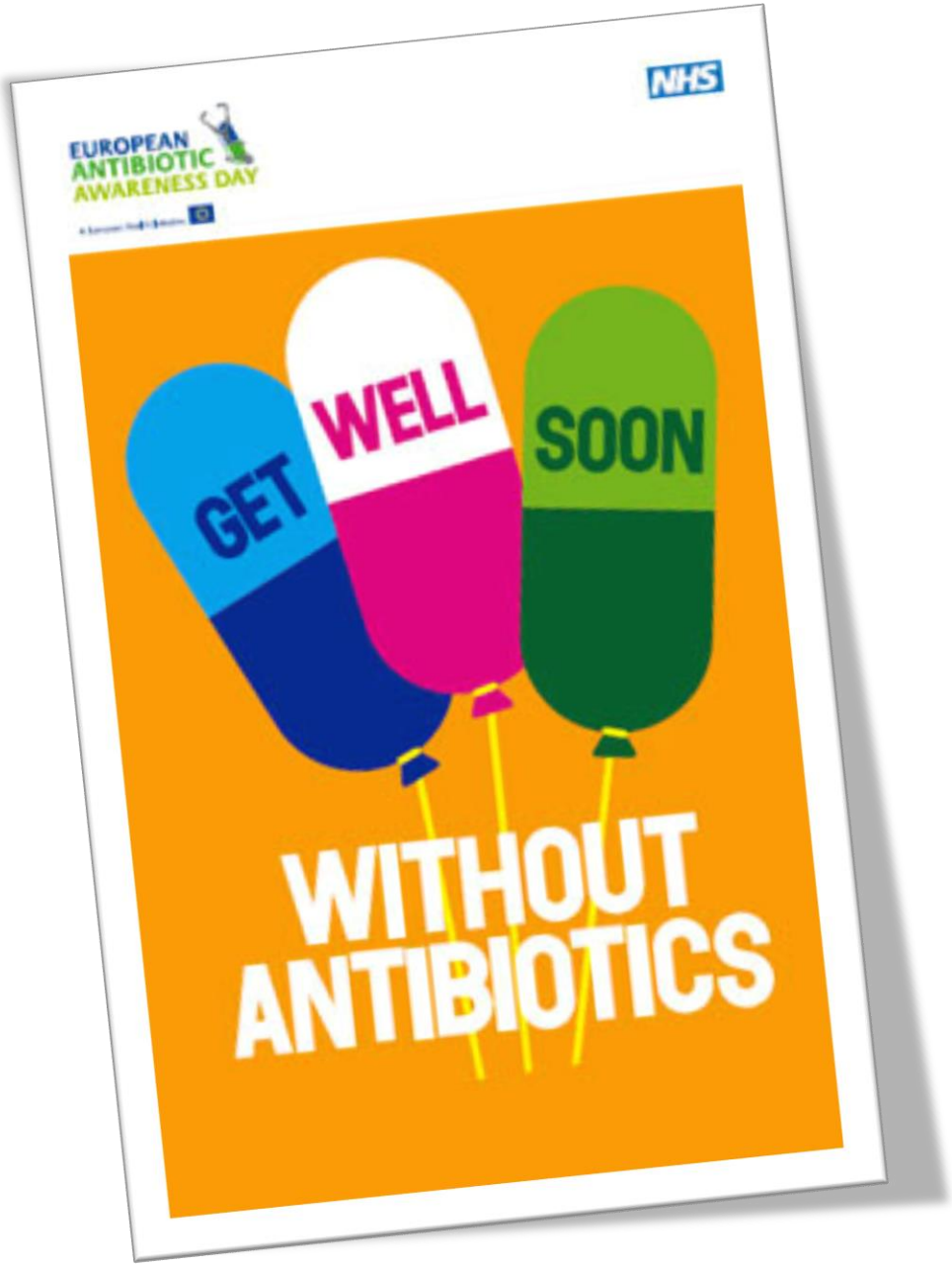
* Seasonal (costs)

Physicians: letters, non-prescription pads, cold care kits

Huttner, B., et al., *Characteristics and outcomes of public campaigns aimed at improving the use of antibiotics in outpatients in high-income countries.* Lancet Infect Dis, 2010. **10**(1): p. 17-31.

Freimuth, V., H.W. Linnan, and P. Potter, *Communicating the threat of emerging infections to the public.* Emerg Infect Dis, 2000. **6**(4): p. 337-47.

Effectiveness



Effectiveness of public education campaigns

- Outcome is most frequently antibiotic use rather than the prevalence of ARO
- Effect on Abx consumption
  - Some campaigns have been associated with 20-30% decrease in Abx use (mostly in children) (France, Belgium, USA, Iceland)
  - Other campaigns have not seen any change in Abx use (Greece, Spain, Norway, Luxembourg, N. Ireland, Israel, Germany)
  - Decrease easier to demonstrate if pre-intervention levels higher

Huttner, B., et al., *Characteristics and outcomes of public campaigns aimed at improving the use of antibiotics in outpatients in high-income countries.* Lancet Infect Dis, 2010. **10**(1): p. 17-31.

Effectiveness of public education campaigns

Reports susceptible to biases?

- Most campaigns are not designed as a clinical trial but as public health initiatives
- Absence control arms or analysis of pre-intervention trends – causality not proven
  - A controlled study in Wisconsin showed a 20% decrease **in both** arms
  - Many countries without any campaigns have seen decrease in Abx prescription
- Impact of vaccination not always accounted for (for S. pneumoniae)
- Control effect of seasonal variation of resp viruses often not conducted
- Publication bias?

Huttner, B., et al., *Characteristics and outcomes of public campaigns aimed at improving the use of antibiotics in outpatients in high-income countries.* Lancet Infect Dis, 2010. **10**(1): p. 17-31.

Belongia EA, Knobloch MJ, Kieke BA, Davis JP, Janette C, Besser RE. Impact of statewide program to promote appropriate antimicrobial drug use. *Emerg Infect Dis* 2005; **11:** 912–20.

Impact on prescription use

Table 1. Changes in number of ambulatory antibiotic prescriptions per 1000 inhabitants per year (PIY) in France between 2001 and 2009, stratified by data source, category of prescribing physician and infection type

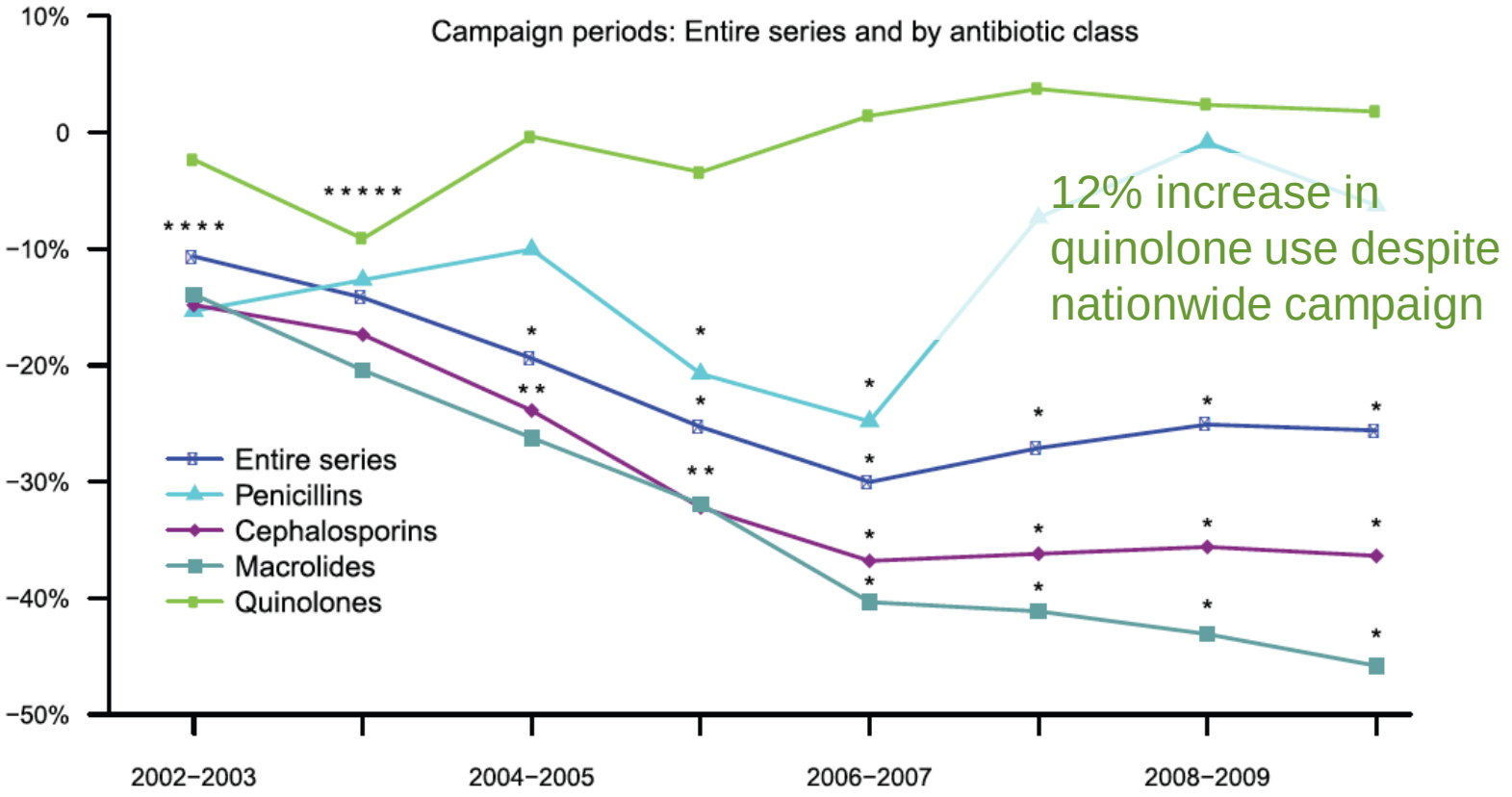
	2001	2002	2003	2004	2005	2006	2007	2008	2009	Percentage change 2001/09
Pharmacy-based data (in PIY)										
total ambulatory antibiotic prescriptions	1404	1260	1180	1096	1127	1096	1124	1090	1118	−20.4
prescribed by dentists	80	89	89	89	88	90	91	91	91	+13.3
prescribed by public hospital-based physicians	73	75	73	72	74	77	80	81	83	+13.6
prescribed by self-employed physicians[a]	1251	1096	1018	935	965	929	953	918	944	−24.5
Physician-based data (in PIY)										
total antibiotic prescriptions by office-based physicians[b]	863	777	680	639	619	584	580	536	577	−33.1
for RTIs[c]	689	598	512	466	443	411	410	377	414	−39.9
for infections of the urinary and female genital tract[c]	58	60	57	60	59	63	61	59	61	+4.6

[a]Self-employed doctors either based in retail offices or practising in private clinics.
[b]Office-based doctors with no hospital/clinic activity.
[c]When diagnosis explicitly specified by doctors (i.e. in ~95% of total prescriptions).

- No significant decrease in hospital-based Rx

Chahwakilian P et al. J Antimicrob Chemother 2011; 66: 2872-79

Antibiotic consumption per class



Abx consumption, France, 2002-2009

Bernier A et al. Antimicrob. Agents Chemother. 2014, 58(1):71.

Effectiveness of public education campaigns

- Public attitude and knowledge
  - highest impact campaigns also the most expensive- TV spots
  - Some extensive campaigns have not changed significantly public perception and knowledge
    - France 2000-2005: 54% still did not know that URTI are viral and do not need Abx
    - No effect of campaign on public knowledge in New Zealand

Huttner, B., et al., *Characteristics and outcomes of public campaigns aimed at improving the use of antibiotics in outpatients in high-income countries.* Lancet Infect Dis, 2010. **10**(1): p. 17-31.

National Health Insurance. Antibiotic programme: a first milestone is reached; the mobilization for the prudent use of antibiotics has to continue. Paris: National Health Insurance, 2008. http://www.ameli.fr/fi leadmin/user_upload/documents/DP_Antibiotiques_10-01-2008.

Curry M, et al. *NZ Med J* 2006; **119:** U1957

Effectiveness of public education campaigns

- Impact on resistance
  - Mainly PNC resistance of pneumococcus (PNSP)
  - Conflicting data
    - Increase in PNSP in New Zealand,
    - No impact on PNSP in BC, Luxemburg, Portugal, Iceland, Portugal
    - Reduction in PNSP in Spain, France, Belgium
- Comparable impact on other ARO unknown but doubtful
  - VRE? MRSA? CRE?

Huttner, B., et al., *Characteristics and outcomes of public campaigns aimed at improving the use of antibiotics in outpatients in high-income countries.* Lancet Infect Dis, 2010. **10**(1): p. 17-31.

Effectiveness of public education campaigns

- Adverse outcomes often not addressed in studies
  - Campaigns associated with theoretical risk of increase in complication
  - Capacity to detect these rare events = ?

Huttner, B., et al., *Characteristics and outcomes of public campaigns aimed at improving the use of antibiotics in outpatients in high-income countries.* Lancet Infect Dis, 2010. **10**(1): p. 17-31.

Winchester CC, Macfarlane TV, Thomas M, Price D. Antibiotic prescribing and outcomes of lower respiratory tract infection in UK primary care. *Chest* 2009; **135:** 1163–72.

Gonzales R, Corbett KK, Wong S, et al. “Get smart Colorado”: impact of a mass media campaign to improve community antibiotic use. *Med Care* 2008; **46:** 597–605.

Cost

- Most campaigns publicly funded
  - Pharmaceutical industry a minor sponsor
- Costs of campaign varies greatly
  - $ 50,000.00 – $7 million per year

Cost-effectiveness

- The most effective intervention remains to be determined, as no study has compared different initiatives in terms of effectiveness or cost-effectiveness.
- Resources attribution with the perspective of other competing public health interests not accounted for

Huttner, B., et al., *Characteristics and outcomes of public campaigns aimed at improving the use of antibiotics in outpatients in high-income countries.* Lancet Infect Dis, 2010. **10**(1): p. 17-31.

Lee, C.R., et al., *Strategies to minimize antibiotic resistance.* Int J Environ Res Public Health, 2013. **10**(9): p. 4274-305.

Conclusions and Recommendations

- Despite its strong theoretical basis, the impact of public campaigns on antimicrobial resistance is not completely understood at the moment
- Evidence limited mainly to Abx use for URTI and PNC r. of *S. pneumoniae*
- Evidence mainly for outpatient Rx; few data on inpatient Rx
- Cost-effectiveness studies have never been performed;