

HARTMANN



LOOKING BACK AND AHEAD

**Past and future challenges
in infection prevention**

HSC Symposium 2023

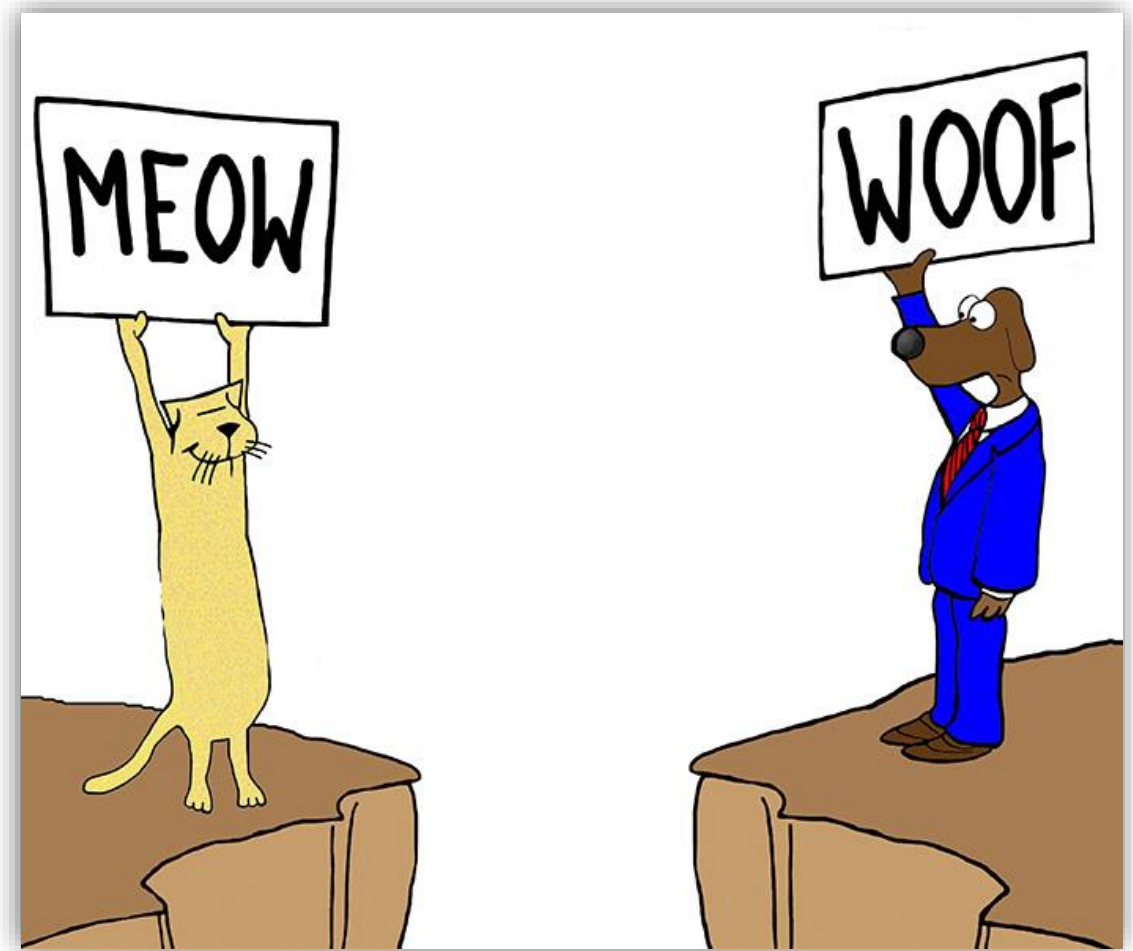
Are we talking the same language?

The importance of choosing our words carefully
when communicating HCAI and AMR



Dr. Jon Otter

Are we talking the same language? The importance of choosing our words carefully when communicating HCAI and AMR



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PPE

Transmission
routes

Testing and
laboratory
factors

Vaccination

Organizational
transformation

Guidelines and
policy
development

Regulatory
framework

Outbreaks

Non-COVID
pathogens

Antimicrobial
stewardship

Digital
transformation

Applied
research

PPE and hand hygiene improvements nudged by COVID-19



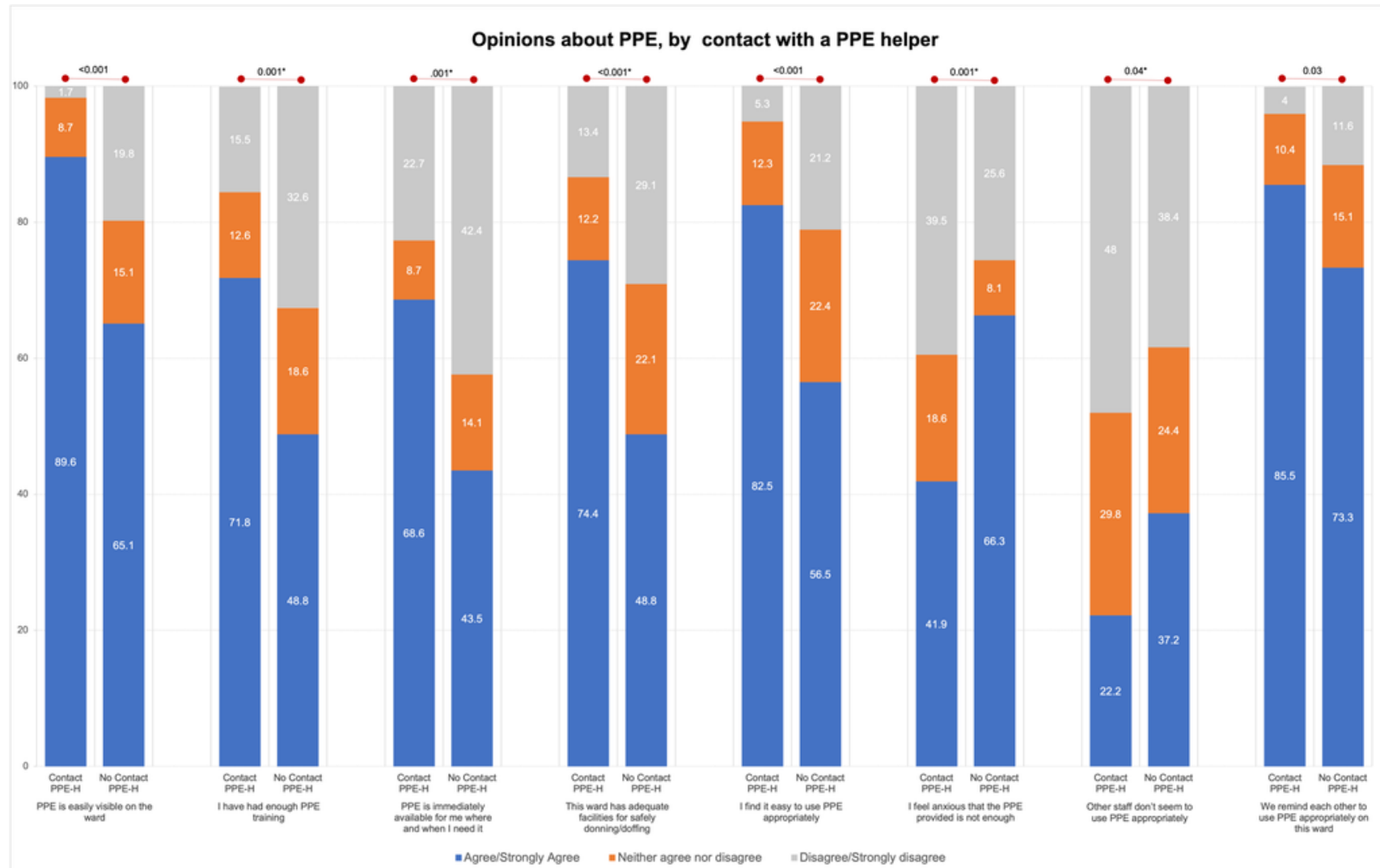
- Overuse and misuse of PPE results in increased risk to the wearer (through self-inoculation) and increased risk of cross-transmission.^{1, 2}
 - Under-appreciated risks related to PPE doffing and disposal.
 - Overuse and misuse of gloves/gowns makes hand hygiene harder and results in more cross-transmission.
- The pandemic has raised important questions about respiratory protection, especially for AGPs.
 - Emerging evidence suggests that mask wearing has reduced all respiratory diseases in inpatients.³
- On-the-ground support has proved vital to improving PPE practice and reduce PPE-related anxiety.⁴



Dynamic PPE risk-assessments will never be the same again!
We understand better how to support staff towards PPE best-practice.

PPE 'Helper' Programme

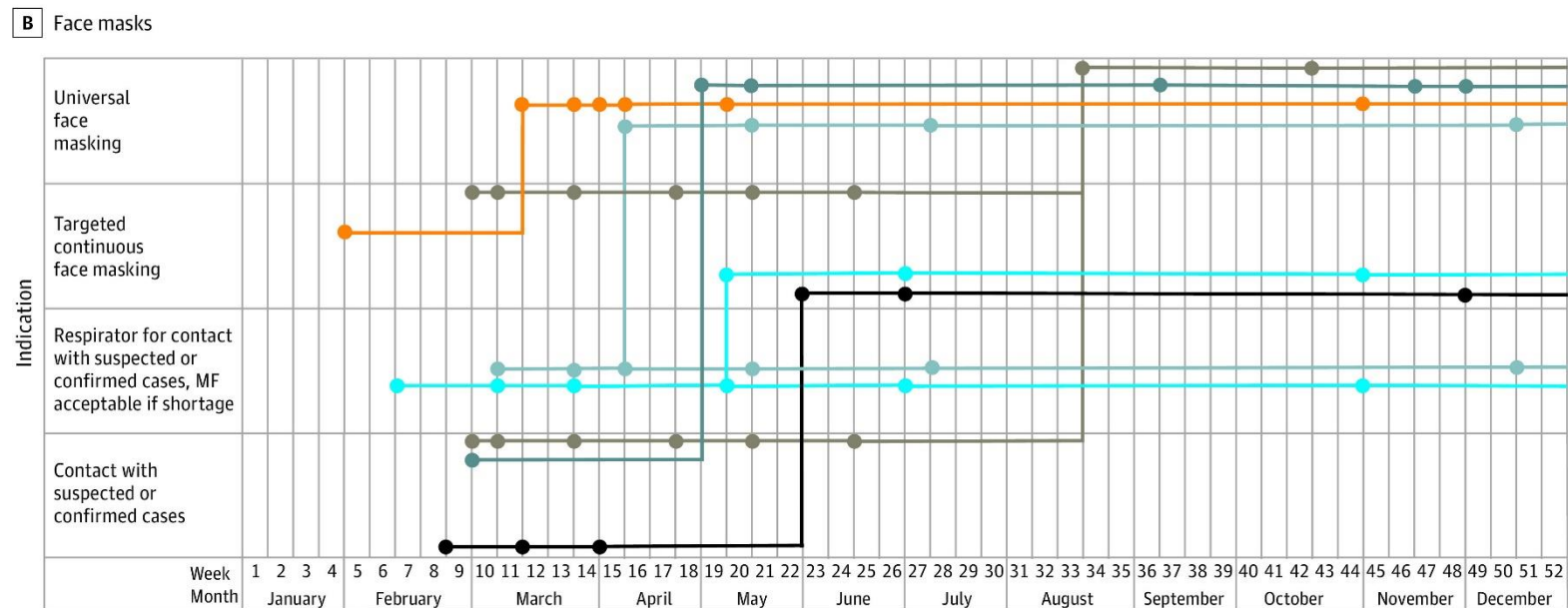
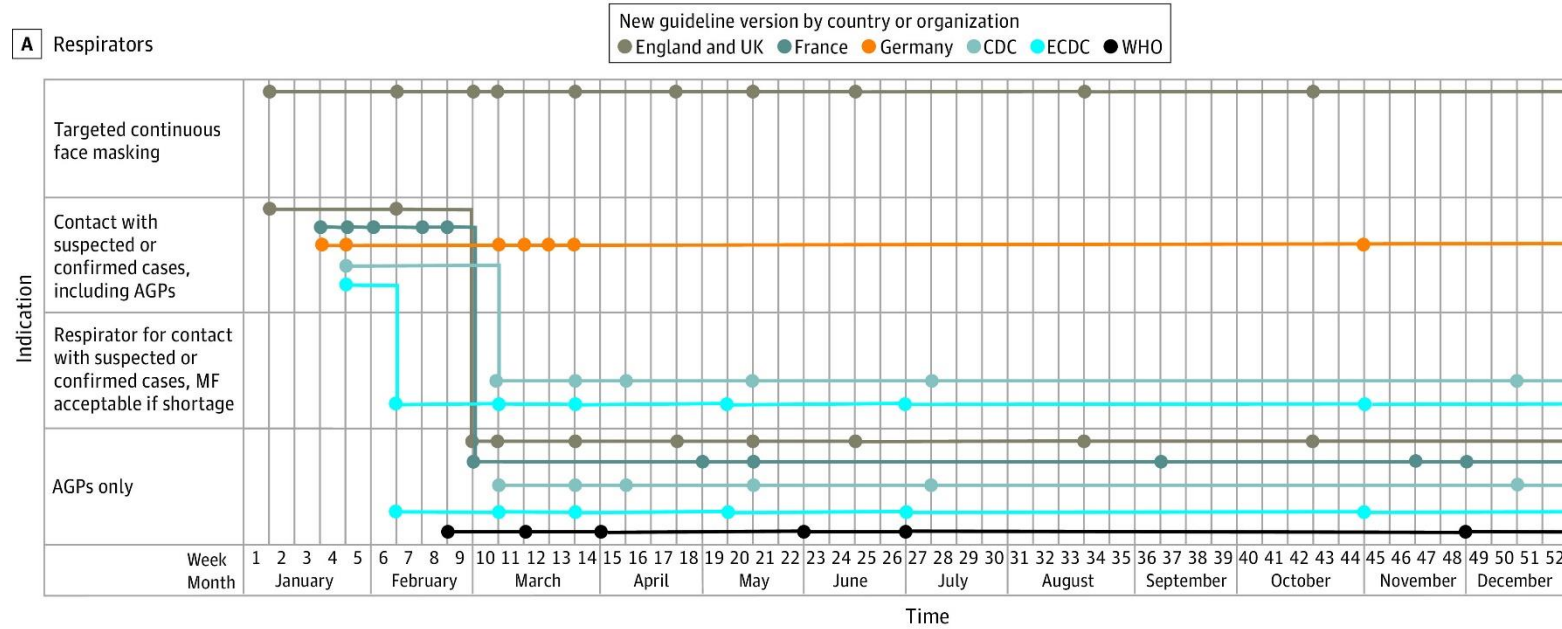
Staff perceptions around PPE, stratified by contact with a PPE helper (statistically significant findings only).



Droplets, aerosols, and transmission...

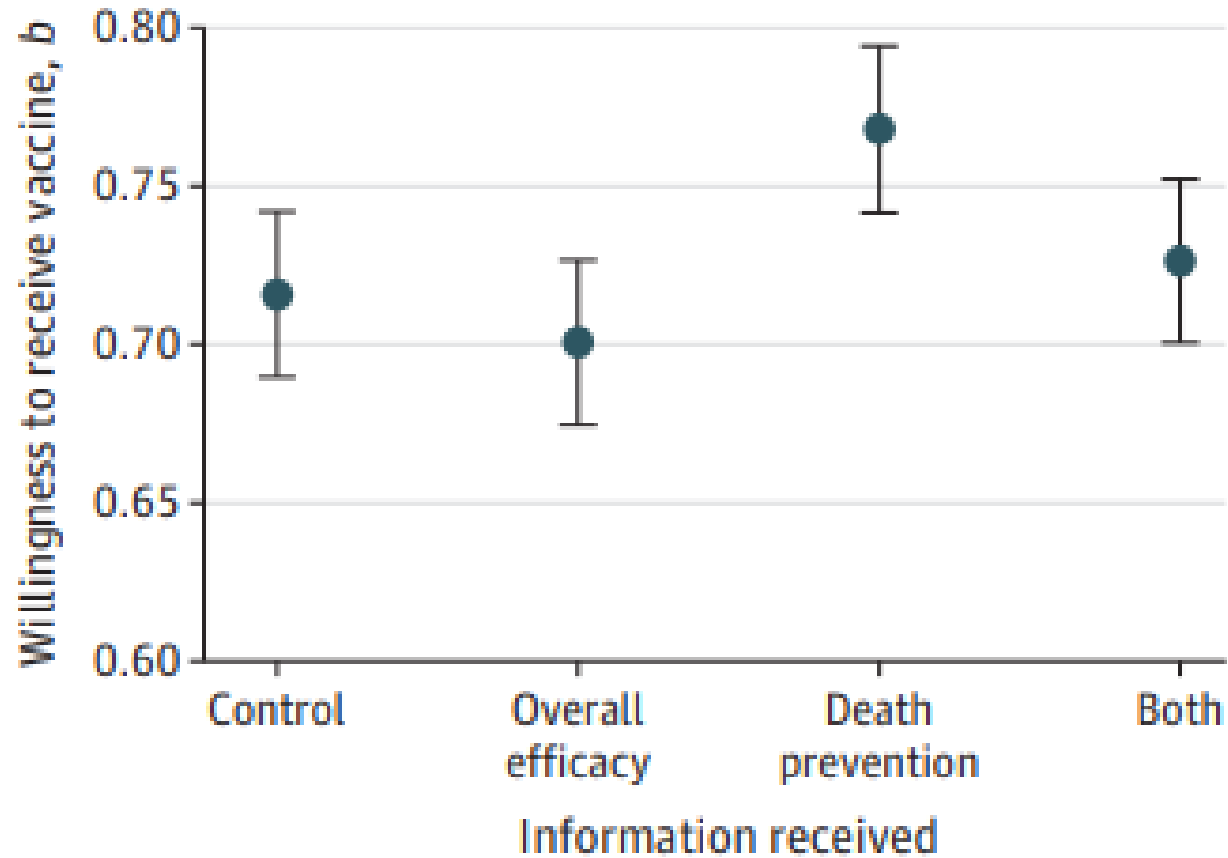
Term	Clinicians	Aerosol scientists	General public
Airborne	Long-distance transmission, such as measles; requires an N95/FFP2/FFP3 respirator (or equivalent) for infection control	Anything in the air	Anything in the air
Aerosol	Particle <5 μm that mediates airborne transmission; produced during aerosol-generating procedures and also requires an N95 respirator	Collection of solid or liquid particles of any size suspended in a gas	Hair spray and other personal/cleaning products
Droplet	Particle >5 μm that falls rapidly to the ground within a distance of 1–2 m from source; requires a surgical mask for infection control	Liquid particle	What comes out of an eyedropper
Droplet nuclei	Residue of a droplet that has evaporated to <5 μm ; synonymous with 'aerosol'	A related term, 'cloud condensation nuclei', refers to small particles on to which water condenses to form cloud droplets	Never heard of
Particle	Virion	Tiny solid or liquid 'blob' in the air	Like soot or ash

Changing respiratory guidance during the pandemic

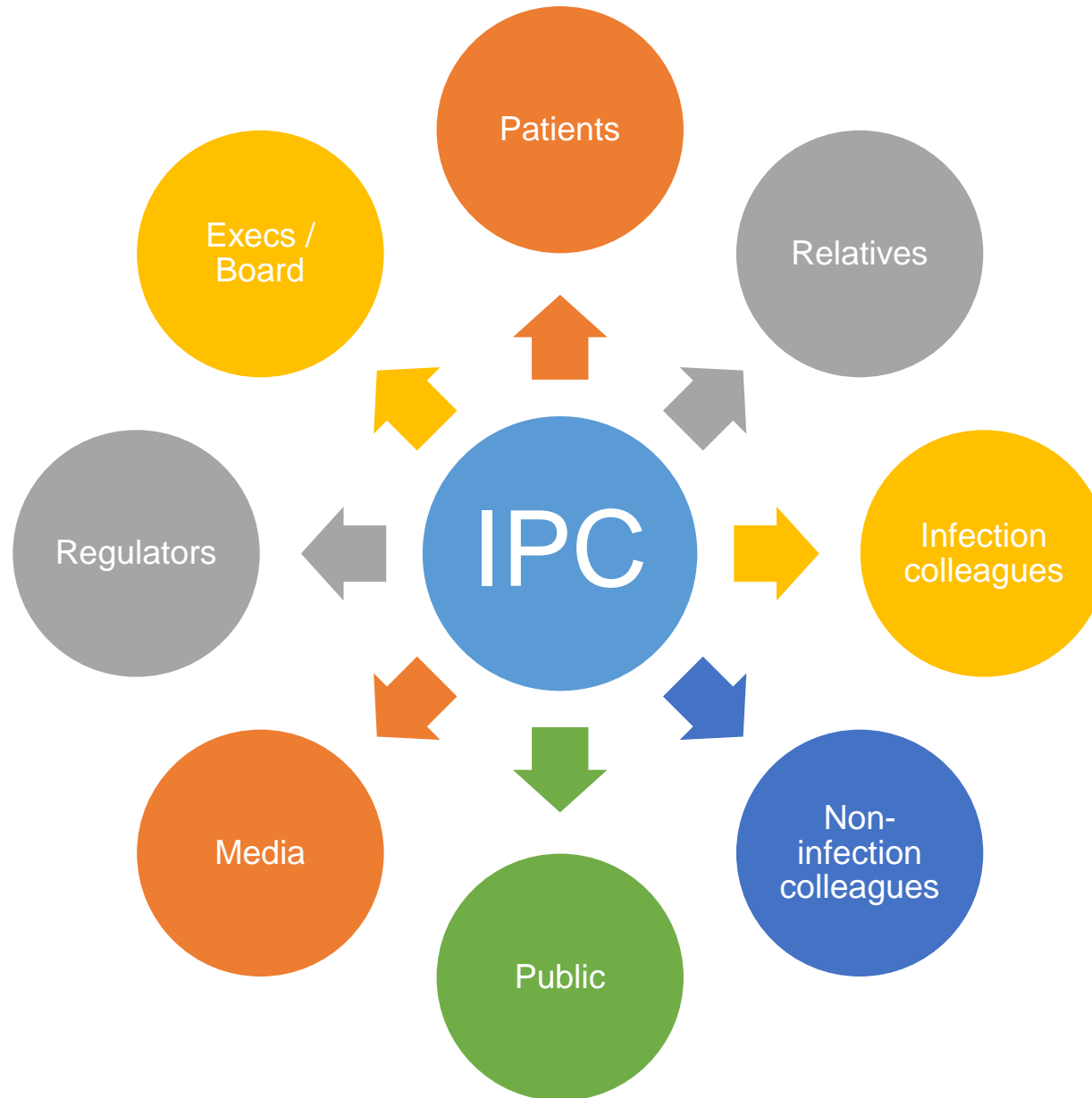


Public health: vaccine uptake

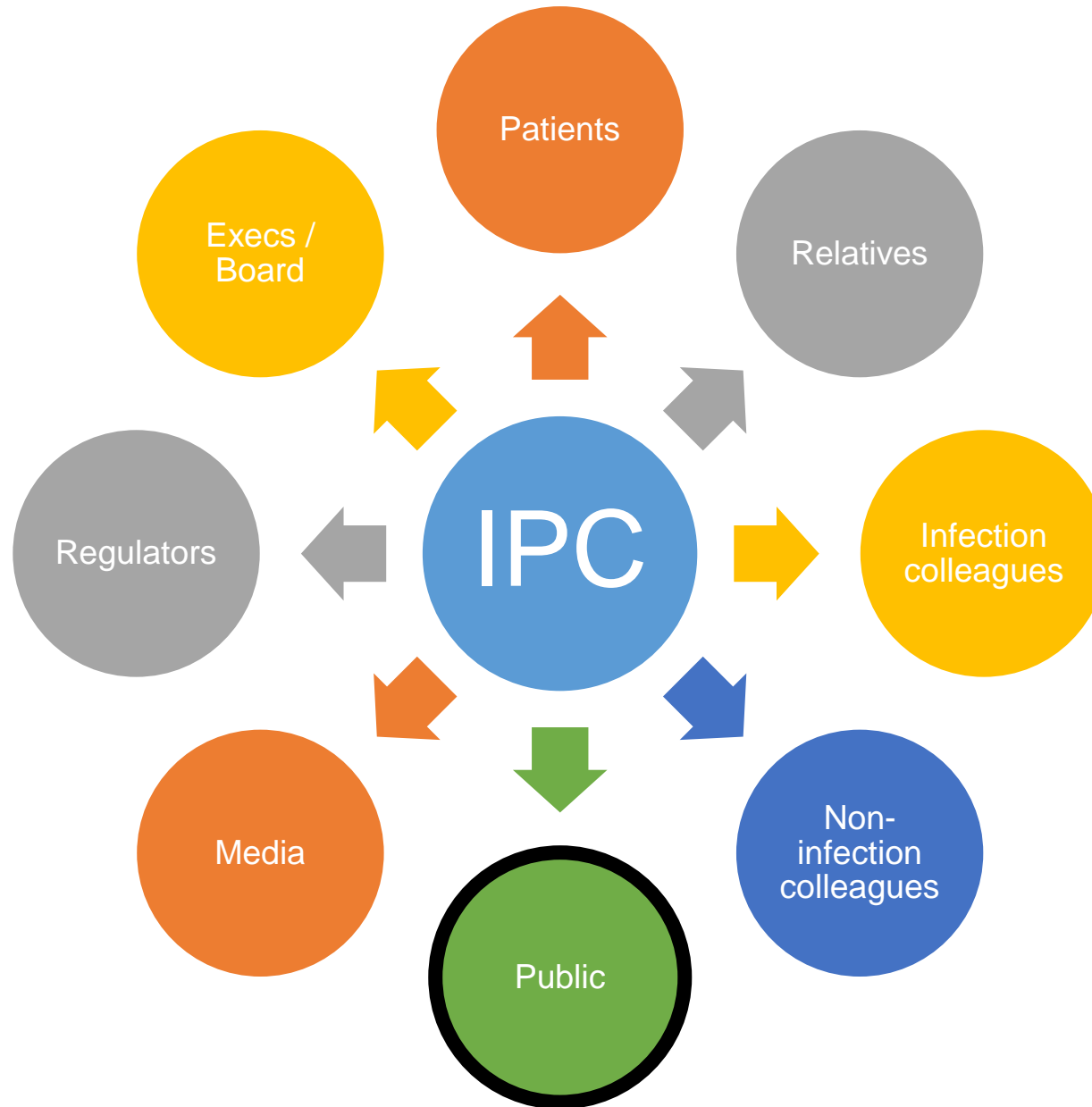
Evaluation of willingness to receive a COVID-19 vaccine based on differences in information provided to 2556 Canadian adults.



Who do we need to communicate with?



Who do we need to communicate with?



'AMR' means nothing to people – they can't even guess at what it stands for

When we ask about 'AMR' and 'antimicrobial resistance' we just get blank faces all round – even when we've just been talking about resistance more generally

I need a dictionary for that.

F, 40-60, no education past 16 years old,
Manchester

That sounds like something
made up.

M/F, 18-25, not at university, London

No idea.

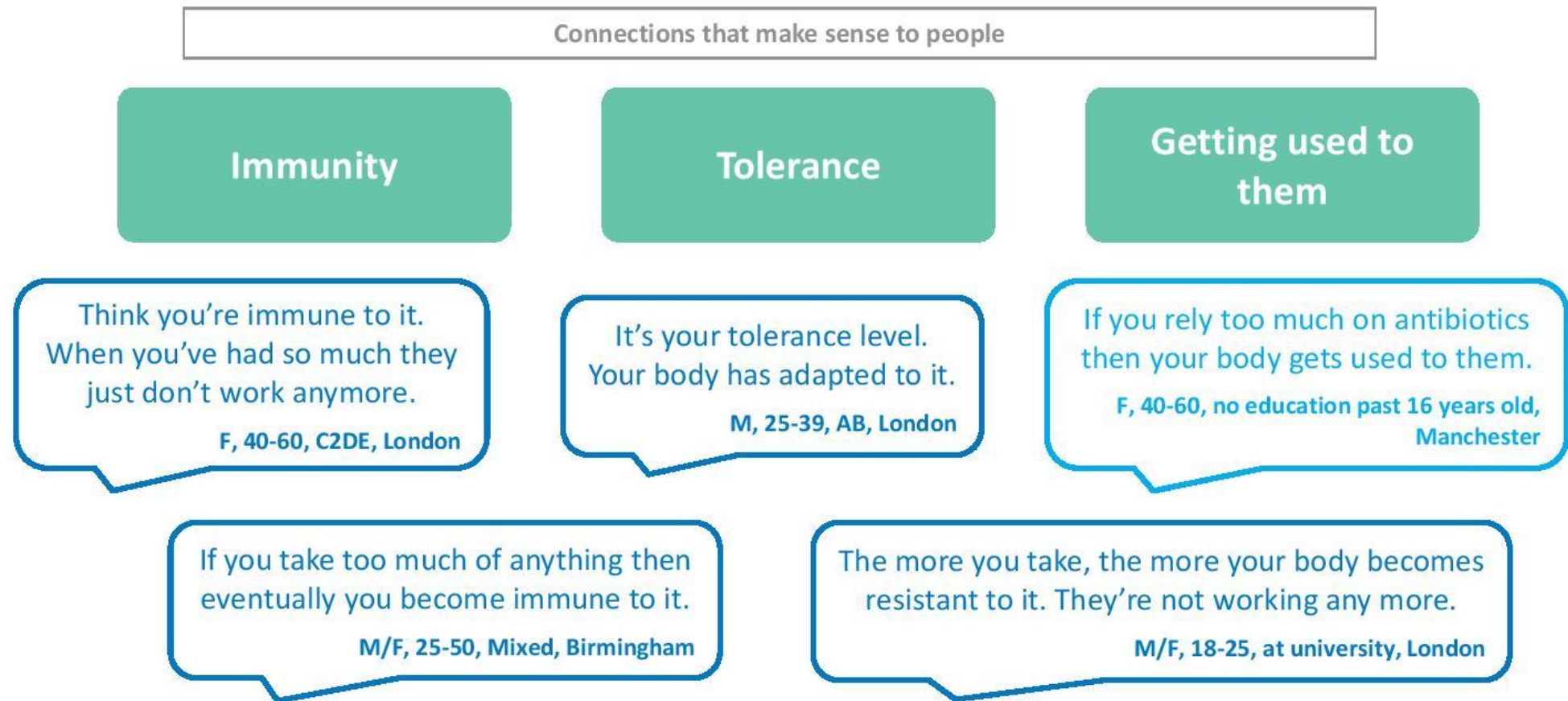
M/F, 25-50, Mixed, Birmingham

I think my doctor gave me soap
that's that.

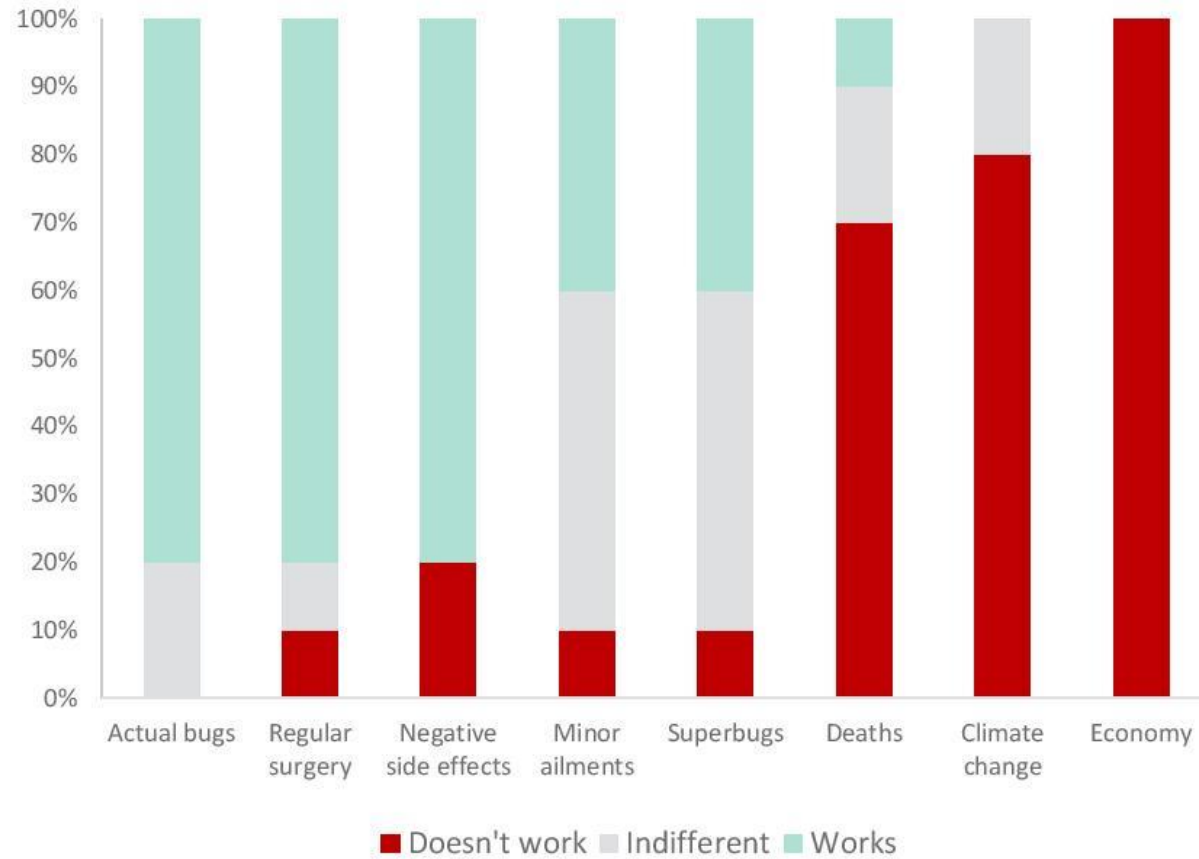
M/F, 18-25, at university, London

And ‘resistance’ is either not on the radar or misunderstood – everyone assumes it’s the *person* that becomes resistant

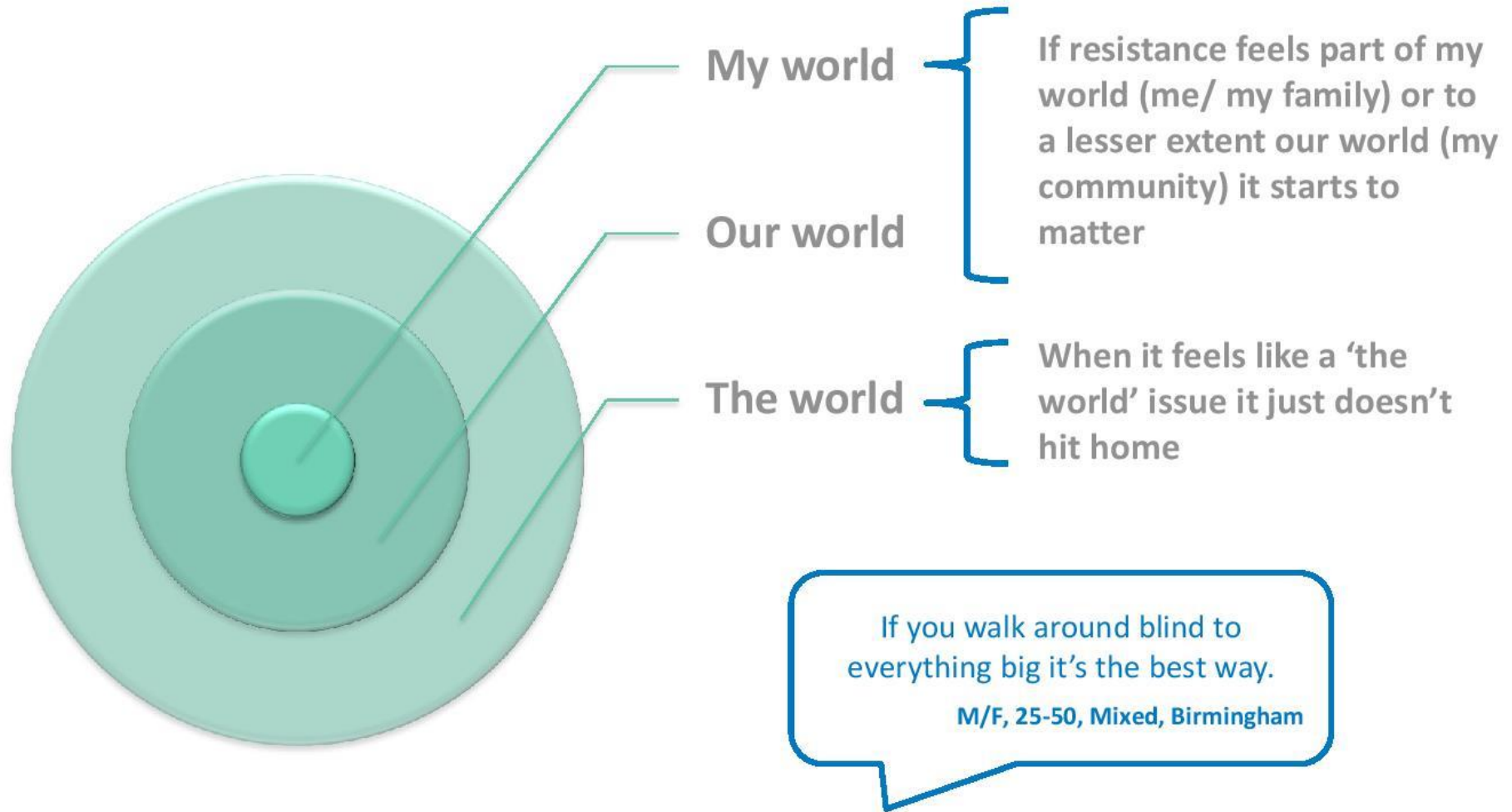
Most don’t really know what resistance is, but when they stop and think they imagine the body building up resistance not the bacteria – the idea that the more you take the less effective they’ll be on you makes intuitive sense to many people and is hard to shake



When we compare the impact of all the 'ways in' we see a clear and consistent picture



It's only when it feels direct, personal and relevant that people take note



1

The current language needs to change – AMR is meaningless and ‘antibiotic resistance’ does not take people to the right place

- The chasm between current public awareness and understanding and the term ‘AMR’, or ‘anti-microbial resistance’ too big to close
- ‘Antibiotic resistance’ should not replace it as the short-hand as it doesn’t help people understand the issue or make intuitive sense to people
- One simple option, which would make a difference, is to add ‘infection’ (or ‘bacteria’) to ‘antibiotic resistance’ this would help, particularly in combination with a broader awareness campaign

FROM

- AMR
- ANTIMICROBIAL RESISTANCE
- ANTIBIOTIC RESISTANCE

TO

- ANTIBIOTIC RESISTANT
INFECTIONS

How clinicians interact with parents when diagnosing and treating RTI

Systematic review and meta-ethnography.

“Parent communication focussed on their concerns and information needs, whereas clinician communication focussed on diagnosis and treatment decisions. During information exchanges, parents often sought to justify the need for the consultation, while clinicians frequently used problem minimising language, resulting in parents and clinicians sometimes talking at cross–purposes...This modifiable problem may be an important contribution to the unnecessary and unwanted prescribing of antibiotics.”

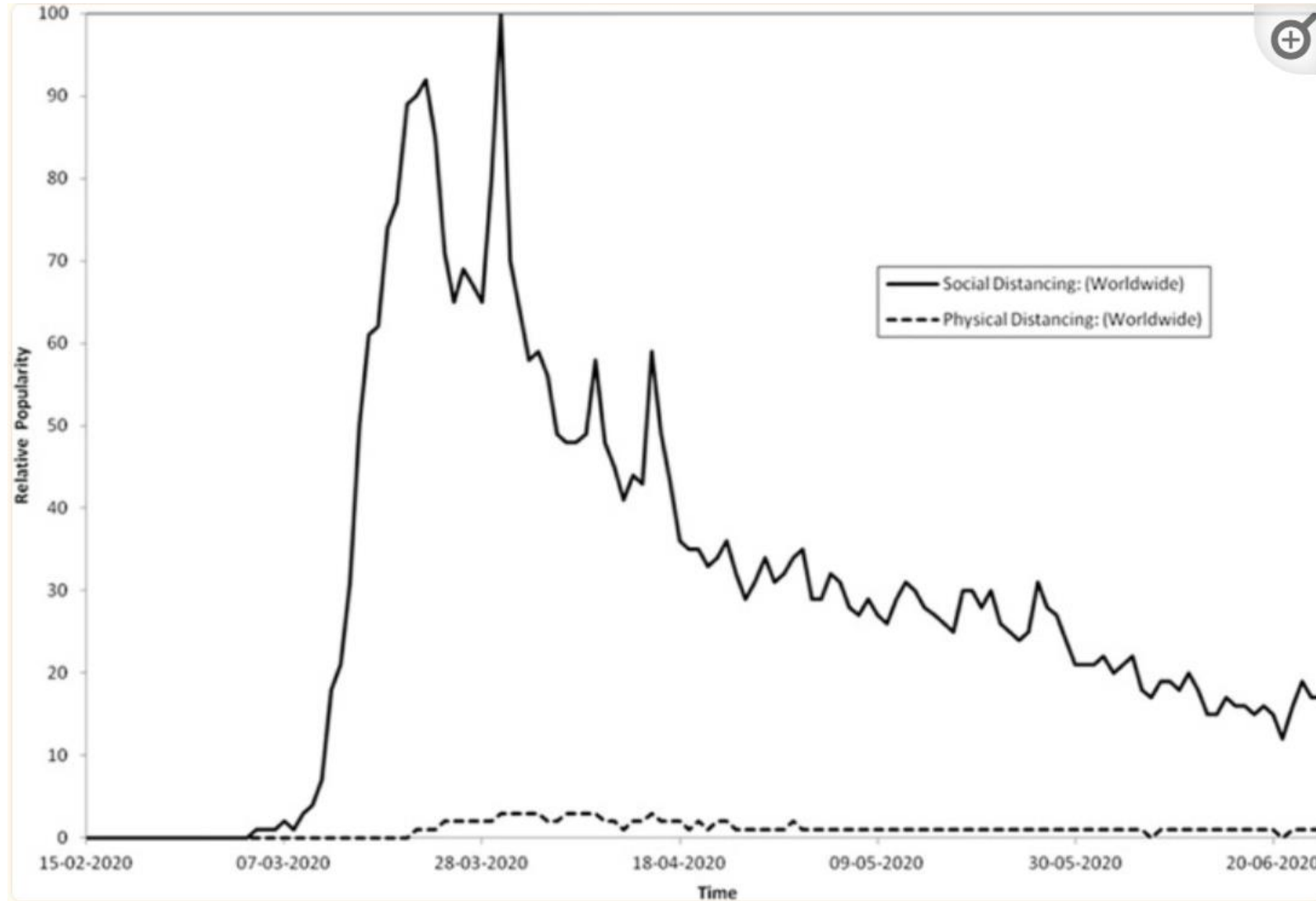
Public health messaging: what works?

Systematic review of evidence around people's response to public health messages for managing risks and preventing infectious diseases.

Table 1 Recommendations mapped and cross-referenced to narrative synthesis	
Recommendation	Cross-reference to narrative synthesis in online supplemental appendix 6
(1) Engaging with key stakeholders and communities	
(1a) Involve community leaders and others perceived as credible sources within the community	Community engagement
(1b) Tailoring helps to make the key messages applicable to an individual's situation	Messages for subpopulations
(1c) Consider any difficulties accessing information and levels of literacy	Increase trust
(1d) Use different media for delivery and match delivery to the population's needs and perceptions	
(2) Addressing uncertainty immediately with transparency	
(2a) Address uncertainty and changing information that may exist during an ongoing public health crisis	Increase trust Preconceptions and understanding threat
(2b) Consistency and coordination between different sources of information	Timing—beginning of health crisis
(2c) Be transparent: admit errors and unknowns whenever appropriate	
(2d) Be transparent: identify sources of information	
(3) Unified messages	
(3a) Make core messages consistent	Increase trust
(3b) Identify inconsistencies across sources	Threat appraisal
(3c) Increase awareness of the risks of the virus to their own health and the health of others	Preconceptions and understanding threat
(4) Message framing	
(4a) Increase understanding of health threat	Preconceptions and understanding threat
(4b) Consider social responsibility	Threat appraisal
(4c) Language choice to explain severity	Community engagement
(4d) Promote sense of personal control	

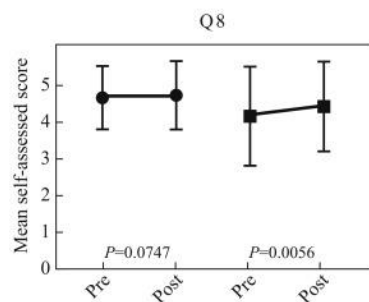
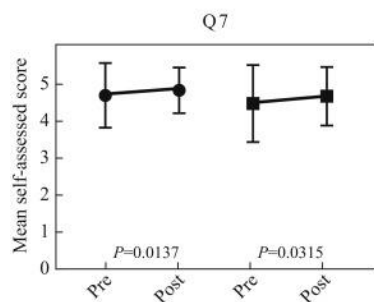
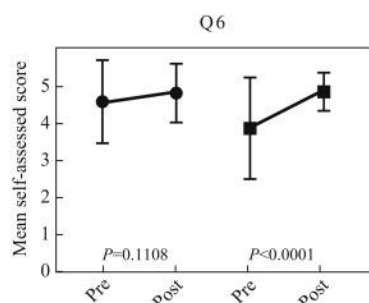
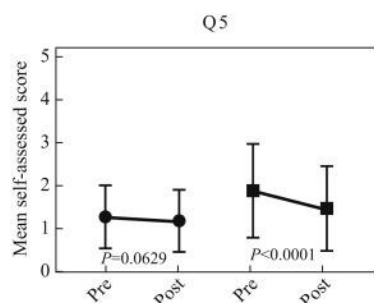
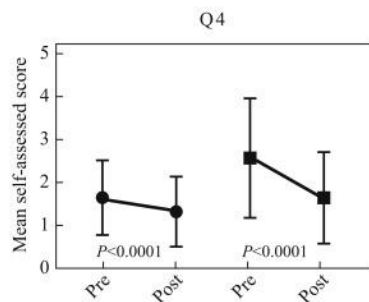
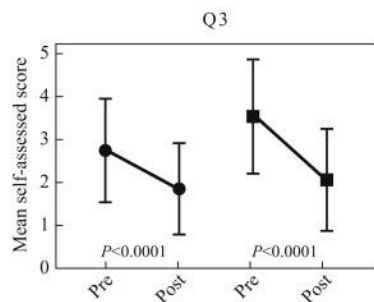
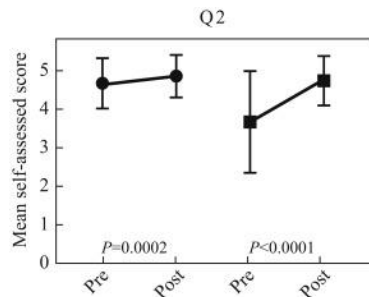
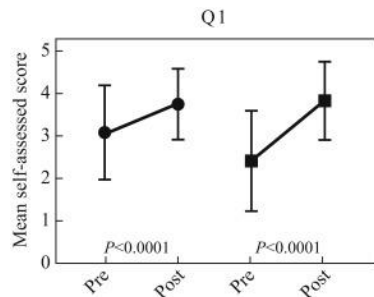
Public health: social or physical distancing?

Analysis of trends in public discourse and academic publications around social vs. physical distancing.



Finding a different language

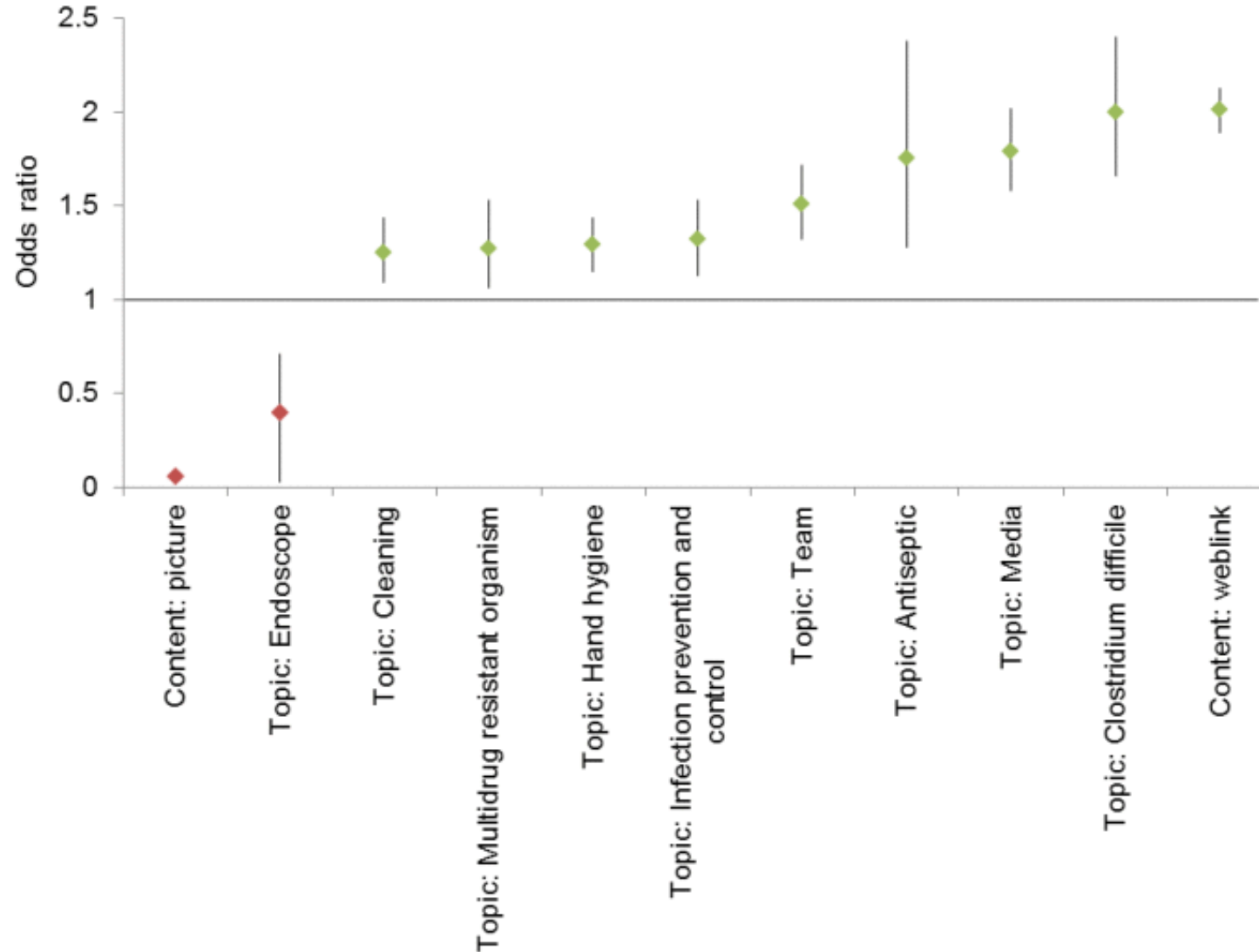
Audience knowledge about AMR was surveyed before and after watching 'The Drugs Don't Work', a play about antimicrobial resistance.



1	I know a lot about microbiology and antibiotics
2	Antimicrobial resistance is a very serious problem
3	My GP can establish if a sore throat is bacterial or viral
4	When I am suffering from a sore throat and seek medical attention, I should expect my GP to give antibiotic medication
5	When I am suffering from a sore throat and seek medical attention, if my GP does not prescribe antibiotic medication, they are not doing their job
6	Even if I feel better, I will complete a full course of antibiotics
7	I only use antibiotics prescribed to me
8	I never use antibiotics left over from a previous prescription

Finding a different language:

Positive and negative predictors of a tweet being retweeted. Error bars = 95% CI of the OR.

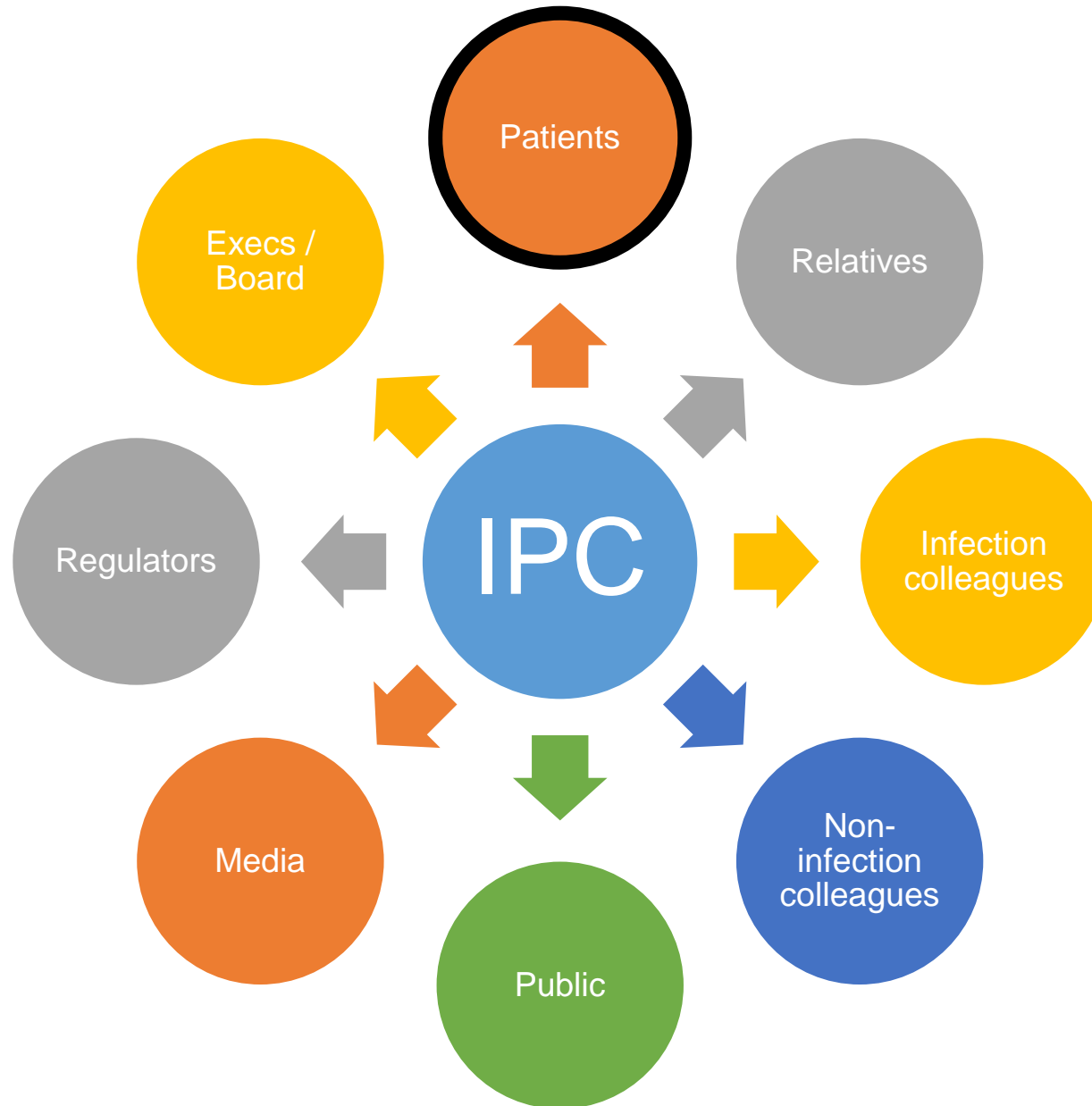


Social media & new possibilities for IPC/ID

- Surveillance (e.g. pandemics, post-discharge surveillance for SSI)¹
- Healthcare regulation²
- Public engagement³
- Patient reminders e.g. to take antibiotics (or not!)⁴
- New opportunity for dialogue with patients⁵
- Surprisingly accurate public healthcare info⁶
- Conferences with a louder voice⁷

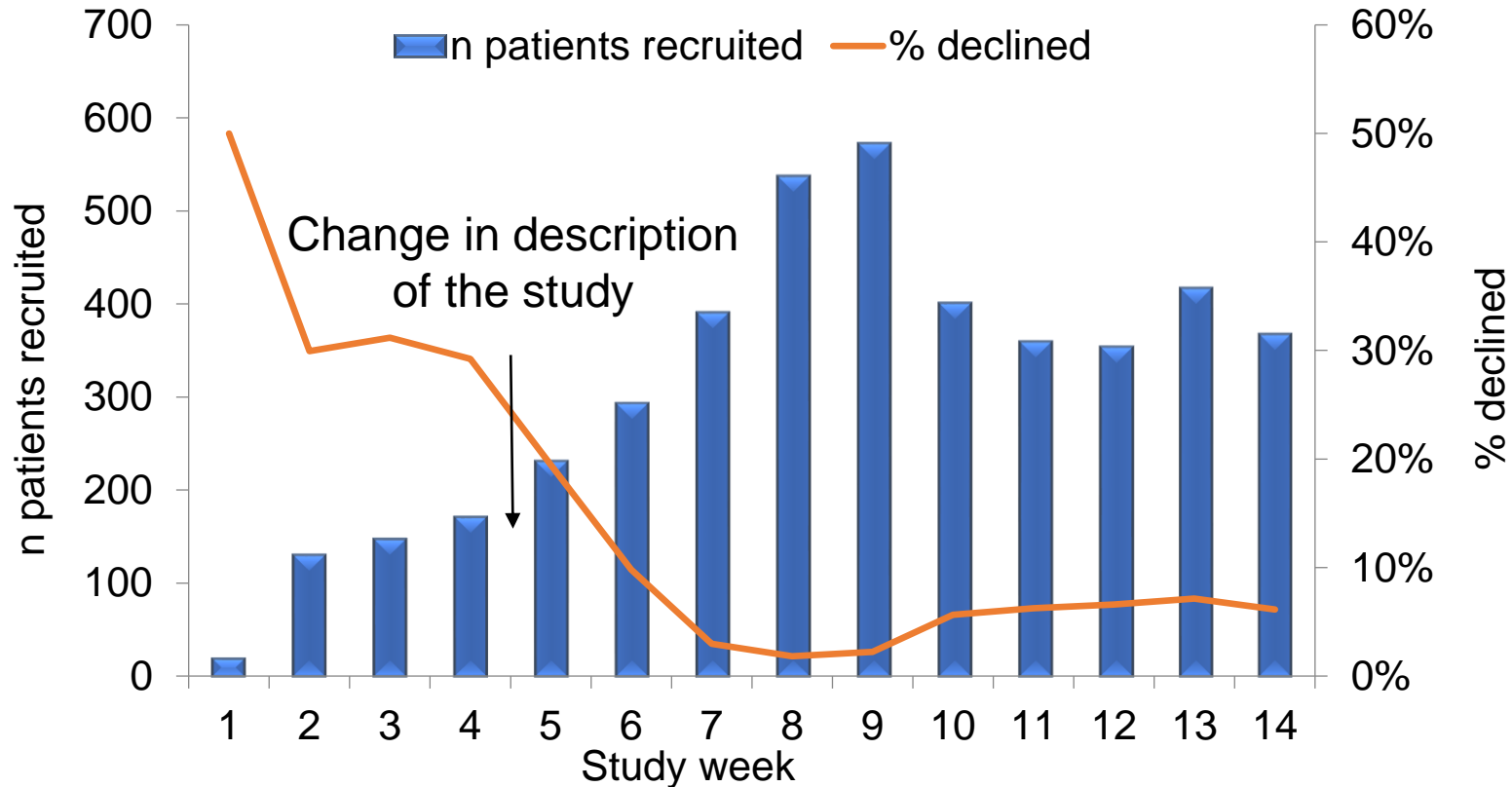
1. Charles-Smith *et al.* *PLoS One* 2015;10:e0139701.
2. Bouwmann *et al.* *BMC Health Serv Res* 2015;15:325.
3. Dyar *et al.* *J Antimicrob Chemother* 2014;69:2568-72.
4. Odone *et al.* *Hum Vaccin Immunother* 2015;11:72-82.
5. [Doctors' use of social media guidelines.](#) (GMC).
6. Chew & Eysenbach. *PLoS One* 2010;5:e14118.
7. Kiernan & Wigfglesworth. *J Infect Prevent* 2011;12:224-225.

Who do we need to communicate with?



Can I swab your rectum please?

Prospective study of asymptomatic antibiotic-resistant Gram-negative bacteria colonisation in 4006 patients on admission to a London hospital group.



Original description (weeks 1-4)

- “Bug”-focussed message
- Detailed scientific language

Modified description (weeks 5-14)

- Patient-focussed message
- “Why is it important to be screened?”
- “Benefits for you and those close to you!”
- “If you get an infection, we can put you on the right antibiotics straight away.”

The change in study description results in a significant reduction in decline rate, from 31.9% of 869 patients to 7.6% of 3690 patients ($p < 0.001$)

Speaking to patients

Some of the words used to describe how patients felt like they were treated by staff following a new CPE diagnosis.

‘Leper’

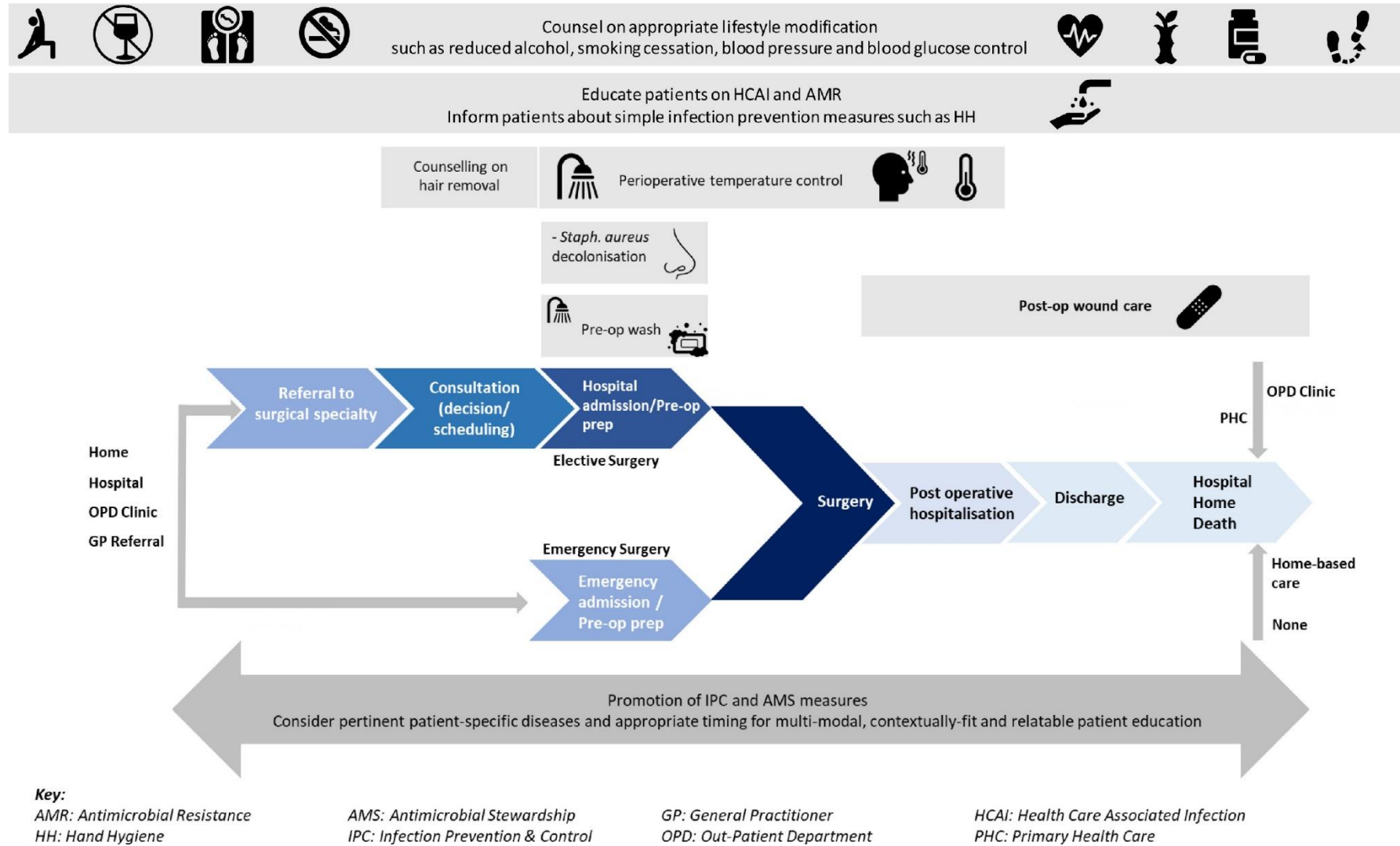
‘Pariah’

‘Plague’

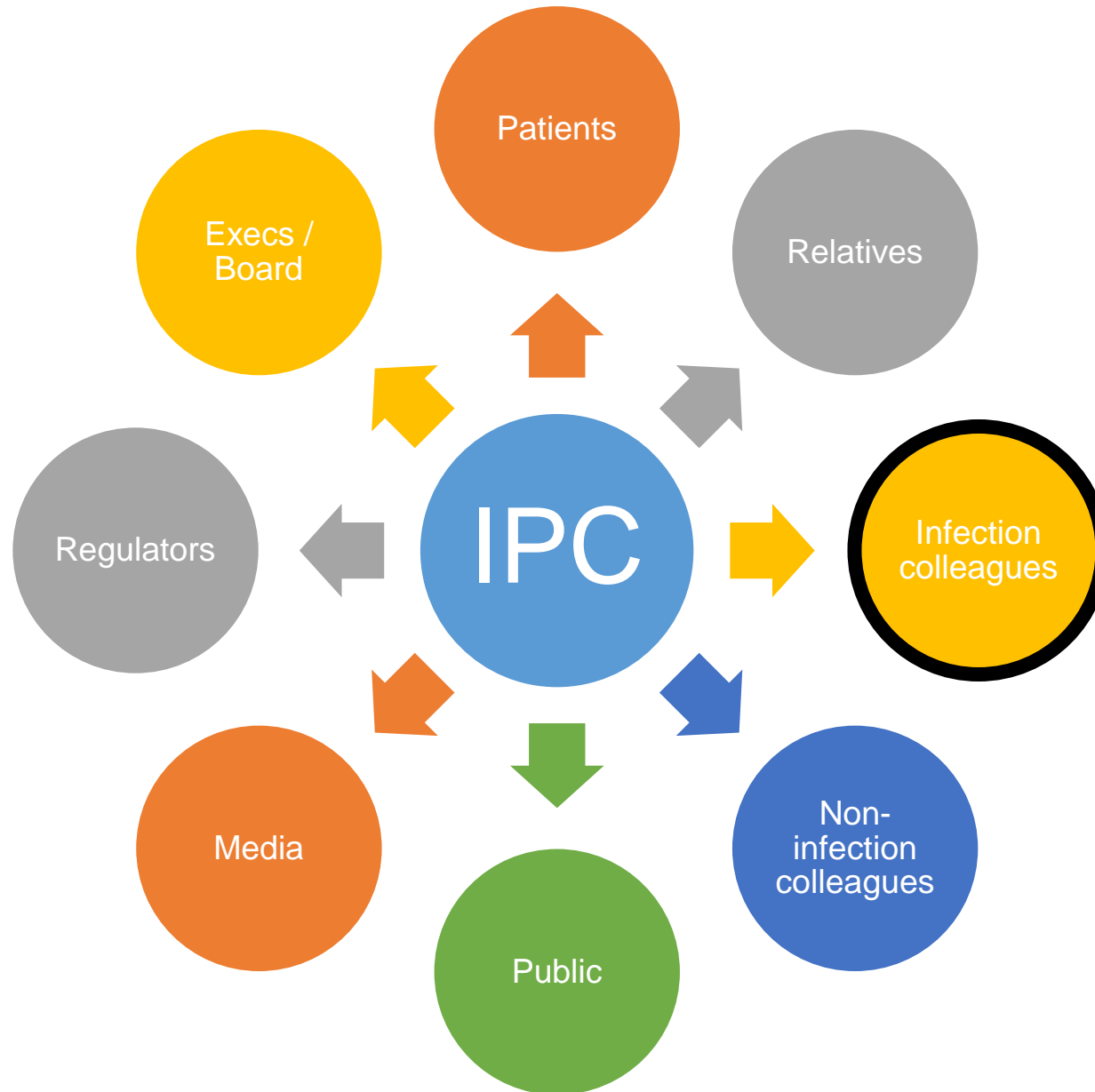
“As healthcare professionals, we often do not look beyond specimens and infection control aspects of managing patients with CPE.”

Patient participation in SSI prevention

Scoping review of patient understanding of and participation in infection-related care across surgical pathways



Who do we need to communicate with?



What do we mean by ‘antimicrobial stewardship’?

MANY MEANINGS

‘Antibiotic stewardship’ could refer to one of six endeavours; most people use it to describe the actions of physicians and pharmacists.

Type	Features
Individual	Systematic approach taken by drug prescriber to optimize use to improve patient outcome, ensure patient safety and limit emergence of resistance.
Multidisciplinary	Any combination of infection specialists, microbiologists, non-specialist clinicians, pharmacists, infection-prevention officers and nurses, or of veterinary surgeons and para-veterinary professionals (in animal health), working in a team to optimize use of one or more antibiotics for a patient or patients.
Hospital (institutional)	Involves one or more teams, usually coordinated by a committee.
Community	At primary health clinics, single or group practices, long-term care facilities or, in animal health, at single farms or farm groups.
National	Activities encompass broader issues, using legislation and regulation to define access to medicines and who may prescribe them.
Global	Linked to development, this will expand on national programmes, to coordinate individual nations, country and regional networks and continental activities. The World Health Organization is working on “a global stewardship framework to support the development, control, distribution and appropriate use of new antibiotics, diagnostic tools, vaccines and other interventions, with linkage to new model/s of research and development”.

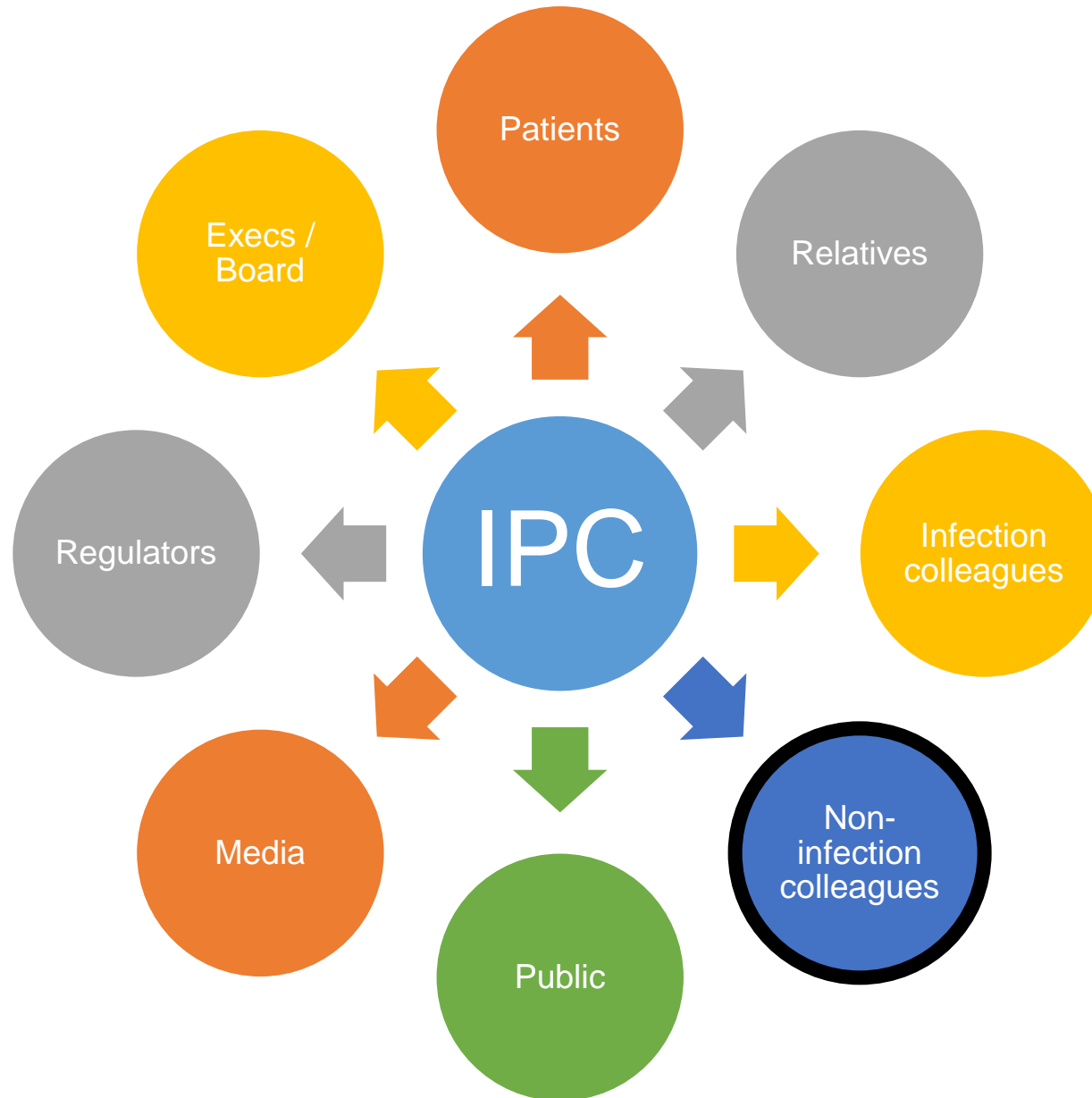
Surveillance definitions: SSI

- One study identified **>40** separate SSI definitions in the literature!¹
- CDC “an infection that occurs after surgery in the part of the body where the surgery took place. Surgical site infections can sometimes be superficial infections involving the skin only. Other surgical site infections are more serious and can involve tissues under the skin, organs, or implanted material”
- ECDC “an infection that occurs within 30 days after the operation and involves the skin and subcutaneous tissue of the incision (superficial incisional) and/or the deep soft tissue (for example, fascia, muscle) of the incision (deep incisional) and/or any part of the anatomy (for example, organs and spaces) other than the incision that was opened or manipulated during an operation (organ/space)”
- PHE defines superficial incisional, deep incisional, and organ space SSIs.

Surveillance definitions: HOCl

			Days from admission																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Long	US	2020			Possible healthcare-associated			Likely healthcare-associated																
Rhee	US	2020																						
Meredith	UK	2020			Hospital-onset intermediate healthcare-associated																			
Price	UK	2020																						
Taylor	UK	2020																						
Wake	UK	2020																						
CDC	US	2000																						
NHSE/ PHE	UK	2000																						
NHS NSS PHS	UK	2000	Non-hospital-onset																					

Who do we need to communicate with?



Impact of a simplified C. diff lab report

Evaluating the impact of a simplified C. difficile lab report on clinician decisions around treatment and patient isolation.

	C. difficile positive		C. difficile negative	
	Treat?	Isolate?	Treat?	Isolate?
Correct responses at Time Point 1 (%)	86	93	86	83
Correct responses at Time Point 2 (%)	86	100	98	84
P-value	0.99	0.03	0.01	0.83

Barriers to adherence with IPC guidelines

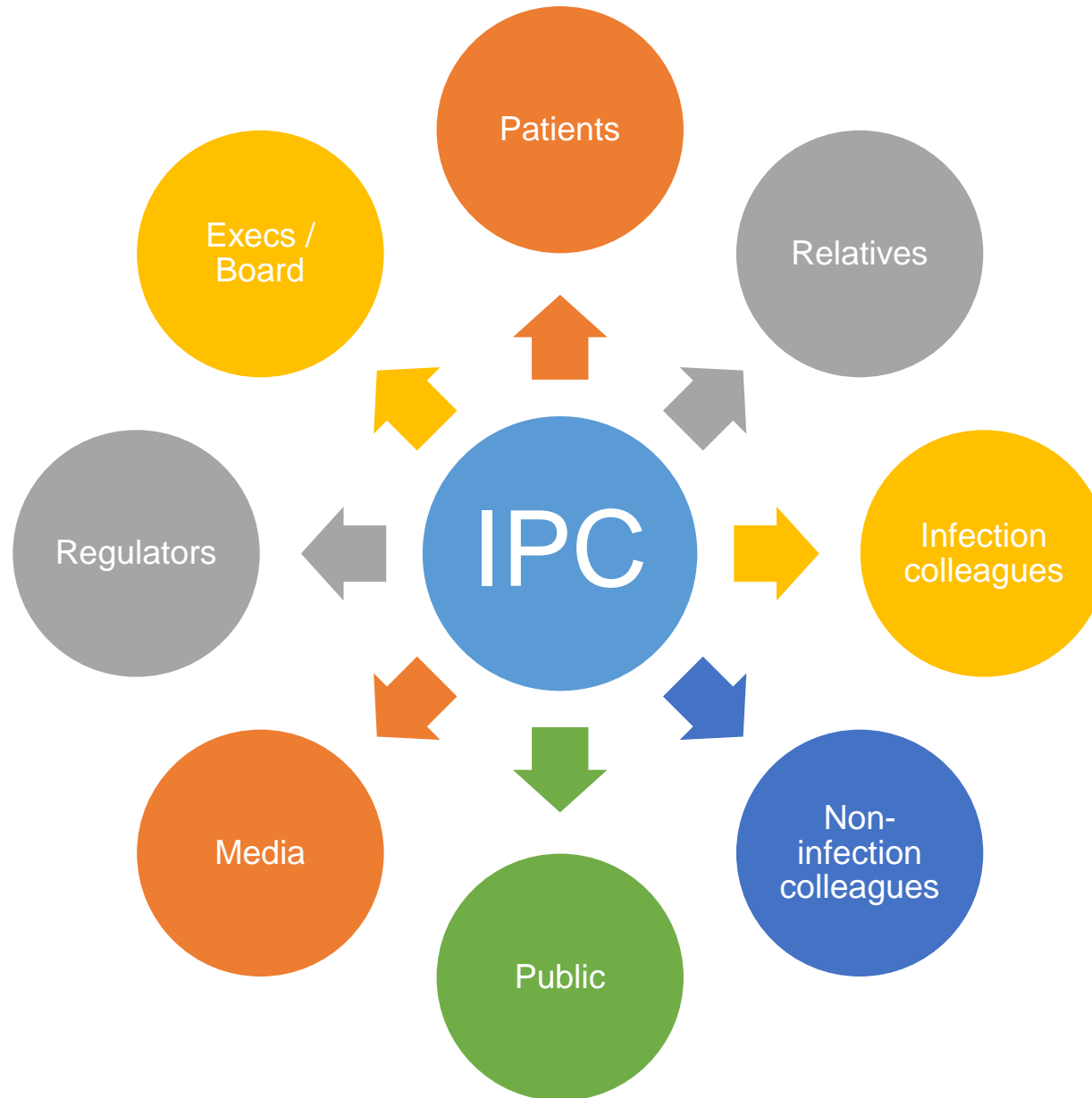
Rapid review on barriers and facilitators for healthcare worker adherence to IPC guidelines for respiratory infectious diseases.

If HCWs considered that the IPC guidelines were long, ambiguous or did not reflect international guidance, they described feeling unsure as to which IPC

Clear communication strategies and sharing new information within organisations were seen as vital for the successful implementation of IPC guidelines

Using multiple platforms or methods of communication was considered to be a useful way of ensuring that all staff received accessible information and updates in relation to IPC guidelines

Who do we need to communicate with?



> PLoS One. 2021 Jun 3;16(6):e0252408. doi: 10.1371/journal.pone.0252408. eCollection 2021.

The temperature of emotions

Fran

Qia

Affi

PMI

Free

> J Pers Soc Psychol. 2020 Jul;119(1):75-103. doi: 10.1037/pspi0000206. Epub 2019 Aug 15.

Tell it like it is: When politically incorrect language

pro

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PMID: :

Free ar

Observational Study > Clin Microbiol Infect. 2022 Jan;28(1):107-113.

doi: 10.1016/j.cmi.2021.08.022. Epub 2021 Sep 30.

Association between first language and SARS-CoV-2

infecti

admiss

observ

Ville Holmbe

Asko Järvinen

Johanna Häs

> Health Promot Int. 2021 Apr 15;36(2):524-534. doi: 10.1093/heapro/daaa140.

COVID-19, a tale of two pandemics: novel coronavirus and fake news messaging

Nelson A Atehortua ¹, Stella Patino ²

Affiliations + expand

PMID: 33450022 PMCID: PMC7928890 DOI: 10.1093/heapro/daaa140

Free PMC article

Talking the same language

Know your audience



Develop a concise message



Consult with stakeholders

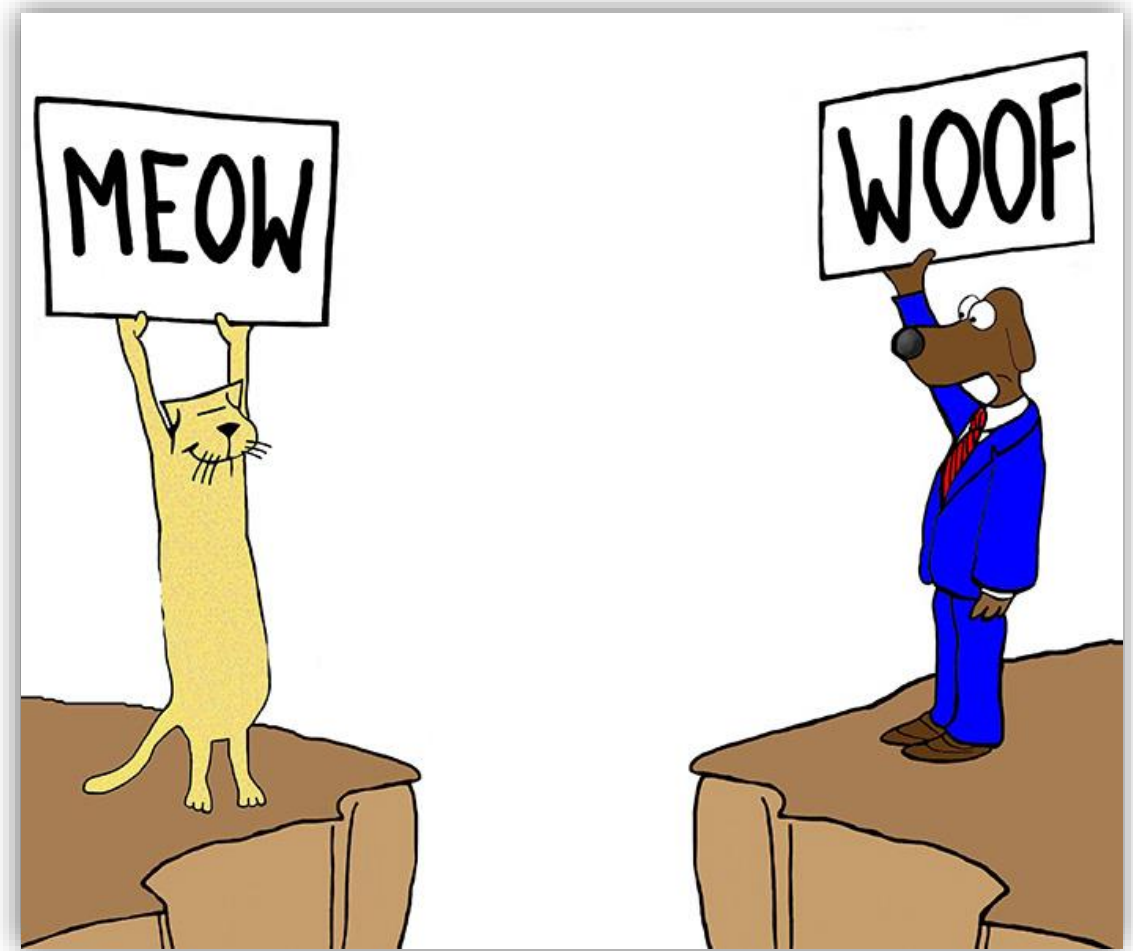


Be part of a convincing brand



Be quietly tenacious

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