

# SOCIAL MEDIA IMPACT ON INFECTION PREVENTION AND CONTROL

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[www.webbertraining.com](http://www.webbertraining.com)

January 7, 2020

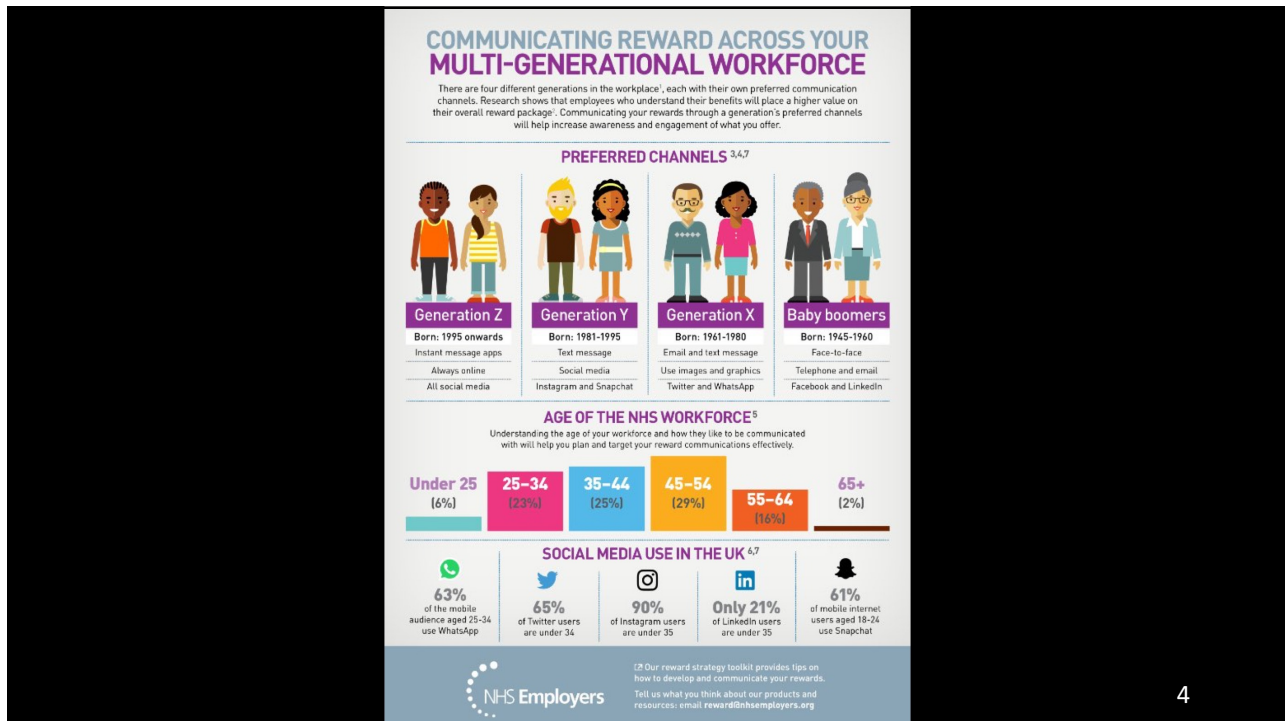
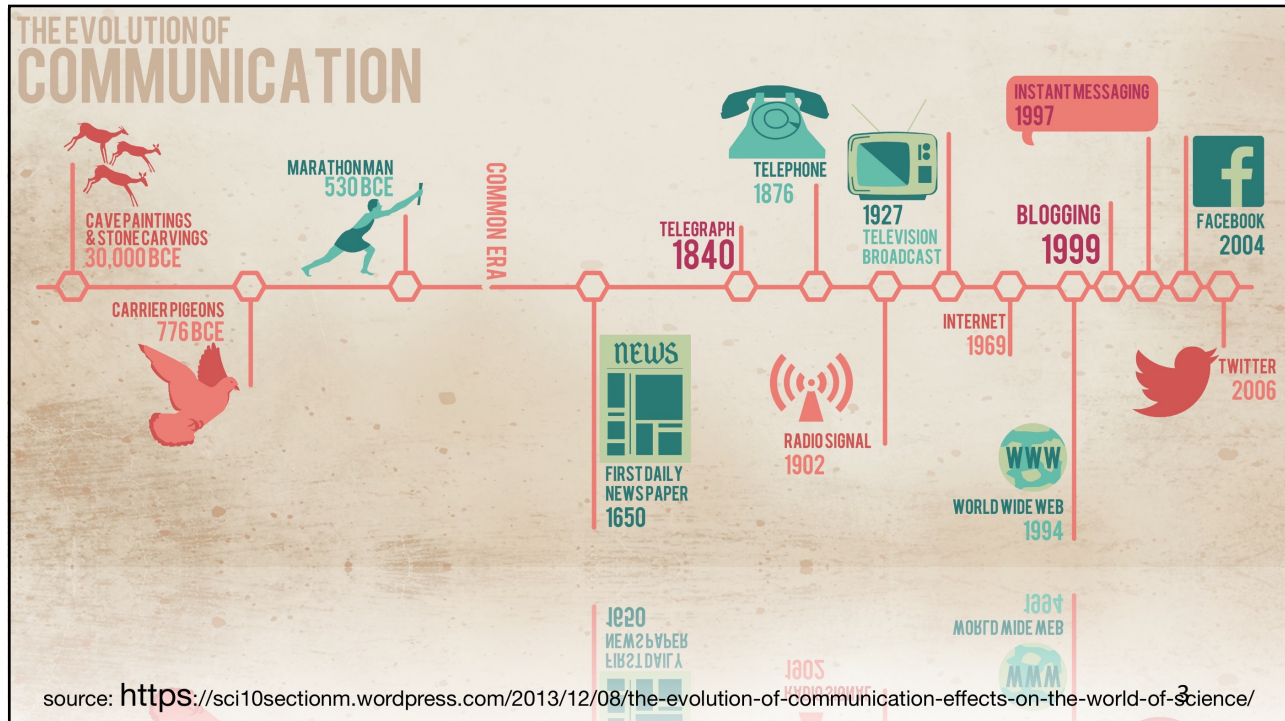
## Learning objectives



- To raise awareness of the landscape of existing SoMe (social media) and their respective functions
- To use SoMe for communication of skills, knowledge, and recommendations
- To understand the use of SoMe as a research tool
- To understand the public health usage
- To include patients' voice in using SoMe
- To evaluate and prevent risks related to SoMe

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## COMMUNICATING REWARD ACROSS YOUR MULTI-GENERATIONAL WORKFORCE

There are four different generations in the workplace<sup>1</sup>, each with their own preferred communication channels. Research shows that employees who understand their benefits will place a higher value on their overall reward package<sup>2</sup>. Communicating your rewards through a generation's preferred channels will help increase awareness and engagement of what you offer.

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### PREFERRED CHANNELS <sup>3,4,7</sup>



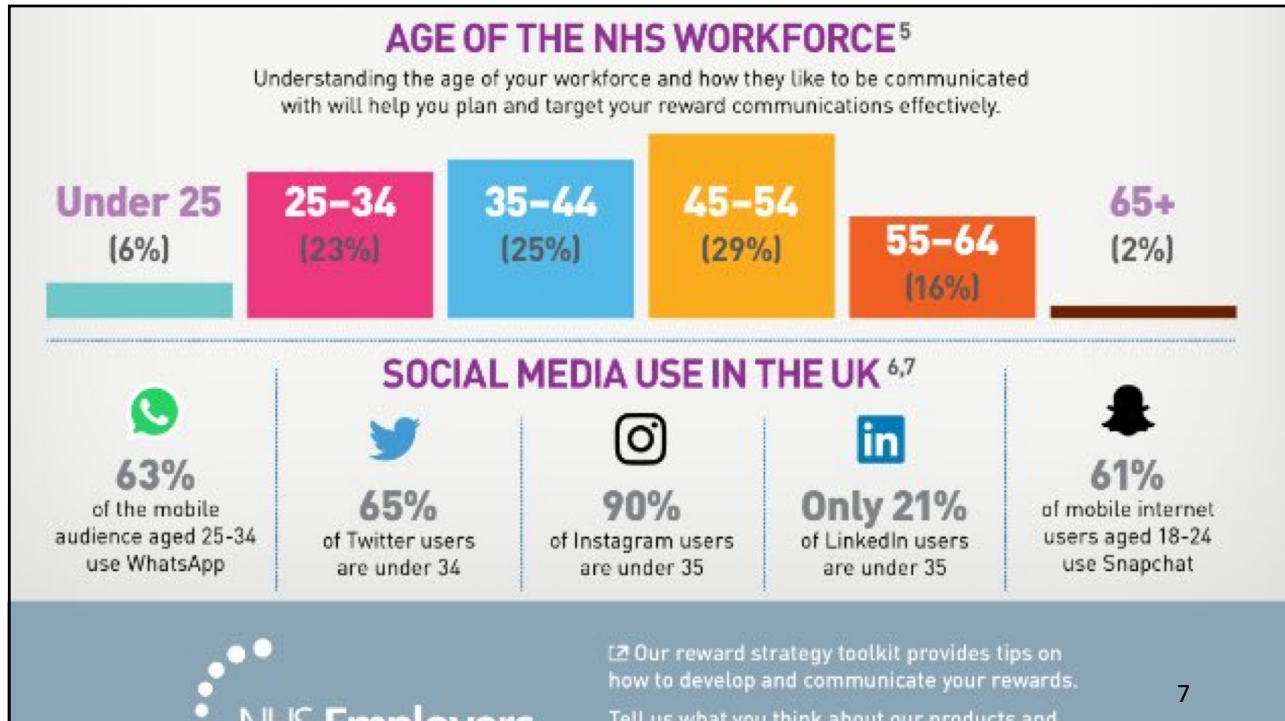
### PREFERRED CHANNELS <sup>3,4,7</sup>

Generation Z	Generation Y	Generation X	Baby boomers
Born: 1995 onwards	Born: 1981-1995	Born: 1961-1980	Born: 1945-1960
Instant message apps	Text message	Email and text message	Face-to-face
Always online	Social media	Use images and graphics	Telephone and email
All social media	Instagram and Snapchat	Twitter and WhatsApp	Facebook and LinkedIn

**AGE OF THE NHS WORKFORCE <sup>5</sup>**

Understanding the age of your workforce and how they like to be communicated

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## I. What is “Social Media”?

Landscape of existing channels and their respective use

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## What is a Social Media?

*Definition & existing channels*



# SOCIAL MEDIA

websites and applications that enable users to create and share content or to participate in social networking

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## What is a Social Media?

*Definition & existing channels*



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**What is a Social Media?**

*Definition & existing channels*



**LinkedIn**

---

specifically for the business community to establish and document networks of people they know and trust professionally

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**What is a Social Media?**

*Definition & existing channels*



**Facebook**

---

keep in touch with friends, family and colleagues

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**What is a Social Media?**

*Definition & existing channels*



**Twitter**

280 characters

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**What is a Social Media?**

*Definition & existing channels*



**Youtube**

video-sharing

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**What is a Social Media?**

*Definition & existing channels*



**Instagram**

upload, edit and share  
photos

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**What is a Social Media?**

*Definition & existing channels*



**Blog**

personal online journal

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## What is a Social Media?

*Definition & existing channels*



### #hashtag

label which makes it easier for users to find messages with a specific theme or content

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## What is a Social Media?

*Access to Social Media*

JAN  
2019

### SOCIAL MEDIA PENETRATION BY REGION

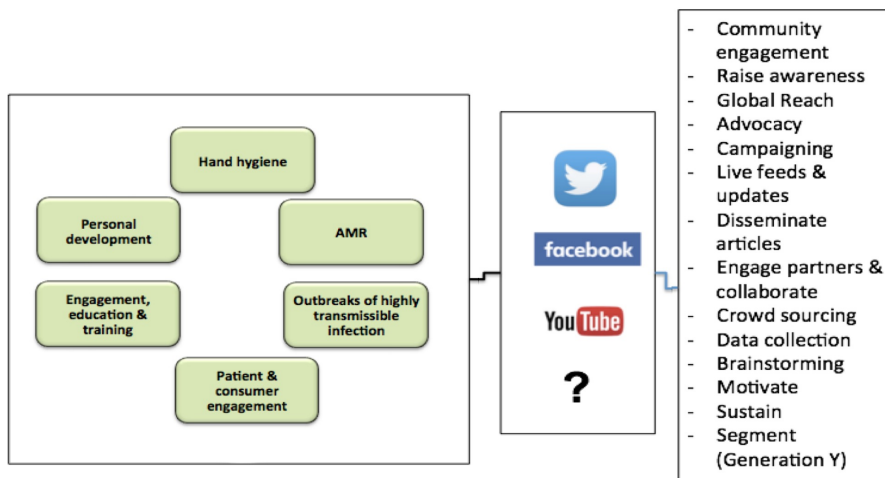
BASED ON MONTHLY ACTIVE USERS OF THE MOST ACTIVE PLATFORMS IN EACH COUNTRY / TERRITORY, COMPARED TO TOTAL POPULATION



Global Digital Report 2019



### Use in Clinical Practice



Source: The use of Social Media in support of global infection prevention and control by Claire Kilpatrick and Jules Storr

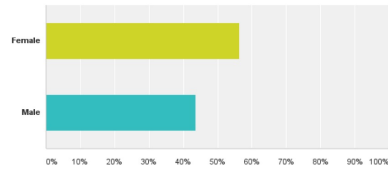
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## Social Media use by healthcare professionals

### Demographics

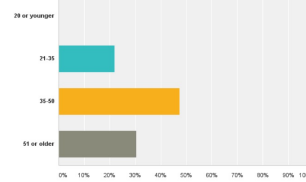
Q1 Are you male or female?

Answered: 749 Skipped: 0



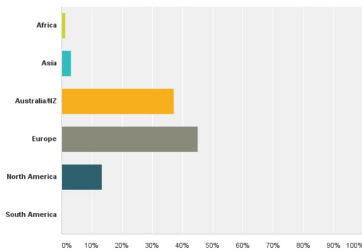
Q2 What is your age?

Answered: 749 Skipped: 0



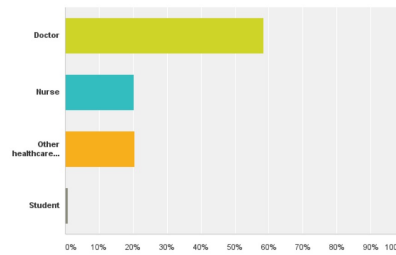
Q3 In which continent do you reside?

Answered: 749 Skipped: 0



Q4 What is your profession?

Answered: 749 Skipped: 0



n=749

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## Use in Clinical Practice

### Demographics



Which platform do  
they prefer?

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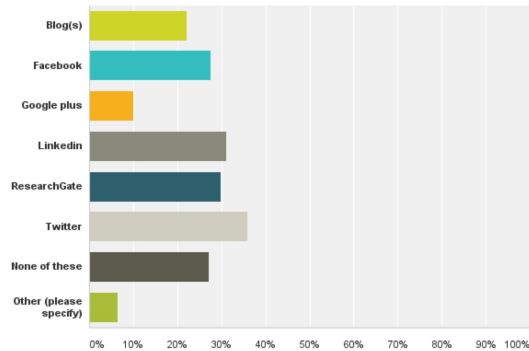
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**Social Media Use by healthcare worker**

**Demographics**

**Q5 Do you use any of the following social media sites regularly for professional use?  
 Select any that apply**

Answered: 742 Skipped: 7



(n=749) No significant correlation between gender, age, location or profession, and social media use.

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Learning to speak « TWITTER »

**Prof Didier Pittet** ✓  
12.9 k Tweets

↑ Tweet pinned

**Prof Didier Pittet** ✓  
@DidierPittet

Hand hygiene improves patient safety and saves lives. Let's together.

Geneva, Switzerland [en.wikipedia.org/wiki/Didier\\_Pi](https://en.wikipedia.org/wiki/Didier_Pittet)  
 Birth on March 20, 1957 Joined Twitter in March 2013

318 subscriptions 6 667 subscribers

**Prof Didier Pittet** ✓ @DidierPittet · Nov. 21

33% of surgical patients get a postoperative infection, of which 51% can be antibiotic resistant. Misuse of antibiotics all surgical patients at risk. Improve #qualitycare and #patientsafety and reduce #AntibioticResistance through SSI reduction #WAAW @SISEurope @worldsis\_org

Misuse of antibiotics puts all surgical patients at risk

Up to 33% of surgical patients get a postoperative infection, of which 51% can be antibiotic resistant

Up to 15% of women around the world get an infection after a caesarean section

43% of patients have surgical antibiotic prophylaxis (SAP) inappropriately continued after the operation

WHAT SHOULD HEALTH WORKERS DO TO PREVENT AMR IN SURGERY?

- Give intravenous SAP when recommended, depending on the type of operation, within 120 minutes preceding surgical incision
- For effective SAP, adequate antibiotic doses concentrations should be present at the time of surgical incision and throughout the procedure. Thus, antibiotics with a short half-life should be administered close to incision time.

WHO SHOULD BE INVOLVED IN ENSURING APPROPRIATE ANTIBIOTIC USE IN SURGERY?

Improvement of antibiotic use in surgical services should be part of the antimicrobial stewardship programme

WHAT SHOULD YOU NOT DO?

- Continuing SAP after the operation
- Using SAP for non-surgical patients
- Using SAP for non-surgical patients
- Using SAP for non-surgical patients

REDUCE

the risk of surgical site infection (SSI) by improving SAP and antibiotic prophylaxis (SAP) and antibiotic resistance through SSI reduction

IMPROVE

quality of care and patient safety and reduce antimicrobial resistance through SSI reduction

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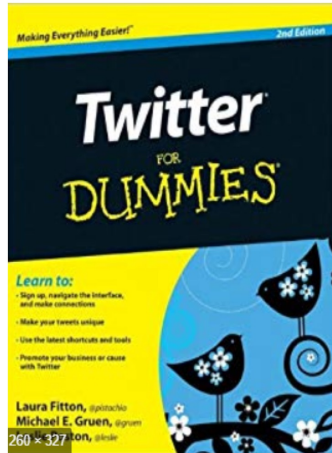
**Use in Clinical Practice**

**How to use Twitter**

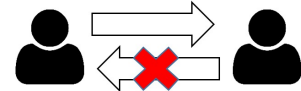


As a tweeter

As an observer (+/- retweeter)



- 280 characters maximum (good training !)
- Add a photo/video/poll/gif
- Link (account for 23 characters)
  - ++ credibility of your tweet
- **#Hashtag**
  - Label your tweet
  - Choose the most trending hashtag (quick research) for visibility
  - Include the #hashtag in your #conference tweet
- **@DidierPittet**
  - Address the tweet to any twitter account
  - Target an influencer/Journal for retweet (RT)
  - Build a community



*Do not follow too many persons*

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**Twitter Tools**

Symlur #

Twitter analytics

Twitdeck

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**Use in Clinical Practice**

How to use Twitter

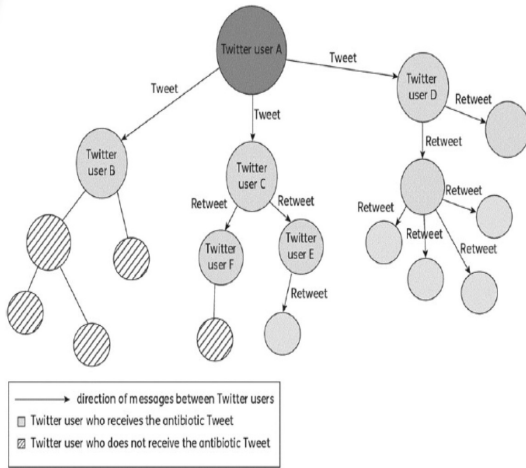


Figure 15: Retweet trees of 'air france flight' tweets

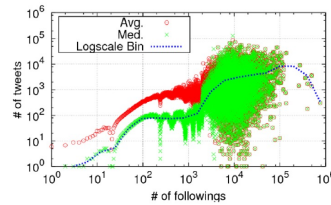


Figure 3: The number of followings and that of tweets per user

CID, 2015 doi: 10.1093/cid/civ071

ACM DL, 2010 doi: [10.1145/1772690.1772751](https://doi.org/10.1145/1772690.1772751): topological characteristics of Twitter among 41.7 mio profiles, 1.47 bio social relations and 106,477 tweets

**Use in Clinical Practice**

How to use Twitter

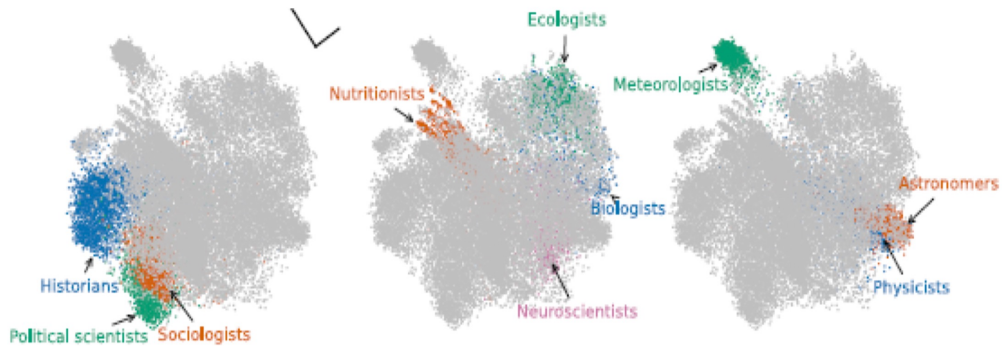


Fig 5. Follower network of scientists on Twitter.

PLOSOne, 2017; <https://doi.org/10.1371/journal.pone.0175368>

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## Use in Clinical Practice

### Why using Twitter



- Information flow:
  - Latest publications
- Follow influential colleagues in your field
- National/International scientific meetings
  - Follow conference #hashtags
    - #ICPIC19
    - #ECCMID2020
    - #Decennial2020
- Connectivity
- Message diffusion
- Outbreak
  - Ebola
- Recruit patients for clinical trials
- Disseminate information
- Journal clubs
- Peer-review information
- Real time updates
- Research collaborations
- Public engagement

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## Use in Clinical Practice

### Why using Twitter



INVITED ARTICLE

CLINICAL PRACTICE

Ellie J. C. Goldstein, Section Editor

## Review of Twitter for Infectious Diseases Clinicians: Useful or a Waste of Time?

Debra A. Goff,<sup>1</sup> Ravina Kullar,<sup>2</sup> and Jason G. Newland<sup>3</sup>

<sup>1</sup>Department of Pharmacy, The Ohio State University Wexner Medical Center, Columbus; <sup>2</sup>Clinical Scientific Director, Department of Medical Affairs, Cubist Pharmaceuticals, Lexington, Massachusetts; and <sup>3</sup>Department of Pediatrics, Division of Infectious Diseases, Children's Mercy Hospital-Kansas City, University of Missouri-Kansas City, Missouri

Twitter is a social networking service that has emerged as a valuable tool for healthcare professionals (HCPs). It is the only platform that allows one to connect, engage, learn, and educate oneself and others in real time on a global scale. HCPs are using social media tools to communicate, educate, and engage with their peers worldwide. Twitter allows HCPs to deliver easily accessible "real-time" clinical information on a global scale. Twitter has more than 500 million active users who generate more than 58 million tweets and 2.1 billion search queries every day. Here, we explain why Twitter is important, how and when an infectious diseases (ID) HCP should use Twitter, the impact it has in disseminating ID news, and its educational value. We also describe various tools within Twitter, such as Twitter Chat, that connect and bond HCPs on a specific topic. Twitter may help ID HCPs teach others about the global responsible use of antimicrobials in a world of escalating antimicrobial resistance.

**Keywords.** Twitter; social media; infectious diseases; education.

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**Use in Clinical Practice**

**Why use Twitter – Learning platform**

**WuidQ: Washington University ID Questions**  
 @WuidQ  
 Learning infectious disease via board-style MCQs & case discussions. Gerome Escota @mddreamchaser & Ige George @IgeGeorgeMD  
 St Louis, MO A rejoint Twitter en juillet 2018  
 1 171 abonnements 2 835 abonnés

**WuidQ: Washington University ID Questions** @WuidQ · 15h  
 En réponse à @WuidQ  
 2/9  
 Typical illness script for HSV esp in immunocompetent patients:  
 ✓ painful ulcers, vesicles/group of vesicles that ulcerate  
 Among immunocompromised patients, HSV can also manifest atypically. **Herpes vegetans** is one of the atypical HSV manifestations.

**WuidQ: Washington University ID Questions** @WuidQ · 15h  
 3/9  
**Herpes vegetans**  
 ■ exophytic, verrucous, tumor-like presentation of HSV  
 ■ seen in immunocompromised patients, in particular people with HIV  
 Occurrence among people with HIV is independent of CD4  
 ncbi.nlm.nih.gov/pubmed/25660091 and no strong evidence w/ IRIS.

**WuidQ: Washington University ID Questions** @WuidQ · 15h  
 4/9  
 Thought to be a/w HIV-associated immune-dysregulation but exact pathogenesis is unclear:  
 ■ HIV-infected dendritic cells in the epidermis overproduce anti-apoptotic TNF & IL-6  
 ■ leads to keratinocyte proliferation and hyperkeratosis  
 ncbi.nlm.nih.gov/pubmed/17205432

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**Use in Clinical Practice**

**Why using Twitter – Learning platform**

**Tony Breu** @tony\_breu · 18 oct.  
 5/  
 What about winter might increase transmission?  
 In 2007, research on guinea pigs showed that low relative humidity (RH) and colder temperatures favor virus transmission.

Cold and dry? Sounds a lot like winter!

**Tony Breu** @tony\_breu · 18 oct.  
 14/14  
 ✨Why does influenza have a "seasonal" trend with a winter peak? ✨  
 ➤ winter is dry and cold  
 ➤ decreased humidity promotes viral stability and droplet suspension → increased transmission  
 ➤ tropical climates have less of a true flu season

**What's your hypothesis?**

Winter is drier	22%
Winter has high due point	11%
<b>People are indoors more</b>	<b>64%</b>
Higher UV indices	3%

8 518 votes · Résultats finaux  
 2:28 AM · 18 oct. 2019 · Twitter Web App  
 420 Retweets 776 J'aime

**Graphs showing transmission rates:**

- A:** 100% transmission, 20% RH and 20°C
- B:** 73% transmission, 20% RH and 20°C
- C:** 28% transmission, 50% RH and 20°C
- D:** 0% transmission, 80% RH and 20°C
- E:** 28% transmission, 50% RH and 20°C
- F:** 25% transmission, 50% RH and 20°C
- G:** 75% transmission, 80% RH and 20°C
- H:** 70% transmission, 80% RH and 20°C
- I:** 0% transmission, 80% RH and 20°C
- J:** 0% transmission, 80% RH and 20°C

At the lowest relative humidity, viral transmission was high (green).  
 At the highest relative humidity, viral transmission was low (red).

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# Social Media Impact on Infection Prevention and Control

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### A Webber Training Teleclass

## Use in Clinical Practice

### Why using Twitter – Learning platform



### International Urology Journal Club via Twitter: 12-Month Experience

Isaac A. Thangasamy<sup>a</sup>, Michael Leveridge<sup>b</sup>, Benjamin J. Davies<sup>c</sup>, Antonio Finelli<sup>d</sup>, Brian Stork<sup>e</sup>, Henry H. Woo<sup>f</sup> 

I will also add that my kids said: "Mom, it's so much better when you can do a journal club at home with us than when you have to be at work." #IDJClub

#v 

Twitter for iPhone



#### ID Journal Club

@IDJClub

An #IDTwitter journal club, held monthly on first Mondays @ 9 pm EST. Join the discussion using #IDJClub.

Traduire la biographie

[idjournal.club](http://idjournal.club) A rejoint Twitter en mai 2019

5 abonnements 1 963 abonnés

Suivi par Clinical Microbiology and Infection, WuidQ: Washington University ID Questions et 6 autres personnes que vous suivez

European Urology, 2014, doi: 10.1016/j.eururo.2014.01.034



ID Journal Club @IDJClub · 4 nov.

Don't forget to join us tomorrow evening for our 2nd #IDJClub, discussing the DANCE trial (6 vs 12 days antibiotics for severe cellulitis).

Get the article at the link  or email us at IDTwitterJC@gmail.com

 ID Journal Club @IDJClub · 23 oct.

Our next #IDJClub is Nov 4th 9 pm EST & we will discuss the DANCE trial, an RCT comparing 6 vs 12 days of antibiotics for severe cellulitis

DANCE bucked a trend by suggesting shorter is not always better, but did this trial have all the right moves? 

[clinicalmicrobiologyandinfection.com/article/S1198-...](http://clinicalmicrobiologyandinfection.com/article/S1198-...)

Article in Press

Antibiotic treatment for 6 days versus 12 days in patients with severe cellulitis: a multicentre randomised, double-blind, placebo-controlled, non-inferiority trial

[Duncan R. Cranendonk](#), MD<sup>1,2,\*</sup> , [Brent C. Opmeer](#), PhD<sup>3</sup>, [Michiel A. van Agtmael](#), MD, PhD<sup>4</sup>, [Judith Branger](#), MD, PhD<sup>5</sup>, [Kees Brinkman](#), MD, PhD<sup>6</sup>, [Andy I.M. Hoepelman](#), MD, PhD<sup>7</sup>, [Fanny N. Lauw](#), MD, PhD<sup>8</sup>, [Jan Jelrik Oosterheert](#), MD, PhD<sup>7</sup>, [Annemarie H. Pijlman](#), MD<sup>9</sup>, [Sanjay J.C. Sankatsing](#), MD, PhD<sup>10</sup>, [Robin Soestekouw](#), MD<sup>11</sup>, [Jan Veenstra](#), MD, PhD<sup>12</sup>, [Peter J. de Vries](#), MD, PhD<sup>13</sup>, [Jan M. Prins](#), MD, PhD<sup>1</sup>, [W. Joost Wiersinga](#), MD, PhD<sup>1,2,\*</sup> 



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ID Journal Club @IDJClub · 5 nov.

Please introduce yourselves – even lurkers ;) – and disclose COIs relevant to today's discussion.

And a reminder to please use the hashtag #IDJClub with all posts so that you can link in to the discussion

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## Use in Clinical Practice

### Why using Twitter



Table 2. Selected People, Journals, and Infectious Diseases Organizations to Follow on Twitter

Name	Twitter Name	Twitter Profile	Number of Followers
<b>Individuals</b>			
Tom Frieden, MD	@DFriederCDC	CDC director, MD, and disease detective	89.2 K
Jason Gallagher, PharmD	@JGPharmD	ID pharmacist, author of <i>Antibiotics Simplified</i>	326
Debra Goff, PharmD	@dpharmd	ID pharmacist, global antimicrobial stewardship educator	690
Marc Mendelson, MD	@SouthAfricanASP	Cochair South African Antimicrobial Stewardship Programme, president of the Federation of Infectious Diseases Societies of Southern Africa	201
Jon Otter	@jotter	Editor of <i>Journal of Hospital Infection</i>	901
Elj Pienkovich, MD	@elkova	ID epidemiologist and health services researcher	2231
Karin Pho, MD	@kewrmd	Social media's leading physician	115.4 K
Laura Piddock	@LauraPiddock	Professor of microbiology, director of Antibiotic Action, chair in Public Engagement for British Society for Antimicrobial Chemotherapy	2172
Didier Pittet, MD	@DidierPittet	Director of Infection Control Programme and World Health Organization external lead	1368
Deniel Uslan, MD	@dan_uslan	Director of Antimicrobial Stewardship, associate director of Clinical Epidemiology & Infection Prevention for University of California-Los Angeles Health	492
<b>Pediatrics</b>			
Nick Bennett, MD	@pebs_id_doc	Pediatric ID physician	3166
Natasha Burgert, MD	@DoctorNatasha	Pediatrician who uses social media to connect with her patients	11.1 K
Saul Hymes, MD	@IDDocHymes	Pediatric ID physician and social media editor for @PIDSociety	1259
Jason Newland, MD	@JasonNewland	Pediatric ID physician dedicated to the appropriate use of antibiotics	531
Wendy Sue Swanson, MD	@SeattleMamaDoc	Pediatrician and executive director of Digital Health at Seattle Children's Hospital	25.8 K
<b>Journals</b>			
Infection Control & Hospital Epidemiology	@ICHEJournal		514
Lancet Infectious Diseases	@TheLancetIDis		1692
Journal American Medical Association	@JAMA_current		106.2 K
New England Journal Medicine	@NEJM		236.6 K

### FOLLOW INFLUENTIAL ACCOUNTS



### ORGANIZATIONS ARE ACTIVE



### JOURNALS ALSO



CID, 2015 doi: 10.1093/cid/civ071

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## Use in Clinical Practice

### Why using Twitter

The screenshot shows a Twitter interface with several tweets. On the left, a tweet from SHEA (@SHEA\_Epi) promotes the Decennial 2020 conference. In the center, a tweet from Antibiotic Steward (@ABSteward) shares a new journal article. On the right, a tweet from ICHE Journal (@ICHEJournal) discusses interfacility transmission of C. difficile. Below these, a tweet from Jon Otter (@jonotter) discusses MDR Gram-negative bacteria. A sidebar on the right lists 'FOLLOW INFLUENTIAL ACCOUNTS' with profile pictures of various experts in the field.

CID, 2015 doi: 10.1093/cid/civ071

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## Use in Clinical Practice

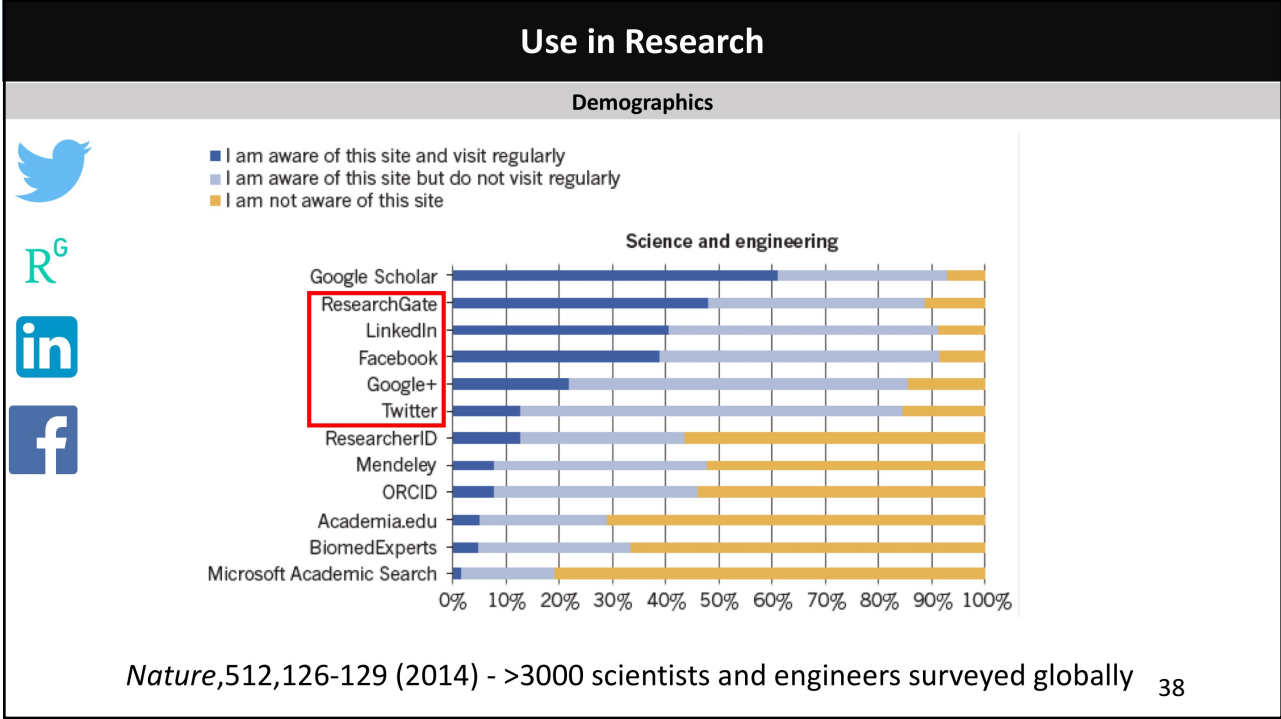
### Why using Blogs

The screenshot displays two blog pages. The left page, 'Reflections on Infection Prevention and Control', features a blue header and a post titled 'Using the Toolkit to build a CPE policy' with an image of a metal toolkit. The right page, 'Controversies in Hospital Infection Prevention', has a white header and includes a line graph showing trends over time, along with several article thumbnails such as 'The ineradicable Mycobacterium chimera' and 'New Rule!'.

<https://reflectionsipc.com/>

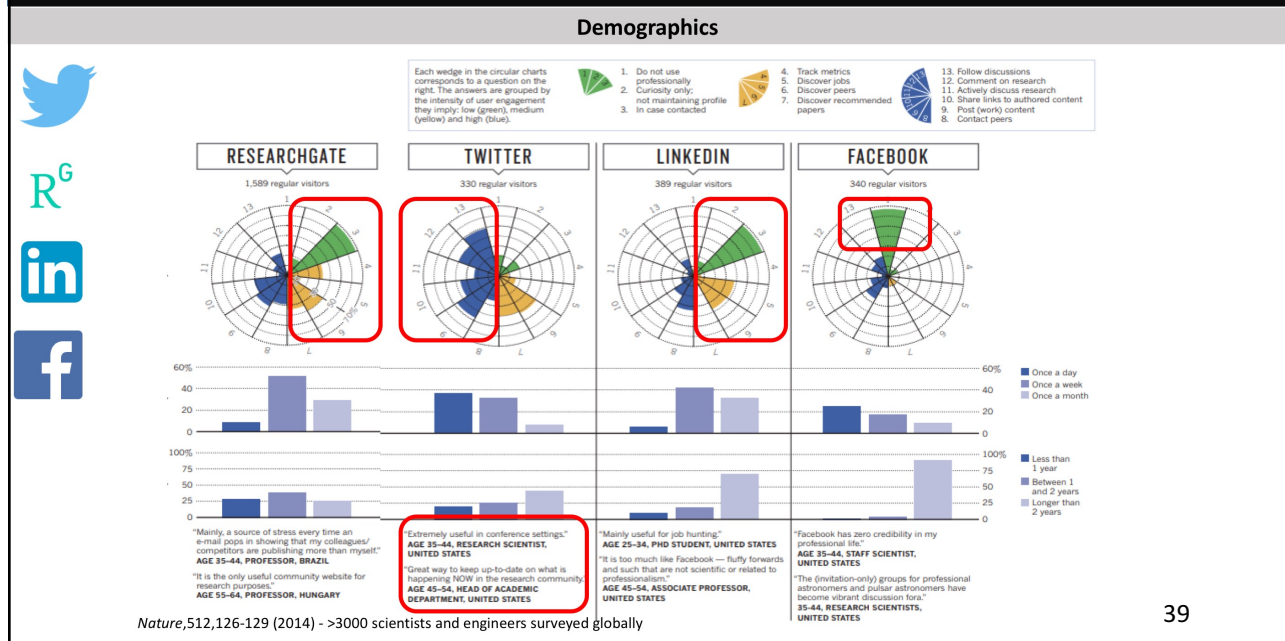
<http://haicon controversies.blogspot.ch/>

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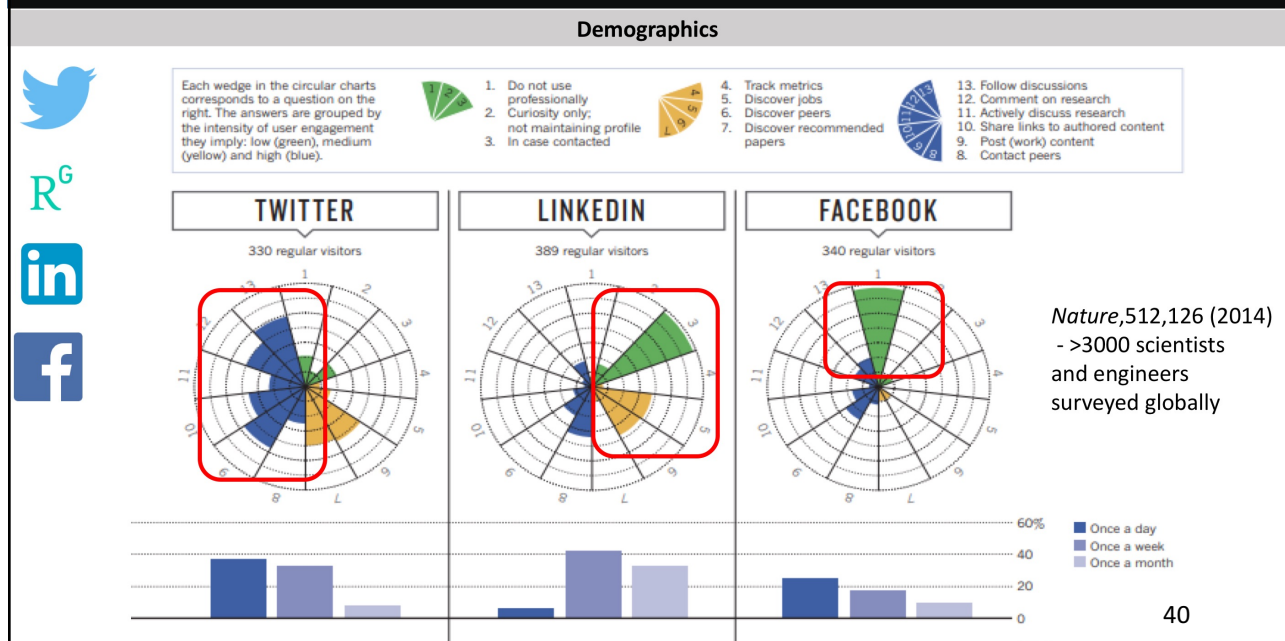
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**Use in Research**



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**Use in Research**



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## Use in Research

### How to GET an information

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## Use in Research

### How to GET an information

**But still worth to read the article...**

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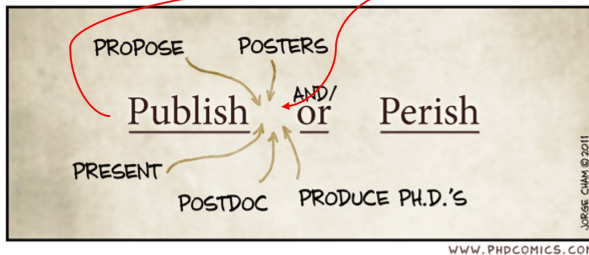
# Social Media Impact on Infection Prevention and Control

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## Use in Research

### How to SHARE an information



Tweets (ie, posts on Twitter) of manuscripts have been associated with **increased citations** and **higher overall impact factors** for journals.

RT, RT, RT...

ICHE, 2017 doi: 10.1017/ice.2017.242

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## Use in Research

### How to COMMUNICATE between scientists



Beyond the hall...  
Reach a wider audience



jan kluytmans @jankluytmans · 24 avr. 2018  
Recipe for a superbug according to James Johnson at #ECCMID2018

Digital impression (or reach) of a tweet was measured by calculating the total number of followers who could view a particular tweet.

Table 1 Conferences analysed in 2013.

Meeting	Date Held	Account handle	Hashtag	Location	No. of Attendees
1 28th EAU Annual Congress	15-19 March 2013	@ezweb	#EAU13	Milan, Italy	11191
2 USANZ 46th Annual Scientific Meeting	13-16 April 2013	@anzlogmeeting	#USANZ13	Melbourne, Australia	986
3 AJA Annual Meeting	4-8 May 2013	@amerurological	#AJA13	San Diego, USA	15100
4 BAUS Annual Meeting	17-20 June 2013	@baurology	#BAUS13	Manchester, UK	1156
5 CIA Annual Meeting	22-25 June 2013	@canurologoc	#CIA13	Niagara Falls, Canada	911
6 Jpn PCWC	6-10 August 2013	@japropstate	#PCWC13	Melbourne, Australia	861
7 10th ERUS Congress	3-5 September 2013	@erusrobotics	#ERUS13	Stockholm, Sweden	760
8 33rd Congress of the IUT	8-12 September 2013	@iut_urology	#IUT2013	Vancouver, Canada	2524
				Total	33489

Table 3 Conference backdrop: impressions generated by conference account in the 5 days before the conference.

Conference hashtag	Twitter account	In the 5 days before the conference	
		Tweets	Impressions
#EAU13	@ezweb	2	4,628
#USANZ13	@anzlogmeeting	41	10,535
#AJA13	@amerurological	34	122,298
#BAUS13	@baurology	1	138
#CIA13	@canurologoc	0	0
#PCWC13	@japropstate	64	36,864
#ERUS13	@erusrobotics	2	2,314
#IUT2013	@iut_urology	0	0
Total		144	176,777

But also useful if you are participating to the conference and cannot choose between the too many sessions !

#ICPIC2019

BJUJ, 2014 doi:10.1111/bju.12910

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**Social Media Impact on Infection Prevention and Control**  
**Prof. Didier Pittet, University of Geneva Hospitals, Switzerland**  
**A Webber Training Teleclass**

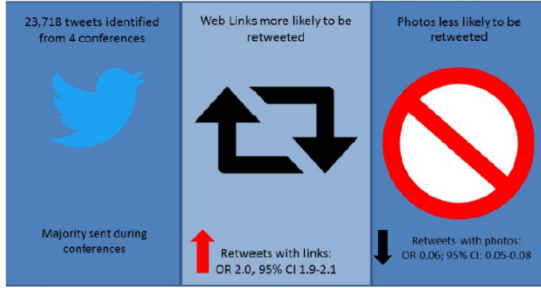
**Use in Research**

How to COMMUNICATE between scientists



**How to disseminate ? – live tweeting (but also pre-conference)**

**Twitter helps with information sharing & networking at infection control conferences**



Mitchell et al. ICHE. Online August 2017



Table 2

Factors associated with retweets in multivariable analysis

Tweet characteristic	All tweeters OR (95% CI)	All tweeters (with inclusion of interaction terms) OR (95% CI)	Subgroup analysis <1000 followers OR (95% CI)	Subgroup analysis >1000 followers OR (95% CI)
Inclusion of media (video or picture)	1.50 (1.30–1.74)	1.53 (1.33–1.78)	1.40 (1.14–1.72)	1.76 (1.43–2.17)
Mention of other tweeters	2.01 (1.75–2.32)	2.19 (1.84–2.60)	2.13 (1.76–2.57)	1.67 (1.35–2.07)
Inclusion of other hashtags	1.23 (1.07–1.42)	1.20 (1.04–1.39)	1.00 (0.82–1.22)	1.66 (1.35–2.04)
Inclusion of URL	1.42 (1.16–1.74)	2.32 (1.77–3.03)	1.28 (0.89–1.83)	1.74 (1.37–2.21)
The number of followers (per 100 increase)	1.01 (1.01–1.01)	1.02 (1.02–1.03)	NA	NA

CID, 2019 <https://doi.org/10.1016/j.cmi.2019.04.030> – analysis on ECCMID 2018 -- #ECCMID2018

ICHE 2017 DOI: 10.1017/ice.2017.170 – analysis on UK Infection Prevention Society, IDWeek 2016, the Federation of Infectious Society/Hospital Infection Society, and the Australasian College for Infection Prevention and Control -- #IP2016, #IDWeek2016, #FISHIS16, and #ACIPC16

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**Use in Research**

How to COMMUNICATE between scientists



**How to disseminate ? – live tweeting (but also pre-conference)**

**... 10 simple rules**

1. **Short conference hashtag** (spare space)
2. Hashtag **promotion** in all conference material
3. **Encourage live tweeting** (facilitated by session chairs who could relay questions to the twitterosphere)
4. Conference Twitter **etiquette** (good practices)
5. Conference tweet **layout** (speaker name, affiliation, conference hashtag in the first tweet)
6. Keep conference discussion **flowing** (quick summary of the session – hashtag - @ potentially interested individuals)
7. **Differentiate your opinions** from the Speaker's
8. Bring **questions up from outside** (raise questions from those outside the conference → reply with speaker responses)
9. Meet other live tweeters face to face (tweetups to consolidate relations)
10. Emphasize impact of live tweeting (ensure to highlight the keypoints from the conference)

PLOSOne, 2014; doi:10.1371/journal.pcbi.1003789

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Use in Research

How to COMMUNICATE between scientists

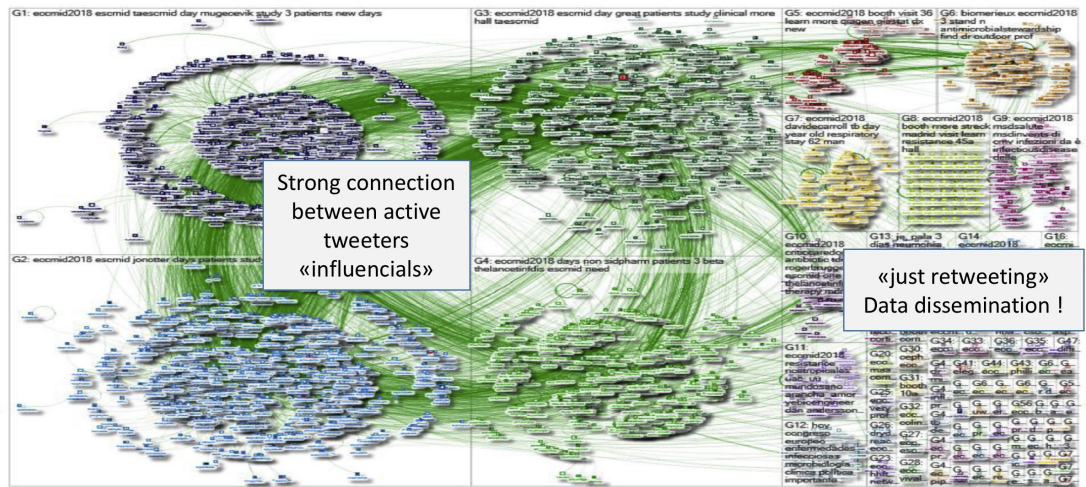


Fig. 1. Network activity of ECCMID 2018. This figure illustrates the extent of connections. Each picture represents a Twitter user who tweeted, was mentioned, and/or retweeted posts using the #ECCMID2018 hashtag. The map displays a predominantly 'tight crowd' pattern formed by highly connected tweeters (G1–G4).

CID, 2019 <https://doi.org/10.1016/j.cmi.2019.04.030> – analysis on ECCMID 2018

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Use in Research

How to COMMUNICATE between scientists



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M. Cevik et al. / Clinical Microbiology and Infection xxx (xxxx) xxx

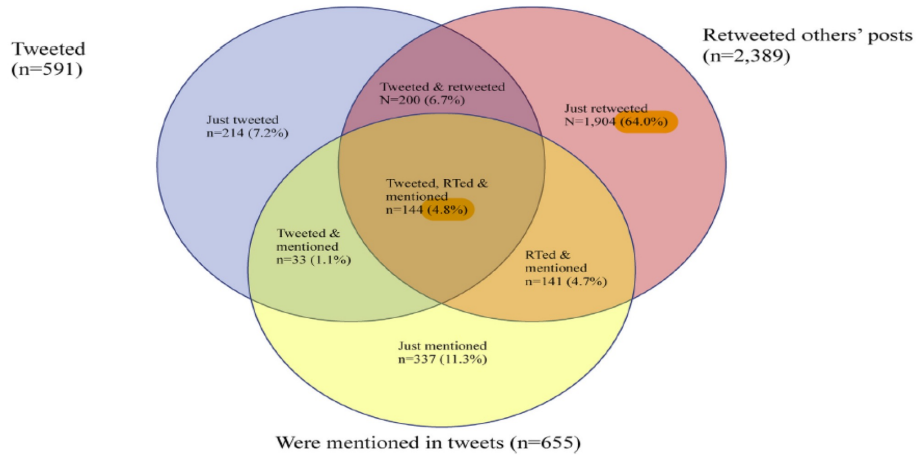


Fig. 2. Social media influencers tweeting, retweeting and mentioned in tweets using the #ECCMID2018 hashtag. Venn diagram summarizing all the users involved in ECCMID2018 social media activity (n = 2973 accounts). It classifies users into tweeters, retweeters and those mentioned and identifies most influential tweeters depicted in the centre of the diagram.

CID, 2019 <https://doi.org/10.1016/j.cmi.2019.04.030> – analysis on ECCMID 2018

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IV. Use for Public Health

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**Use in Public Health – Awareness raising campaigns**



**In 2019...**

**> 27 MILLIONS**  
Global Reach - until May 8th



World Health Organization



HEALTH FOR ALL

**SAVE LIVES  
CLEAN YOUR HANDS**



**CLEAN CARE  
FOR ALL  
IT'S IN YOUR  
HANDS**



Mentioned over 6300 times

#HandHygiene #InfectionPrevention #HealthForAll

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**Prof. Didier Pittet, University of Geneva Hospitals, Switzerland**  
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**Use in Public Health – spread awareness**



**But...**

**FACTS**

Scientists on Twitter: Preaching to the choir or singing from the rooftops?

This article has been corrected  
 Published Online: 28 June 2018 | Views: 28299  
 Isabelle M. Côté, Emily S. Darling  
 PDF Citation (RIS) Citation (BibTex)

**Scientists on social media: are we preaching to the choir or singing from the rooftops?**

September 12, 2019 | Jon Otter (@jonotter) | communication | inreach, outreach, social media, Twitter

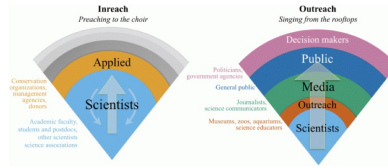


Figure 1: Conceptual summary of 'inreaching' and 'outreaching' on Twitter.

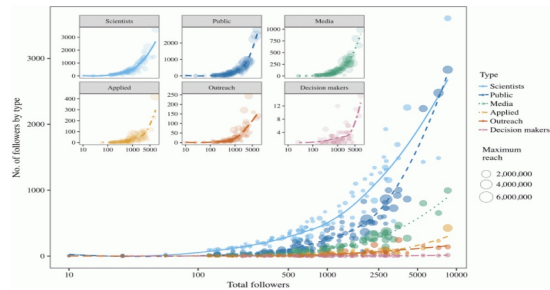


Figure 2: Follower accumulation on Twitter (aka the magic 1k followers!)

... do not forget mentioning handles of influencers (journals, celebrities...) and/or popular hashtags to foster retweeting activities and make your tweet flying

51

**Use in Public Health – spread awareness**

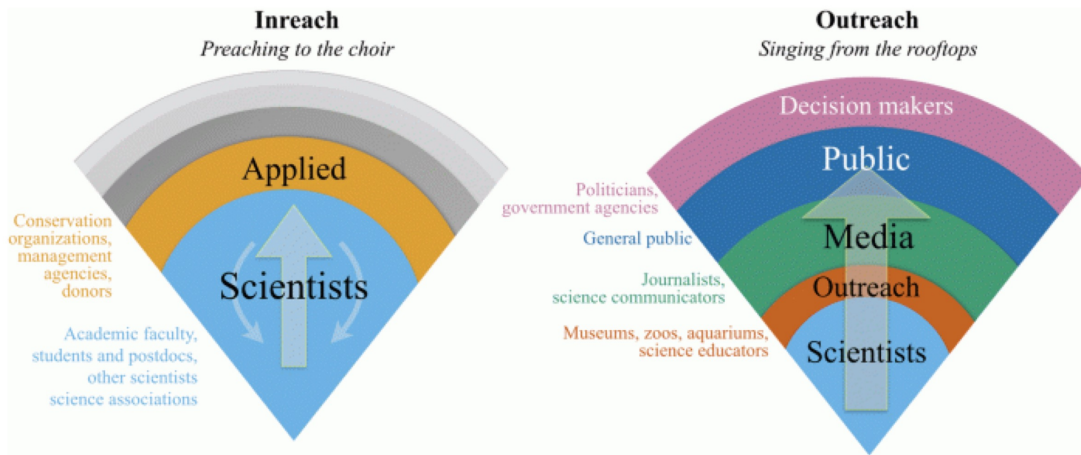


Figure 1: Conceptual summary of 'inreaching' and 'outreaching' on Twitter.

... do not forget mentioning handles of influencers (journals, celebrities...) and/or popular hashtags to foster retweeting activities and make your tweet flying

52

**Social Media Impact on Infection Prevention and Control**  
**Prof. Didier Pittet, University of Geneva Hospitals, Switzerland**  
**A Webber Training Teleclass**

**Use in Public Health – *spread awareness***

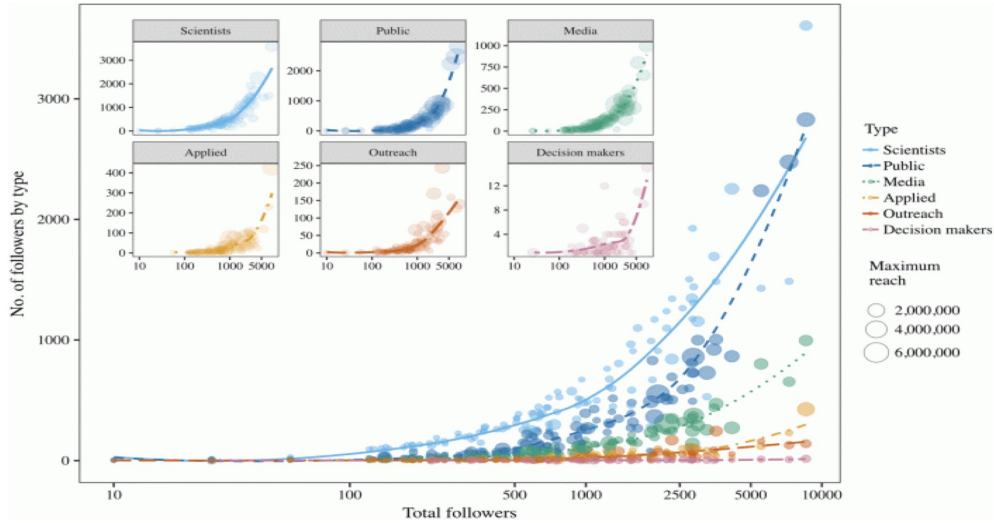


Figure 2: Follower accumulation on Twitter (aka the magic 1k followers!)

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**Use in Public Health – *assess awareness***

*J Antimicrob Chemother* 2014; **69**: 2568–2572  
 doi:10.1093/jac/dku165 Advance Access publication 25 May 2014

**Journal of Antimicrobial Chemotherapy**

**What makes people talk about antibiotics on social media?  
 A retrospective analysis of Twitter use**

Oliver J. Dyar<sup>1</sup>, Enrique Castro-Sánchez<sup>2\*</sup> and Alison H. Holmes<sup>2</sup>

<sup>1</sup>Medical Education Centre, North Devon District Hospital, Raleigh Park, Barnstaple, Devon EX11 4JB, UK; <sup>2</sup>Centre for Infection Prevention and Control, London W12 0NN, UK

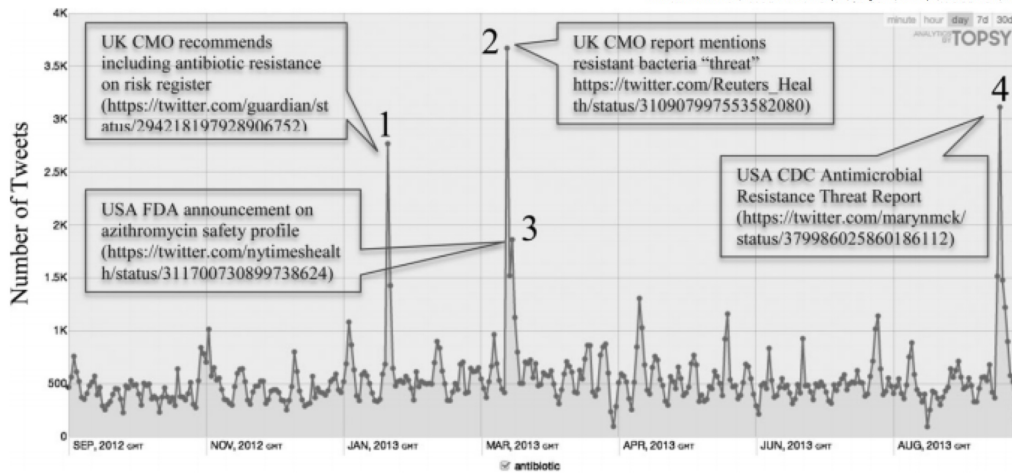


Figure 2. Daily frequency of public Tweets containing the term 'antibiotic' over the study period (24 September 2012 to 23 September 2013) with content of peak antibiotic Tweets. Reproduced with permission from Topsy.

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Social Media Impact on Infection Prevention and Control  
Prof. Didier Pittet, University of Geneva Hospitals, Switzerland  
A Webber Training Teleclass

Use in Public Health – *assess awareness*



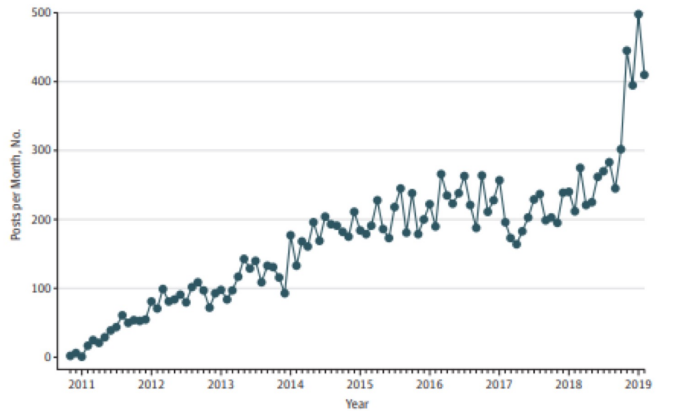
RESEARCH LETTER

Requests for Diagnoses of Sexually Transmitted Diseases on a Social Media Platform

Although many studies document the use of social media for sharing and requesting information on specific health conditions,<sup>1,2</sup> whether individuals obtain diagnoses on social media platforms has not been investigated.<sup>3,4</sup> The occurrence of requests for a diagnosis on social media (*crowd-diagnosis*) and determination as to whether the requested diagnosis was for a second opinion after seeing a health care professional were evaluated in a case study.

Alicia L. Nobles, PhD, MS  
Eric C. Leas, PhD, MPH  
Benjamin M. Althouse, PhD, ScM  
Mark Dredze, PhD  
Christopher A. Longhurst, MD, MS  
Davey M. Smith, MD, MAS  
John W. Ayers, PhD, MA

Figure. Posting Behavior on Reddit r/STD



JAMA November 5, 2019 Volume 322, Number 17

Use in Public Health – *Outbreaks*

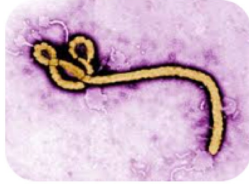


And so many other utilisations...

- Detect outbreak
- Track disease pandemic
- Recruit patients in clinical trials
- Twitter Chat for communicating with a wider audience
- Scientific gathering around Journal Clubs via twitter...



Use in Public Health – *Outbreaks*



>10 millions Tweets

from Sept to Oct 2014 from 170 countries

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What is a Social Media?

*Definition & existing channels*




Youtube

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**Social Media Impact on Infection Prevention and Control**  
**Prof. Didier Pittet, University of Geneva Hospitals, Switzerland**  
**A Webber Training Teleclass**


## Hand Hygiene Education via **YouTube**




Contents lists available at ScienceDirect

**American Journal of Infection Control**

Journal homepage: [www.ajicjournal.org](http://www.ajicjournal.org)





Major Article


Exploring the use of entertainment-education YouTube videos focused on infection prevention and control

Kathryn Lim MPH, MPH <sup>a</sup>, Claire Kilpatrick MSc <sup>b</sup>, Julie Storr MBA <sup>b</sup>, Holly Seale PhD, MPH <sup>a\*</sup>

**Table 2**  
 Summary of overall content evaluation results grouped by categories of educationally useful (n= 39) or noneducationally useful (n= 31)

Content evaluation variable	Educationally useful (n= 39)	Not educationally useful (n= 31)	P value
Total attractiveness score (out of 3)	2.8 ± 0.5	2.5 ± 0.7	.11
Total comprehension score (out of 5)	3.5 ± 1.5	2.2 ± 1.7	.00
Total persuasiveness score (out of 3)	1.3 ± 0.9	0.7 ± 0.8	.01

NOTE. Values are mean ± SD or as otherwise indicated.



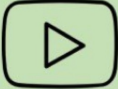

[https://www.youtube.com/watch?time\\_continue=38&v=M8AKiB0&feature=emb\\_logo](https://www.youtube.com/watch?time_continue=38&v=M8AKiB0&feature=emb_logo)

Lim K, Kilpatrick C, Storr J, Seale H. AJIC 2018 Nov 1;46(11):1218-23.


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## YouTube Videos as Educational Tools to Promote Hand Hygiene: A Content Analysis

**STUDY DATA**

400 YouTube videos  
"hand hygiene"  
"hand hygiene education"




70 analyzed using  
structured tool

**RESULTS**

% of videos scored as educationally useful:


**55.7%**

N = 39



**44.3%**


N = 31



**CONCLUSIONS**


Highest Scoring Videos

**Attractive  
Comprehensive  
Persuasive**




Recommendation: Guidelines should be used during video development

Lim, K., Kilpatrick C., Storr J., Seale H. *AJIC*  
 @hollyseale@julesstorr@claireek  
 DOI: 10.1016/j.ajic.2018.05.002

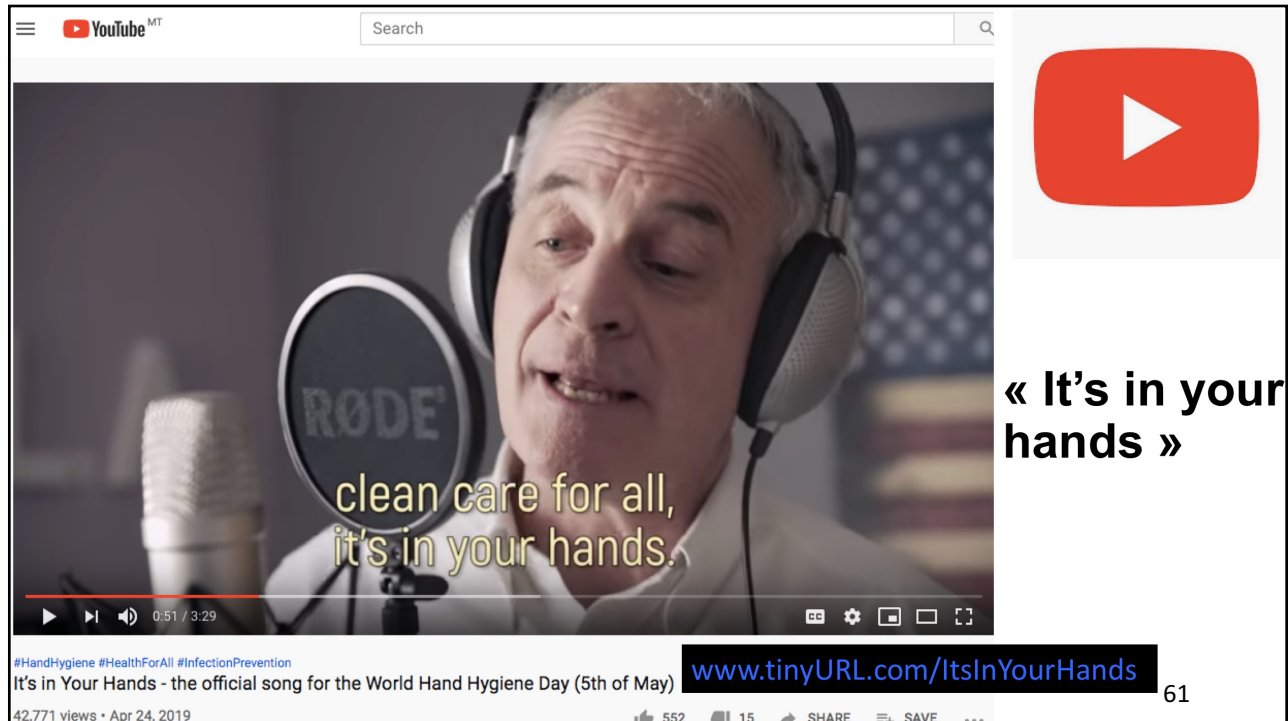


**APIC** *Spreading knowledge. Preventing infection.*  
 Association for Professionals in Infection Control and Epidemiology

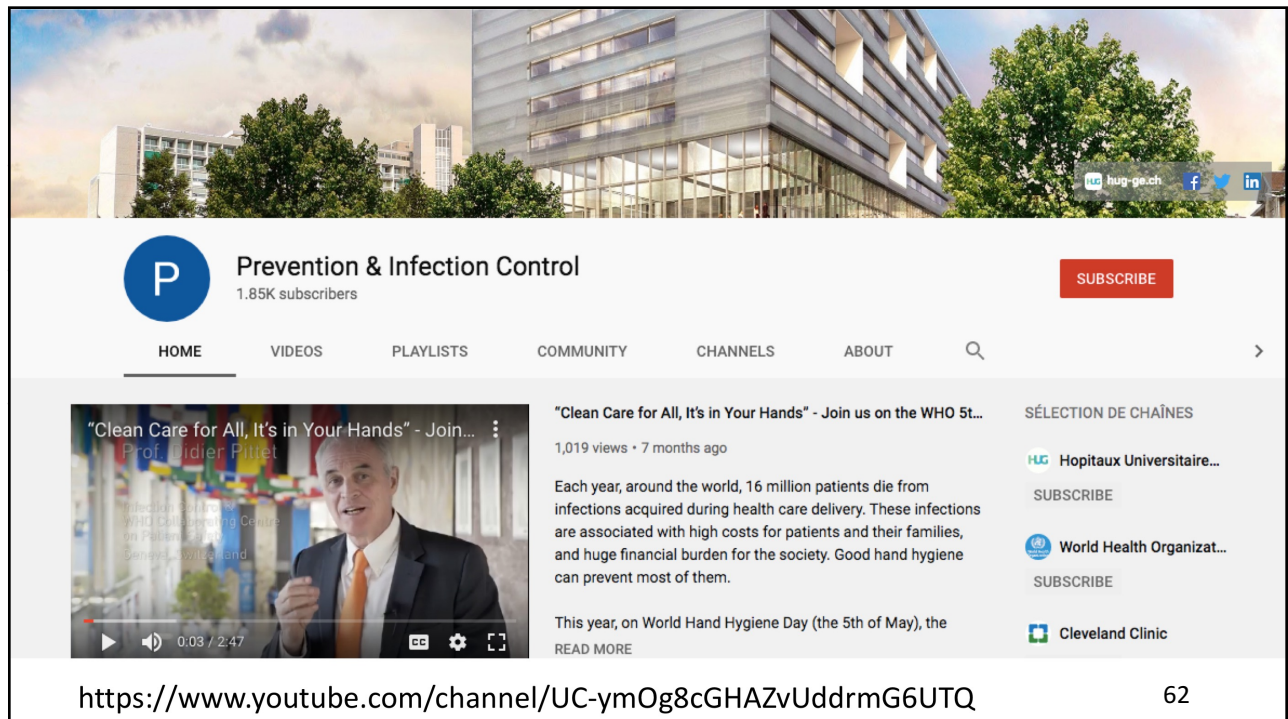


American Journal of Infection Control 60

**Social Media Impact on Infection Prevention and Control**  
**Prof. Didier Pittet, University of Geneva Hospitals, Switzerland**  
**A Webber Training Teleclass**



The image shows a YouTube video player interface. The video title is "It's in Your Hands - the official song for the World Hand Hygiene Day (5th of May)". The video content shows Prof. Didier Pittet wearing headphones and speaking into a RØDE microphone. The lyrics "clean care for all, it's in your hands." are displayed on the screen. The video has 42,771 views and was uploaded on April 24, 2019. A URL [www.tinyURL.com/ItsInYourHands](http://www.tinyURL.com/ItsInYourHands) is visible in the bottom right corner of the video player area. The number 61 is located at the bottom right of the slide.



The image shows the YouTube channel page for "Prevention & Infection Control", which has 1.85K subscribers. The channel features a video titled "Clean Care for All, It's in Your Hands" - Join us on the WHO 5... with 1,019 views, posted 7 months ago. The video description states: "Each year, around the world, 16 million patients die from infections acquired during health care delivery. These infections are associated with high costs for patients and their families, and huge financial burden for the society. Good hand hygiene can prevent most of them." The video is currently at 0:03 of a 2:47 duration. On the right side of the channel page, there is a "SÉLECTION DE CHAÎNES" section with three channels listed: "Hopitaux Universitaire...", "World Health Organizat...", and "Cleveland Clinic", each with a "SUBSCRIBE" button. The URL <https://www.youtube.com/channel/UC-ymOg8cGHAZvUddrmG6UTQ> is displayed at the bottom left, and the number 62 is at the bottom right of the slide.

### Use in Public Health – *Fake news*

Why bother talking about this ?

In the scientific community, we have a tendency to ignore misinformation, thinking that it will go away if we do not give it attention

But in the age of fake news, this just adds fuel to the fire

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### Use in Public Health – *Fake news*

## Getting the terms right

#### **Fake News:**

deliberate misinformation or manipulation of data

#### **Bad buzz:**

misrepresentation of the nature or conclusions in otherwise sound information or studies

**Misinformation:** could be accidental

**Disinformation:** on purpose

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### Use in Public Health – *Fake news*

## How Fake News & Bad Buzz affects IPC

- within the field of IPC we often work with low category of evidence (case reports and expert opinion)
- some products and practices originate from the public sphere
- nexus and sharing of information between IPC and the public



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### Use in Public Health – *Fake news*

## Types of news outlets and platforms

- Open access
- Online media
- **Social media**
- Viral spreading of sensationalism and fear (clickbait)
- Real-life consequences

*Misinterpreting the quality of a study or the real-life relevance of its conclusions can lead to wasted resources, bad policy making decisions, and increased morbidity and mortality*

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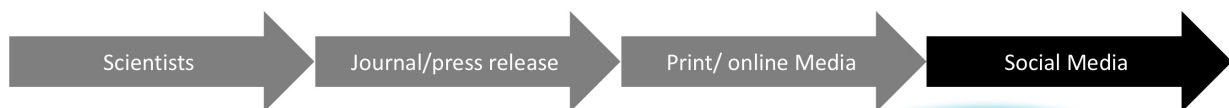
## Use in Public Health – *Fake news*

### Why Bad Buzz is a growing concern

- Pseudo-science and misinformation have always been an issue
- But rapid proliferation of publication platforms make it easier for poor designed studies to get public attention (predatory journals)
- Normally, in the context of a large number of well-performed studies, one would not expect bad articles to matter or to exert as much influence as they do

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## Use in Public Health – *Fake news*



Information / misinformation spread

- In interest groups
- Youtube channels
- Trending on Facebook or twitter
- Often a substrate for misinformation to spread rapidly



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## Misleading science and bad press concerning alcohol-based handrubs



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### Use in Public Health – *Fake news*

## Case Studies in infection prevention & IPC

- Misleading science and bad press concerning alcohol-based handrubs
  - Bisphenol A
  - Triclosan/triclocarban
  - *E. faecium* tolerance to alcohol
  - Lack of efficacy on “flu”



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Use in Public Health – Fake news – Case report 1: the « bisphenol » story

# 1. Handrub and Bisphenol A: a prime example of a misleading study



- HCW applies a large amount of ABHR containing skin penetration enhancers (such as propylene glycol)
- HCW touches paper containing BPA for an artificially prolonged time (4 min)
- HCW then eats ten French fries after holding each fry for 10 seconds
- Absorption of BPA in blood is measured



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## Effect of the study



- Drastic reduction in ABHR use by HCW (30% in France)
- Luckily did not spread internationally
- Possible impact on transmission of healthcare-associated infections



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*Fake news – Case report 2: the « triclosan/triclocarban » story*

## 2. Triclosan & Triclocarban

- Media falsely linking triclosan and triclocarban to all ABHRs
  - Some recommending to stop using ABHR
- The very large majority of ABHRs does not contain these chemicals
- Florence Statement might have raised awareness and concern
  - Subsequently misplaced in ABHR
- *To note : Although triclosan was banned from soaps in the USA, it is still present in some toothpaste. No articles published on this topic using this information to advocate stopping the use of toothpaste in general.*

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## Use in Public Health – Fake news – Case report 3: the VRE story

SCIENCE TRANSLATIONAL MEDICINE | REPORT

INFECTIOUS DISEASE

### Increasing tolerance of hospital *Enterococcus faecium* to handwash alcohols

Sacha J. Pidot<sup>1\*</sup>, Wei Gao<sup>1\*</sup>, Andrew H. Buultjens<sup>1\*</sup>, Ian R. Monk<sup>1</sup>, Romain Guerillot<sup>1</sup>, Glen P. Carter<sup>1</sup>, Jean Y. H. Lee<sup>1</sup>, Margaret M. C. Lam<sup>1</sup>, M. Lindsay Grayson<sup>2,3,4</sup>, Susan A. Ballard<sup>5</sup>, Andrew A. Mahony<sup>2</sup>, Elizabeth A. Grabsch<sup>2</sup>, Despina Kotsanas<sup>6</sup>, Tony M. Korman<sup>6</sup>, Geoffrey W. Coombs<sup>7,8</sup>, J. Owen Robinson<sup>7,8</sup>, Anders Gonçalves da Silva<sup>5</sup>, Torsten Seemann<sup>9</sup>, Benjamin P. Howden<sup>1,2,3,5</sup>, Paul D. R. Johnson<sup>1,2,3†</sup>, Timothy P. Stinear<sup>1†</sup>

Impact factor = 16.796  
(Journal of Citation Report, 2016)

The screenshot shows the article page on Science Translational Medicine. At the top, there is a navigation bar with 'Home', 'News', 'Journals', 'Topics', and 'Care'. Below this is a banner image with the text 'We can. We will. We must.' and a 'Find out more' button. The article title is 'Increasing tolerance of hospital *Enterococcus faecium* to handwash alcohols'. Below the title, the authors are listed: Sacha J. Pidot<sup>1\*</sup>, Wei Gao<sup>1\*</sup>, Andrew H. Buultjens<sup>1\*</sup>, Ian R. Monk<sup>1</sup>, Romain Guerillot<sup>1</sup>, Glen P. Carter<sup>1</sup>, Jean Y. H. Lee<sup>1</sup>, Margaret M. C. Lam<sup>1</sup>, M. Lindsay Grayson<sup>2,3,4</sup>, Susan A. Ballard<sup>5</sup>, Andrew A. Mahony<sup>2</sup>, Elizabeth A. Grabsch<sup>2</sup>, Despina Kotsanas<sup>6</sup>, Tony M. Korman<sup>6</sup>, Geoffrey W. Coombs<sup>7,8</sup>, J. Owen Robinson<sup>7,8</sup>, Anders Gonçalves da Silva<sup>5</sup>, Torsten Seemann<sup>9</sup>, Benjamin P. Howden<sup>1,2,3,5</sup>, Paul D. R. Johnson<sup>1,2,3†</sup>, Timothy P. Stinear<sup>1†</sup>. The page number '74' is visible in the bottom right corner.



Use in Public Health – Fake news – Case report 3: the VRE story

### 3. Increasing tolerance of VRE to alcohol

- 2018 Australian study Pidot et al. *in Science and Translational Medicine*
- Authors compared older and newer *Enterococcus faecium* isolates from 1997-2015, and the tolerance of these strains to 23% alcohol
- When using a 70% solution, no difference between resistant and sensitive isolates was observed (ABHRs contain 60-90% alcohol)
  - Tolerant *E. faecium* were killed by 70% alcohol
- Wiped mouse cage with a 70% isopropanol wipe
- *CCL: Because ABHRs have been used increasingly over time and while proportion of E. faecium tolerance to 23% alcohol increased from 1997-2015, ABHRs were pointed as causal factor*

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Use in Public Health – Fake news – Case report 3: the VRE story

In Summary: Research is important and well-conducted

**BUT**

- Title of paper referring to “handwash alcohols”
- Press release “alcohol loses its luster”
- Conflating of hypotheses concerning the role of exposure to alcohol in the environment vs. handrubbing

Science Translational Medicine Home News Journals Topics Careers

We can. We will. We must.

Find out more

ThermoFisher SCIENTIFIC

SHARE REPORT INFECTIOUS DISEASE

### Increasing tolerance of hospital *Enterococcus faecium* to handwash alcohols

Sacha J. Pidot<sup>1</sup>, Wei Gao<sup>2</sup>, Andrew H. Baultgens<sup>1</sup>, Ian R. Monk<sup>1</sup>, Romain Guerillot<sup>1</sup>, Glen P. Carter<sup>1</sup>, Jean Y. H. Lee<sup>1</sup>, Marg...

See all authors and affiliations

Science Translational Medicine 01 Aug 2018  
Vol. 10, Issue 452, eard115  
DOI: 10.1126/scitranslmed.aar6115

Article Figures & Data Info & Metrics eLetters PDF

#### Alcohol loses its luster

Alcohol-based disinfectants are a key way to control hospital infections worldwide. Pidot et al. now show that the multidrug-resistant bacterium *Enterococcus faecium* has become increasingly tolerant to the alcohols in widely used hospital disinfectants such as hand rub solutions. These findings may help explain the recent increase in this pathogen in hospital settings. A global response to *E. faecium* will need to include consideration of its adaptive responses not only to antibiotics but also to alcohols and the other active agents in disinfectant solutions that have become so critical for effective infection control.

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**Social Media Impact on Infection Prevention and Control**  
**Prof. Didier Pittet, University of Geneva Hospitals, Switzerland**  
**A Webber Training Teleclass**

**Use in Public Health – Fake news –**  
**Case report 3: responding to the VRE story**

Correspondence

***Enterococcus faecium***  
**tolerance to isopropanol:**  
**from good science to**  
**misinformation**

Following the publication by Sacha Pidot and colleagues,<sup>1</sup> alarmist articles appeared in the lay press, including *The Guardian*, *Reuters*, *NBC*, and *The Times*.<sup>2,3</sup> These stories have (probably inadvertently) mischaracterised the study analysis and implied that alcohol-based handrub is becoming ineffective. In reality, alcohol-based handrub is the most effective agent available for

handrub), regardless of those strains' tolerance to alcohol.<sup>1</sup> Hospitals must select high quality, validated alcohol-based handrub formulations and encourage high rates of hand hygiene compliance among health-care workers to lower rates of health-care-associated infections and the spread of antimicrobial resistance.<sup>4</sup>

The study also showed that some alcohol-tolerant vancomycin-resistant enterococci strains spread more quickly to mice than non-tolerant strains after mouse cages were wiped down with an alcohol-impregnated wipe. Hospital environmental disinfection for VRE is a comprehensive protocol, not a

medicines list and saves millions of lives worldwide every year.<sup>6</sup>

Misinterpreting the relevance of laboratory study results can lead to major negative consequences. The road between a bit of sensationalism and full distortion is as dangerous as it is short.

We declare no competing interests.

*\*Didier Pittet, Alexandra Peters, Ermira Tartari*  
**didier.pittet@hcuge.ch**

Infection Control Programme, University of Geneva Hospitals and Faculty of Medicine, Geneva, Switzerland (DP, AP, ET); and Department of Nursing, Faculty of Health Sciences, University of Malta, Msida, Malta (ET)



*Lancet Infect Dis* 2018

Published Online  
 September 4, 2018  
[http://dx.doi.org/10.1016/S1473-3099\(18\)30542-5](http://dx.doi.org/10.1016/S1473-3099(18)30542-5)

**Published on line:**

**4 Sept 2018**

**Use in Public Health –**  
**Fake news**  
**Case report 3: responding to**  
**the VRE story**

**Paper published:**  
**1 August 2018**

**Our letter to the editor**  
**(first submitted 28 Sept 2018)**  
**published:**  
**27 August 2019**

The screenshot shows the article page for "Increasing tolerance of hospital *Enterococcus faecium* to handwash alcohols" in *Science Translational Medicine*. The article is dated 01 Aug 2018. The authors listed are Sacha J. Pidot, Wei Gao, Andrew H. Buultjens, Ian R. Monk, Romain Guerillot, Glen P. Carter, Jean Y. H. Lee, and Margarita. The article is categorized under Infectious Disease. There are navigation tabs for Article, Figures & Data, Info & Metrics, eLetters, and PDF. Below the article title, there is a section for eLetters with a "Submit a Response to This Article" link. A response from Romain Martischang, MD-PhD candidate at Geneva University Hospital, dated 27 August 2019, is visible. The response discusses the article's findings and mentions the authors: Romain Martischang, Alexandra Peters, and Didier Pittet. The page number 80 is visible at the bottom right.



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**Use in Public Health – Fake news – Case report 4: the « flu » story**

Misleading science  
and bad press concerning:

“ Effect of ABHR  
on Influenza A virus:  
not appropriately killed  
while in mucus ! “

*...while WHO and CDC  
Guidelines clearly insist to  
wash hands while soiled !*



RESEARCH ARTICLE  
Applied and Environmental Science

**Situations Leading to Reduced Effectiveness of Current Hand Hygiene against Infectious Mucus from Influenza Virus-Infected Patients**

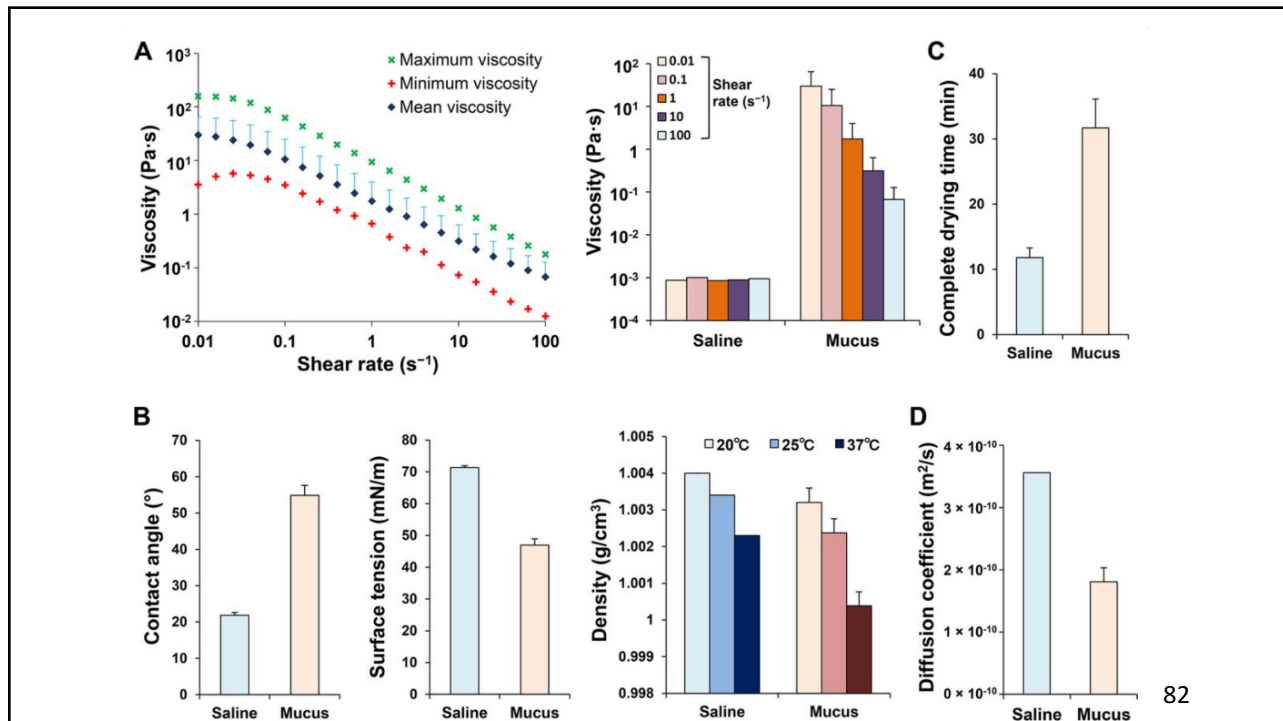
Ryohel Hirose,<sup>a,b</sup> Takaaki Nakaya,<sup>b</sup> Yuji Naito,<sup>a</sup> Tomo Daidoji,<sup>b</sup> Risa Bandou,<sup>b,c</sup> Ken Inoue,<sup>a</sup> Osamu Dohi,<sup>a</sup> Naohisa Yoshida,<sup>a</sup> Hideyuki Konishi,<sup>a</sup> Yoshito Itoh<sup>a</sup>

<sup>a</sup>Department of Molecular Gastroenterology and Hepatology, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, Kyoto, Japan  
<sup>b</sup>Department of Infectious Diseases, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, Kyoto, Japan  
<sup>c</sup>Department of Forensic Medicine, Graduate School of Medical Science, Kyoto Prefectural University of Medicine, Kyoto, Japan

**ABSTRACT** Both antiseptic hand rubbing (AHR) using ethanol-based disinfectants (EBDs) and antiseptic hand washing (AHW) are important means of infection control to prevent seasonal influenza A virus (IAV) outbreaks. However, previous reports suggest a reduced efficacy of ethanol disinfection against pathogens in mucus. We aimed to elucidate the situations and mechanisms underlying the reduced efficacy of EBDs against IAV in infectious mucus. We evaluated IAV inactivation and ethanol concentration change using IAV-infected patients' mucus (sputum). Additionally, AHR and AHW effectiveness against infectious mucus adhering to the hands and fingers was evaluated in 10 volunteers. Our clinical study showed that EBD effectiveness against IAV in mucus was extremely reduced compared to IAV in saline. IAV in mucus remained active despite 120 s of AHR; however, IAV in saline was completely inactivated within 30 s. Due to the low rate of diffusion/convection because of the physical properties of mucus as a hydrogel, the time required for the ethanol concentration to reach an IAV inactivation level and thus for EBDs to completely inactivate IAV was approximately eight times longer in mucus than in saline. On the other

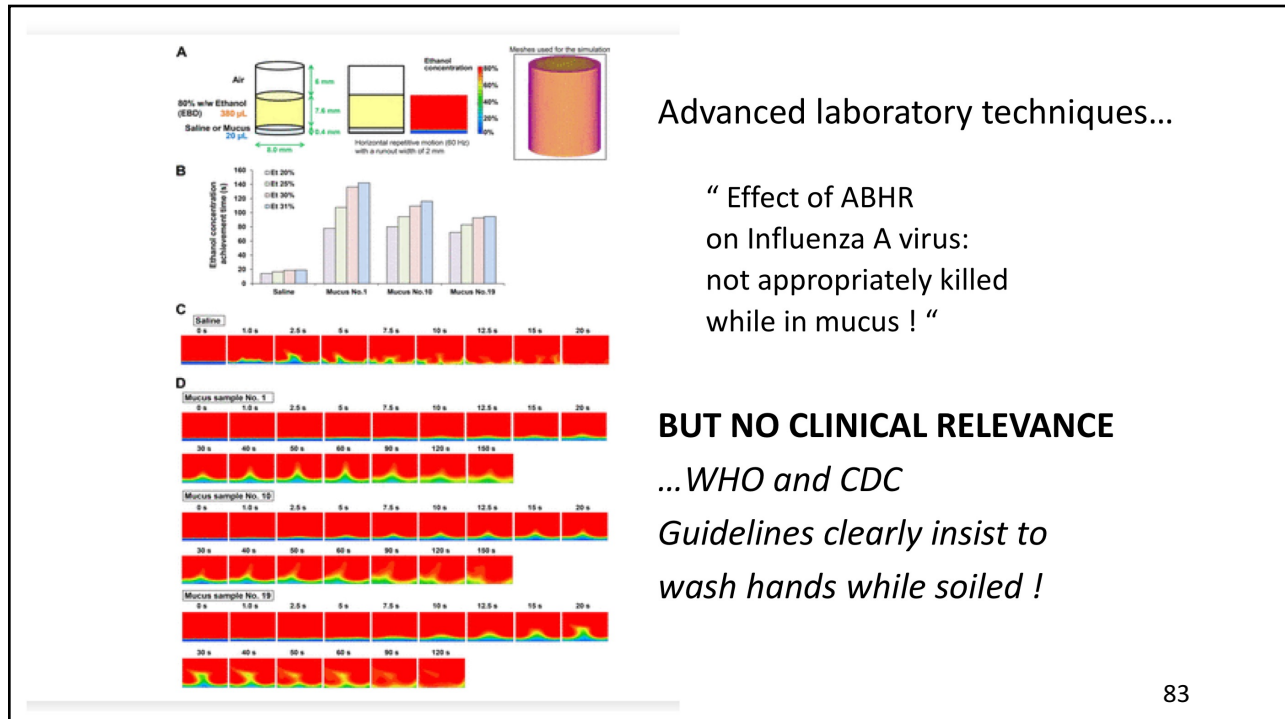
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Advanced laboratory techniques...

“ Effect of ABHR on Influenza A virus: not appropriately killed while in mucus ! “

**BUT NO CLINICAL RELEVANCE**

*...WHO and CDC*

*Guidelines clearly insist to wash hands while soiled !*

**Within 1 Week....**

Daily **Mail**.com

**Hand sanitizer will NOT protect you from flu - but washing your hands will, scientists discover**

- Doctors and patients alike use antiseptic, alcohol-based hand sanitizer to try to neutralize viruses they may have come into contact with, like the flu
- But new Japanese research suggests it doesn't work
- Flu virus survived two minutes of sani slathering
- Volunteers had to spend four minutes rubbing on the antiseptic to deactivate flu in tiny droplets of mucus
- Viscose spit slows down alcohol, but hand-washing works in 30 seconds

**NEWS**  
MEDICAL  
LIFE SCIENCES

**Hand washing encouraged as hand sanitizer shown to be ineffective at killing the flu**

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**Global NEWS**

**CIDRAP** Center for Infectious Disease Research and Policy

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**Case report 4: responding to the « flu » story**

ARTICLE IN PRESS

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Opinion

## Alcohol-based hand rub and influenza A: the danger of publishing a flawed study with no clinical relevance

A. Peters<sup>a</sup>, E. Frat<sup>b</sup>, A. Iten<sup>a</sup>, J. Sauser<sup>a</sup>, M. Schibler<sup>c</sup>, D. Pittet<sup>a,\*</sup>

<sup>a</sup> Infection Control Program and WHO Collaborating Centre on Patient Safety, The University of Geneva Hospitals and Faculty of Medicine, Geneva, Switzerland  
<sup>b</sup> Intermountain LDS Hospital, Intermountain Healthcare, Salt Lake City, UT, USA  
<sup>c</sup> Infectious Diseases Division and National Reference Centers for Influenza and Emerging Viruses, The University of Geneva Hospitals and Faculty of Medicine, Geneva, Switzerland

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ARTICLE INFO

current hand hygiene against infectious mucus from influenza virus-infected patients with interest [1–4]. Regrettably, it is

**Published on line:**  
**3 October 2019**

Use in Public Health – Fake news –

Case report 4: responding to the « flu » story



LETTER TO THE EDITOR  
Applied and Environmental Science

### Influenza and Alcohol-Based Handrub: the Danger of Ignoring Clinical Relevance

Alexandra Peters,<sup>a</sup> Didier Pittet<sup>a</sup>

<sup>a</sup>Infection Control Program and WHO Collaborating Center on Patient Safety, University of Geneva Hospitals and Faculty of Medicine, Geneva, Switzerland

**KEYWORDS** ABHR, IPC, alcohol-based handrub, hand hygiene

We read the article "Situations leading to reduced hand hygiene against infectious mucus from influenza A virus (1)" with interest. Unfortunately, although the physical properties of mucus are well performed, and there are major flaws in its design. The hygiene measures are ineffective in preventing what is inaccurate (and not a term used in infection prevention) flu season rapidly approaching and the article being mainstream news outlets, such misinformation may harm care workers' (HCWs) compliance with hand hygiene safety.

The authors show a lack of understanding of clinical recommendations, and the current literature. Since the World Health Organization (WHO) published their draft guidelines recommending that HCWs use gloves if they anticipate contact with fluids (2). After the gloves are removed, there should be a hand hygiene step at which point they are recommended to perform handrub (ABHR). If for some reason, the HCW does not perform handrub on their unprotected hands, both the CDC, AT

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**4 December 2019**

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## Reply to Peters and Pittet, "Influenza and Alcohol-Based Handrub: the Danger of Ignoring Clinical Relevance," and Boyce, "Alcohol-Based Handrubs and Influenza A"

Ryohei Hirose, Takaaki Nakaya

DOI: 10.1128/mSphere.00745-19

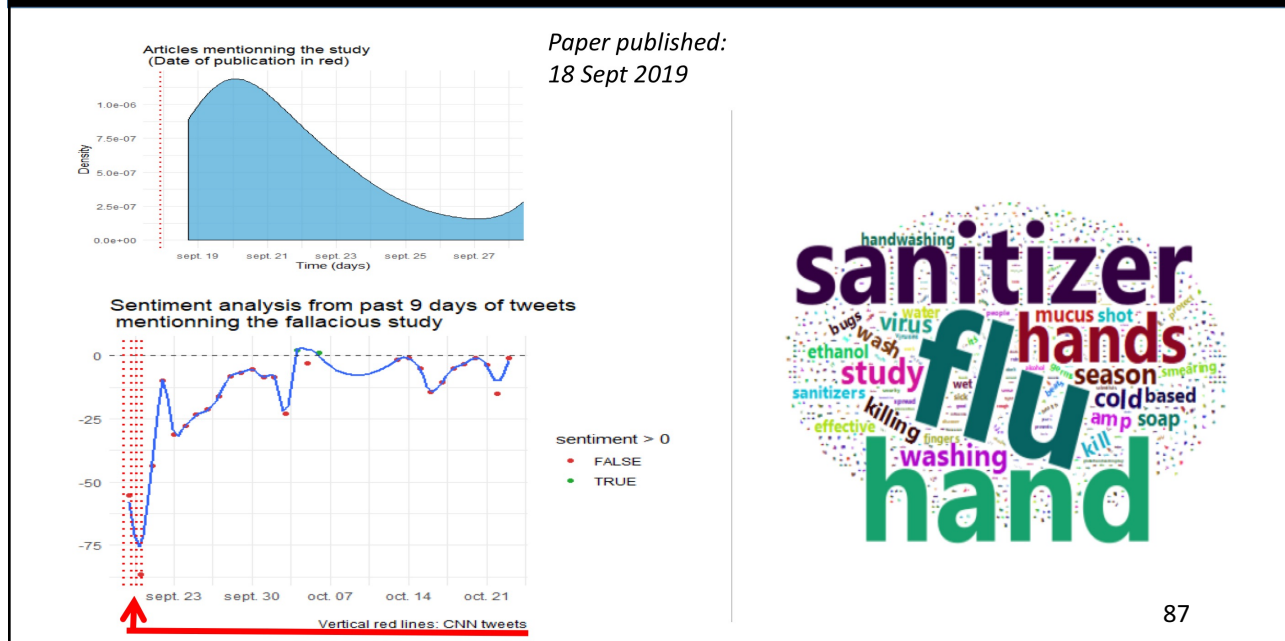
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Info & Metrics
PDF

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2. World Health Organization. WHO guidelines on hand hygiene in health care : first global patient safety challenge : clean care is safer care. Geneva, Switzerland: World Health Organization, Patient Safety; 2009.

Lancet Infect Dis. 2013 Oct;13(10):843-51. doi: 10.1016/S1473-3099(13)70163-4. Epub 2013 Aug 23.

**Global implementation of WHO's multimodal strategy for improvement of hand hygiene: a quasi-experimental study.**

Allegranzi B<sup>1</sup>, Gayet-Ageron A, Damani N, Bengali L, McLaws ML, Moro ML, Memish Z, Urroz O, Riche H, Storr J, Donaldson L, Pittet D.

J Clin Microbiol. 2010 Mar;74(3):204-11. doi: 10.1093/jcm/74.3.204. Epub 2010 Jan 12.

**Impact of alcohol hand-rub use on methicillin-resistant *Staphylococcus aureus*: an analysis of the literature.**

Stokil S<sup>1</sup>, Sattimer P, Meyer S.

The NEW ENGLAND JOURNAL OF MEDICINE

VIDEOS IN CLINICAL MEDICINE

**Hand Hygiene**

Yves Longtin, M.D., Hugo Sax, M.D., Benedetta Allegranzi, M.D., Franck Schneider, and Didier Pittet, M.D.

Epub ahead of print Aug 18, 2014. doi: 10.1056/NEJM.14.0818.01

**Back to the future: rising to the Sennelweis challenge in hand hygiene.**

Stewardson A<sup>1</sup>, Allegranzi B, Sax H, Kibuka C, Pittet D.

**Bad buzz have an impact, despite decades of robust research**

J Clin Infect Dis. 2009 Dec;75(12):2015-20. doi: 10.1093/cid/cir101. Epub 2009 Aug 31.

**Role of hand hygiene in healthcare-associated infection prevention.**

Allegranzi B<sup>1</sup>, Pittet D.

Lancet Infect Dis. 2006 Oct;6(10):641-52.

**Evidence-based model for hand transmission during patient care and the role of improved practices.**

Pittet D<sup>1</sup>, Allegranzi B, Sax H, Dharan S, Pessoa-Silva CL, Donaldson L, Boyce JM: WHO Global Patient Safety Challenge. World Alliance for Patient Safety.

Lancet. 2000 Oct 14;356(9238):1307-12.

**Effectiveness of a hospital-wide programme to improve compliance with hand hygiene. Infection Control Programme.**

Pittet D<sup>1</sup>, Hugonnet S, Harbarth S, Mourouga P, Sauvan V, Touveneau S, Penneker TV.

Remerciements: Dr I. Schwebke, et al. Epid Bull 2018;38:415 – 418

REVIEW | VOLUME 1, SPECIAL ISSUE, 6-26, APRIL 01, 2001

**Hand hygiene and patient care: pursuing the Sennelweis legacy**

Professor Didier Pittet, MD, FRCPC - John M. Boyce, MD

Published: April, 2001 - DOI: [https://doi.org/10.1016/S1473-3099\(01\)70256-6](https://doi.org/10.1016/S1473-3099(01)70256-6)

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## Use in Public Health – Fake news – How to fight ?

### Self- policing vs. legislation

- Code of practice against disinformation
  - Signatories incl. facebook, Twitter, Google (not Youtube)



### Youtube

- Very lax, bias toward “keeping up content”<sup>(1)</sup>
- Has no clear Definition of misinformation<sup>(2)</sup>
- When content aims to “disinform or misinform users in harmful ways”, they stop recommending video and take off monetized advertising<sup>(1,2)</sup>

Ex. Anti vaxx video channels not receiving monetized advertising, as of 2019<sup>(3)</sup>



#### YouTube vows to recommend fewer conspiracy theory videos

Site's move comes amid continuing pressure over its role as a platform for misinformation and extremism



▲ YouTube did not provide a clear definition of what it considers to be harmful misinformation. Photograph: Dado Ruvic/Reuters

(1) <https://www.euractiv.com/section/digital/news/in-the-fight-against-fake-news-youtube-has-a-bias-toward-keeping-content-up/>  
(2) <https://www.theguardian.com/technology/2019/jan/25/youtube-conspiracy-theory-videos-recommendations>  
(3) <https://www.bbc.com/news/technology-47357252>

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## Facebook

- Groups also allowed insulated communities to spread fake news and hate speech to millions of users (1)
- Uses «proactive detection technology» to flag inappropriate content (as well as relying on reporting from group members) (2)

(1) <https://www.theguardian.com/world/2019/may/22/far-right-facebook-groups-spreading-hate-to-millions-in-europe>  
(2) <https://www.theguardian.com/technology/2019/aug/14/facebook-private-groups-rules-extremist-fake-news>

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**Aborted Fetal Tissue in Vaccines**

Hep A/Hep B (Twinrix)	formalin, yeast protein, aluminum phosphate, aluminum hydroxide, amino acids, phosphate buffer, polysorbate 20, neomycin sulfate, <b>human diploid cells</b>
Hep A (Havrix)	aluminum hydroxide, amino acid supplement, polysorbate 20, formalin, neomycin sulfate, <b>MRC-5 cellular proteins</b>
MMR (MMR-II)	Medium 199, Minimum Essential Medium, phosphate, <b>recombinant human albumin</b> , neomycin, sorbitol, hydrolyzed gelatin, chick embryo cell culture, <b>WI-38 human diploid lung fibroblasts</b> , sucrose, phosphate, glutamate, gelatin, monosodium L-glutamate, sodium phosphate dibasic, potassium phosphate monobasic, potassium phosphate dibasic

**Activity**

54 New posts today  
1,078 in the last 30 days

39,179 Members  
+212 in the last 30 days

Created about 3 years ago by Branden Simoens

**Group Rules from the Admins**

- 1 Welcome to Vaccine Education Network: Natural Health Anti Vaxx Community  
Our moderators work around the clock to make this a safe place to exchange information and share our stories about the dangers of vaccines. We are a natural health and vaccine group so please keep everything on topic. Please do not block our moderators, you will be found and removed immediately.
- 2 **No recommending chemical medications EVER, NO EXCEPTION.** This is a NATURAL HEALTH group, natural solutions exist.

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When searching for anti vaxx pages, FB does a good job on interspersing good information

But this doesn't address the issue of facebook groups



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**Patients Included**

**What role can the public play towards infection prevention and control?**

 #PatientIncluded #PatientEngagement



## Patient Inclusion

- Promoting hand hygiene via social media <sup>1</sup>
- Patient engagement with SSI prevention<sup>2</sup>
- Patients awareness on antibiotic use <sup>3,4</sup>
- Influenza like illness, infection prevention and vaccination <sup>5</sup>
- Pandemic, surveillance<sup>6</sup>



1. Pan SC *et al. ARIC*. 2015 Dec;4(1):P165.
2. Rochon M *et al. J Infect Prevent*. 2018; Nov;19(6):270-6.
3. Dyar *et al. J Antimicrob Chemother* 2014;69:2568-72.
4. Raksha K *et al. Apollo Medicine*. 2019 Jul 1;16(3):137.
5. Odone *et al. Hum Vaccin Immunother* 2015;11:72-82.
6. Charles-Smith *et al. PLoS One* 2015;10:e0139701.

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Patient Inclusion



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Patient Inclusion and Family/Relatives Participation



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Place des Nations , Geneva , WHD 2019 - United Nations, Geneva



Hand hygiene moment at first solidarity chain for « Health for All » on World Health Day – 7 April 2019

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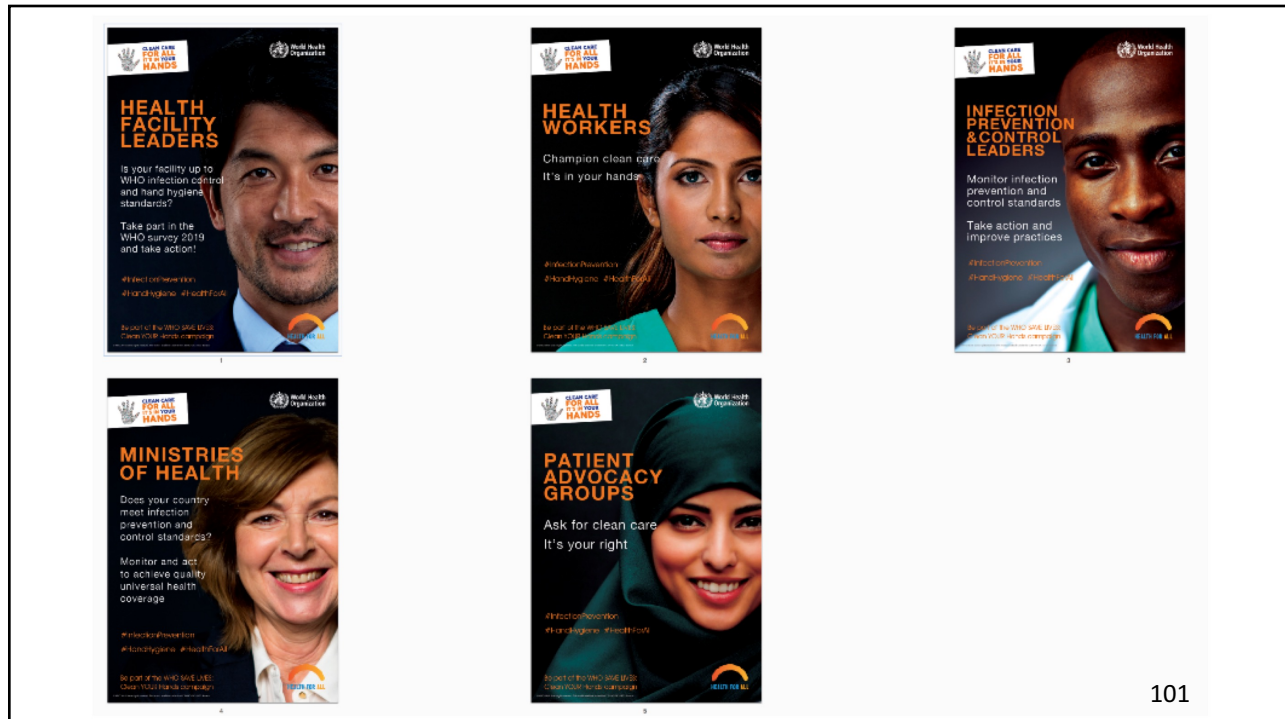
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Hand hygiene moment at first solidarity chain for « **Health for All** » on World Health Day – 7 April 2019

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Public knowledge and perception of antimicrobial resistance in Japan

- Nationwide online cross-sectional survey based on Eurobarometer Survey (n=3390)
  - Adults 20-69 years
- 46% have taken antibiotics
  - 46% for “common cold”
- Only 22% knew that antibiotics were ineffective against viruses (EU 43%)
- Only 4 out of 10 had heard about AMR

Kamata et al. PLoS One. 2018 Nov 5;13(11):e0207017.



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The image shows two Twitter profiles side-by-side. The left profile is for 'Doctors 2.0 & You' (@doctors20), which has 7,688 tweets and 6180 followers. The right profile is for 'HealthSocMed #hcsmsa' (@hcsmsa), which has 12,300 tweets and 3,349 followers. Both profiles feature banners with digital health themes and logos. The HealthSocMed profile bio describes it as a geographic e-Health community in South Africa.

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A collage of various social media icons including Twitter, Facebook, LinkedIn, Instagram, and others. In the center, there is a white text box with the text 'VI. Be aware of...'. The icons are arranged in a circular pattern around the text.

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**BE aware of:**

**Preserve your reputation as a doctor**

- Consider everything published as potentially public
- Be carefull for giving medical advice in a public forum
- Don't accept Facebook friend requests from patients
- Try and avoid posting online when you are emotional, exhausted, or under the influence
- Be aware of the risk of blurring the boundaries and affecting the nature of the doctor-patient relationship
- Try to keep a clear line between professional and personal relationships on social media

**Keep it confidential**

- All online discussions around patient care must be anonymized
- Never take clinical images with your smartphone—unless you have a specific, secure, employer approved application



*BMJ 18 November 2017*

CID, 2015 doi: 10.1093/cid/civ071  
General Medical Council, Doctor's use of social Media, 25.03.2013

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**BE aware of:**

**Very short message → Misinformation**

- check reputation of individuals, credibility of tweets
- If interested, before sharing, read the original article

**Be aware of a selection bias**

- Twitter users are not representative of the general population
  - Young educated person
- Twitter posts are not representative of the overall scientific information
  - Hot trending topics



*BMJ 18 November 2017*

CID, 2015 doi: 10.1093/cid/civ071

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[www.cleanhandssaveslives.org](http://www.cleanhandssaveslives.org)  
#HandHygiene  
#HealthForAll  
#InfectionPrevention



**CleanHandsSaveLives.org** 109

**Thank you for attention!**  
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Prevention & Infection Control  
1.85K subscribers

<https://www.youtube.com/channel/UC-ymOg8cGHAZvUddrmG6UTQ>

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	<p><i>(South Pacific Teleclass)</i></p> <p><b><a href="#">DEVELOPING AND IMPLEMENTING A PERSONAL PROTECTIVE EQUIPMENT TRAINING PROGRAMME FOR HIGH CONSEQUENCE INFECTIOUS DISEASE</a></b></p>

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