





Patient empowerment in hand hygiene programs to combat epidemics and antimicrobial resistance crisis

Prof. Yee-Chun Chen, National Taiwan University Hospital





Patient empowerment in hand hygiene programs to combat epidemics and antimicrobial resistance crisis



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Hosted by Julianne Munro
Christchurch Women's Hospital

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Content

- Background
- Why patient empowerment an important component in hand hygiene programs?
- What is patient empowerment?
- Where is the evidence?
- How to promote?
- Conclusion

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 World Health Organization Patient Safety




WHO Guidelines on Hand Hygiene in Health Care
First Global Patient Safety Challenge
Clean Care is Safer Care

Patient empowerment

- A new concept in health care and has now been expanded to the domain of patient safety
- The **process** that allows **an individual or a community** to gain the knowledge, skills, and attitude needed to make choices about their care.


WHO guidelines on hand hygiene in health care, 2009

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New relationship!

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www.glasbergen.com



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"You have to learn about thousands of diseases, but I only have to focus on fixing what's wrong with ME! Now which one of us do you think is the expert?"



http://www.eu-patient.eu/globalassets/campaign-patient-empowerment/briefing_paperpatient-empowerment_final_external.pdf

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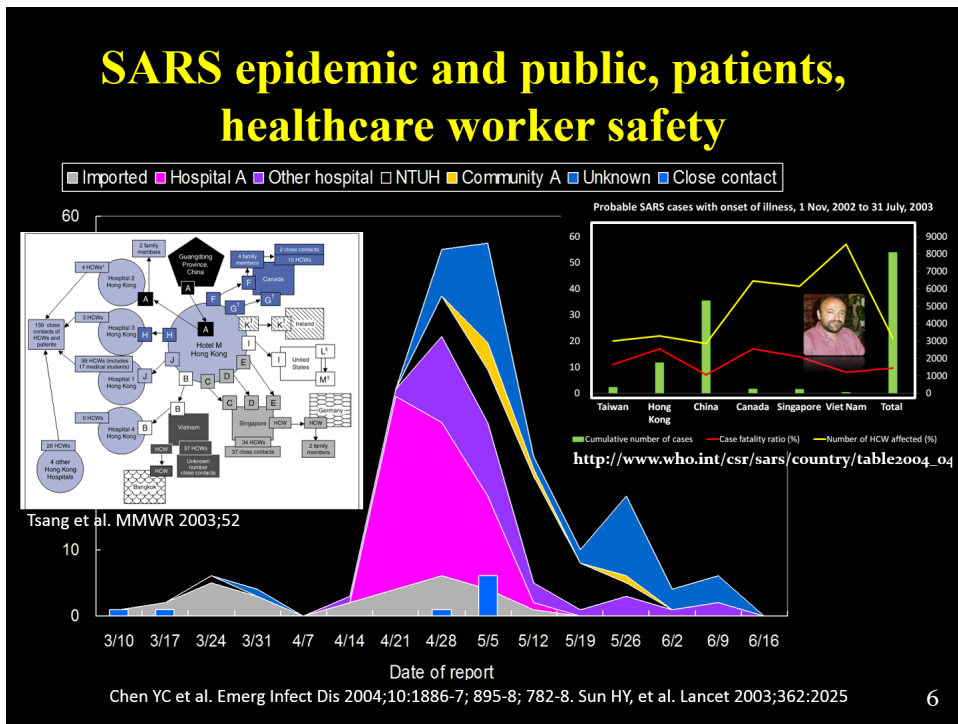
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Why patient empowerment an important component in hand hygiene programs?

Case study - SARS epidemic, 2003



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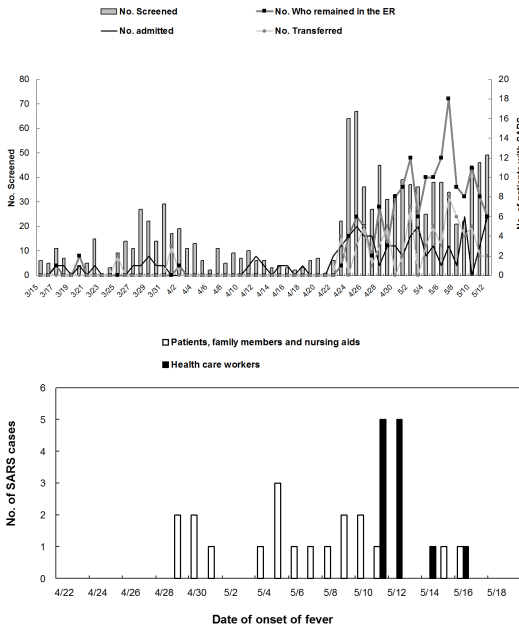



SARS Epidemic in 2003

- NTUH identified and treated the first cluster of SARS cases in Taiwan.¹
- NTUH reported 270 cases during Mar 10-Jul 23, many were severely ill, and treated 180 (27%) of 665 cases in Taiwan, even though it was staffed by 4,450 (2.5%) of the country's 178,000 HCW.²
- An outbreak began on April 23 at a nearby hospital (hospital A) in Taipei and spread to others. Patients sought care at NTUH. Overcrowding in the ER during an epidemic augments opportunities for cross transmission and environmental contamination.³

¹Chen YC, et al. EID 2004;10:895
²Chen YC, et al. EID 2004;10:1886
³Chen YC, et al. EID 2004;10:782

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SRAS in ER, 2003

- 31 cases occurred after exposure in NTUH ER. The index patient was linked to an large outbreak at a nearby municipal hospital.
- Six of 12 HCW cases (wearing N95 or P100 on duty at ER) with different working patterns, indicated that they did not have contact with a SARS patient.
- Patients and their care givers contaminated the environments.
- Overloaded medical staff took inadequate precautions, particularly hand hygiene.



Chen YC, et al. Emerg Infect Dis 2004;10:782

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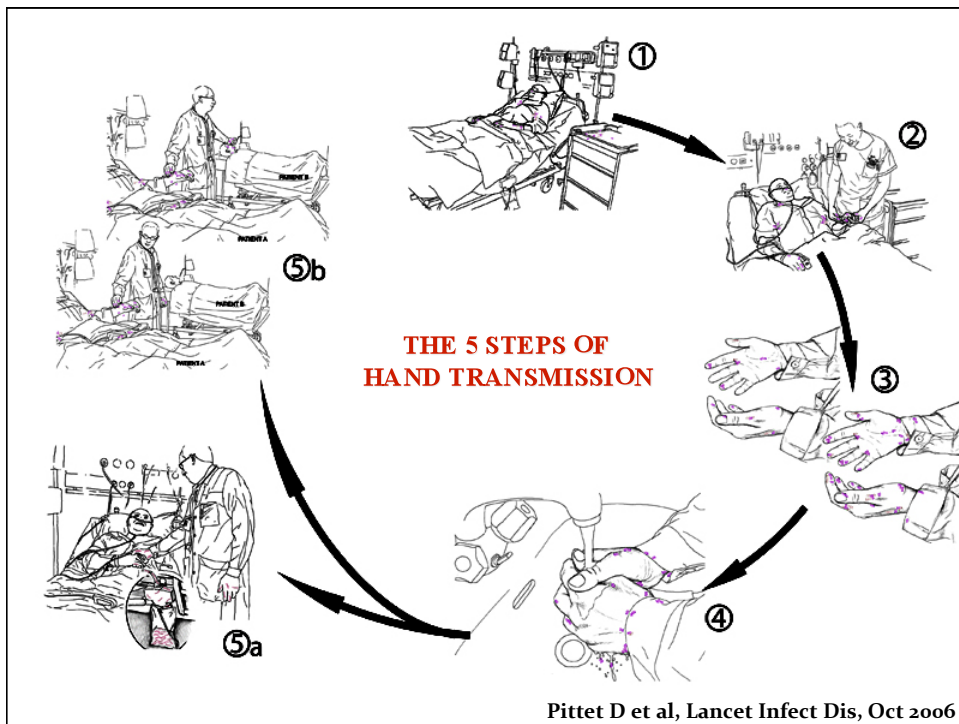
SARS and contaminated environment

Source of samples	No. of samples collected	No. (%) of positive samples	Source of positive result (copies of viral RNA per sample)
Surface of environment			
Triage	11	1 (9.1)	Button of drinking water fountains (257-2,570)
Examination area	10	0	
Observation unit	42	2 (4.8)	Button of drinking water fountains (257-2,570) Bedside chair (2,570-25,700)
Critical care area			
SARS area	10	4 (40.0)	Outlet of central air supply (257-2,570) Table top (257-2,570) Bedding (257-2,570) Bed edge (257-2,570)
Clean area			
	14	2 (14.3)	Book shelf (257-2,570) Bedding (257-2,570)
High-efficiency particulate air filter	10	0	
Air			
High-volume sampler	9	0	
Low-volume sampler	10	0	
Total	119	9 (7.6)	

- SARS virus is stable in the environment at room temperature for 1~2 days. It can survive on plastic surfaces, stainless steel, glass slides and paper files. The virus can survive even longer (up to 4 days) in stool from patients with diarrhea.
- Diarrhea is a common presenting complaint in SARS. One of our patients (Case 2 in the first cluster) presented with intestinal bleeding, and 4 patients in the second cluster had diarrhea.

Chen YC, et al. EID 2004;10:782

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Prevention and control of emerging infectious diseases

1. Early detection

Implicit case

- Atypical
- Early stage
- Co-morbidity
- Extreme age
- Co-infection
- Route of transmission
- Strain variation
- Mild infection
- Asymptomatic carrier

2. Source and contact tracing

3. Infection Control

Spreading

MMWR 2003;52;405

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Why patient empowerment an important component in hand hygiene programs?



Case study – Pandrug-resistant *Acinetobacter* outbreak, 2004

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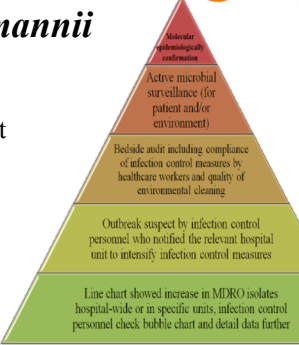
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Investigation and control of an outbreak of pandrug-resistant *Acinetobacter baumannii* colonization/infection

- PDRAB was first isolated from clinical specimens at NTUH in 1998. Only 2 strains were isolated from patients in the NICU before October 2004.
- On October 4, 2004, a 7-day-old neonate who had undergone abdominal surgery developed PDRAB bacteremia. This was considered to be an unusual event because of the patient's brief hospital stay and was presumed to be the iceberg of a potential outbreak.
- A thorough outbreak investigation was performed, leading to the detection of PDRAB isolates from 8 additional premature neonates in the NICU during the next 2 months; 7 of the isolates shared the same electrokaryotype.



Tseng YJ, et al. J Med Internet Res 2012;14:e131
Chan PC, et al. Infect Control Hosp Epidemiol 2007; 28:423

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Reported clusters of *Acinetobacter baumannii* Infection or Colonization in NICUs

Country	Year of outbreak	No. of patients		Clinical presentation	Mortality, %	Suspected source of infection	<i>Acinetobacter</i> strain isolated
		With colonization	With infection				
United Kingdom ²⁰	1981	0	4	Meningitis	0	None identified	<i>A. calcoaceticus</i> var. <i>anitratu</i> s
United Kingdom ²¹	1983	1	9	Pulmonary infection	22	Ambu bag	<i>A. calcoaceticus</i>
Germany ²²	1988	41	3	Sepsis	0	Humidifier	<i>A. calcoaceticus</i>
South Africa ²³	1997	NA	9	Sepsis	22	Suction catheters	NA
Bahamas ²⁴	1996	7	2	Sepsis	37	Air conditioner	NA
Taiwan ²⁷	2000	NA	9	Sepsis	33.3; 0*	Hands of healthcare workers and environment ^b	MDR <i>A. baumannii</i>
Brazil ^{25,c}	2002	0	11	Sepsis	27	None identified	MDR <i>A. baumannii</i>
India ²⁹	2003	NA	47	Bacteremia, meningitis	27.7	Intravenous catheter and washbasin	NA
Saudi Arabia ²⁶	2003	NA	7	None	42.8; 0*	None identified	NA
Taiwan (PR)	2004	7	2	Sepsis, pneumonia	11; 0*	None identified	PDR <i>A. baumannii</i>

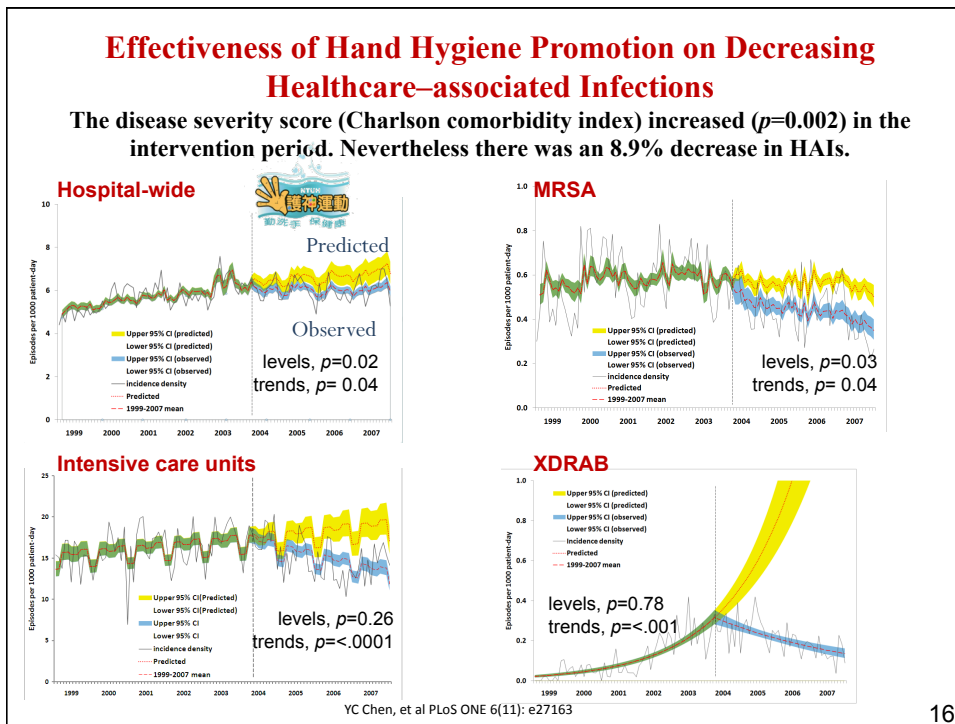
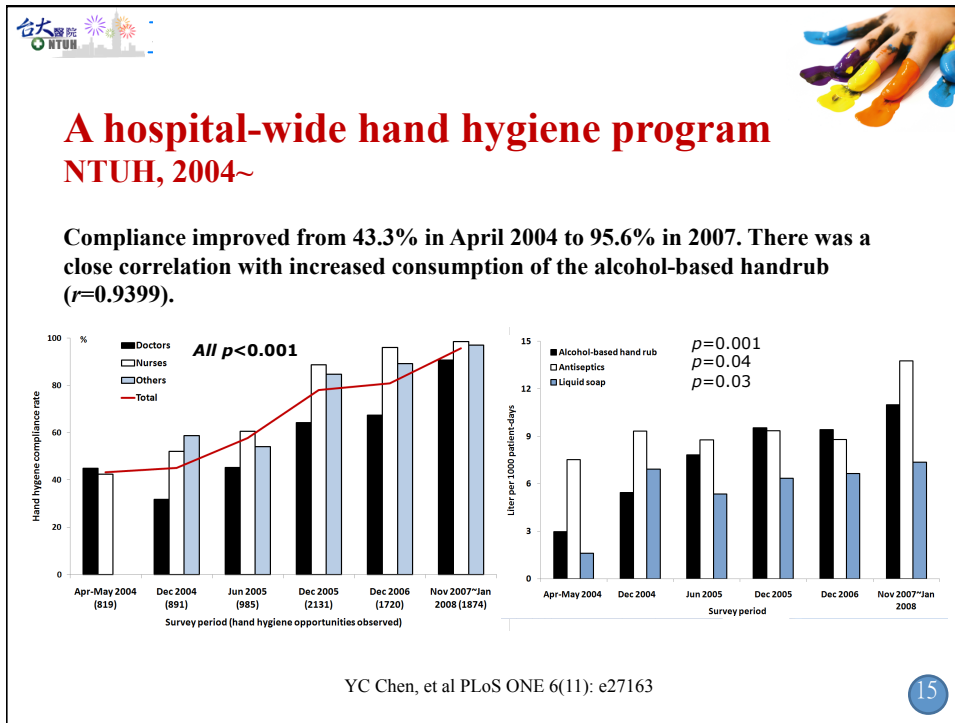
- In the absence of environmental contamination, transient hand carriage by personnel (HCWs, family) who cared for neonates colonized or infected with PDR *A. baumannii* was suspected to be the mode of transmission.
- Vigilance, prompt intervention and strict adherence to hand hygiene protocol were the key factors that led to the successful control of this outbreak.

Chan PC, et al. Infect Control Hosp Epidemiol 2007; 28:423

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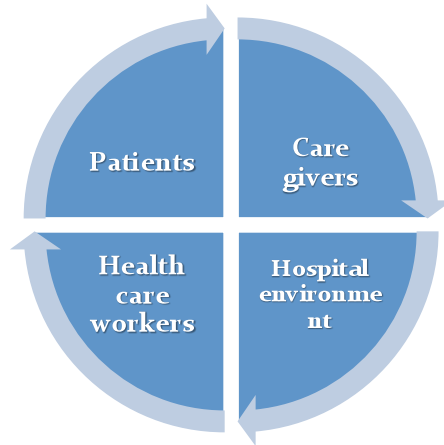


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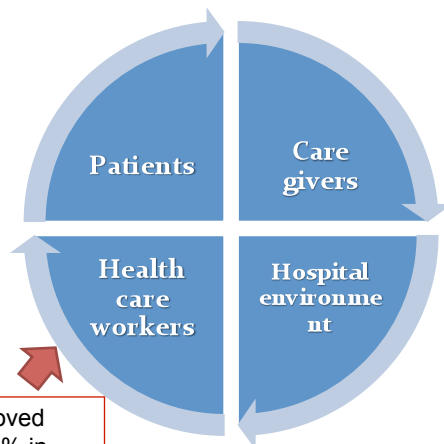
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Importance of patient empowerment in hand hygiene



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Importance of patient empowerment in hand hygiene



HH Compliance improved progressively from 48% in 1994, to 66% in 1997.
Lancet 2000;356:1307

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Importance of patient empowerment in hand hygiene

Education of medical students may damper by hierarchy in hospitals.
Am J Infect Control. 2014;42:231

Poorer compliance among physicians
PLoS One. 2013;8:e53746.

HH Compliance improved progressively from 48% in 1994, to 66% in 1997.
Lancet 2000;356:1307

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Importance of patient empowerment in hand hygiene

Cooperation/participation of patients and families

Educate of medical students may damper by hierarchy in hospitals.
Am J Infect Control. 2014;42(3):231-4.

Poorer compliance among physicians
PLoS One. 2013;8(1):e53746.

HH Compliance improved progressively from 48% in 1994, to 66% in 1997.
Lancet 2000;356: p1307-1312

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What is “patient empowerment”?

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Patient Empowerment

- Involvement
- Engagement
- Participation



- In very simplified terms, empowerment is an intangible process, which often manifests itself in concrete action. The term participation may also be preferable because it is always an active word (in English).
- For example, when a patient gains all the knowledge s/he needs to understand her/his condition, her/his life goals and the benefits and risks of different therapeutic options, s/he can reflect what therapeutic choice will be most suitable in her personal situation (empowerment), and participate actively in the therapeutic decision-making process with her/his doctor (involvement).

http://www.eu-patient.eu/globalassets/campaign-patient-empowerment/briefing_paperpatient-empowerment_final_external.pdf

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EPF European Patients Forum

WHAT IS PATIENT EMPOWERMENT?

Patient Empowerment Campaign
Patients prescribe E⁵ for Sustainable Health Systems

PATIENTS PRESCRIBE E⁵ FOR SUSTAINABLE HEALTH SYSTEMS

INDIVIDUAL

- EDUCATION**
Patients can make informed decisions about their health if they are able to access all the relevant information needed, in an easily understandable format.
- EXPERTISE**
Patients self-manage their condition every day so they have a unique expertise on healthcare which needs to be supported.
- EQUALITY**
Patients need support to become equal partners with health professionals in the management of their condition.

ORGANISATIONAL

- EXPERIENCE**
Individual patients work with patient organisations, to represent them, and channel their experience and collective voice.
- POLICY**
- ENGAGEMENT**
Patient need to be involved in designing more effective healthcare for all, and in research to deliver new and better treatments and services.

E⁵

#PatientsprescribeE

<http://www.eu-patient.eu/campaign/PatientsprescribeE/>

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EMPOWERED PATIENTS ARE PART OF THE HEALTHCARE TEAM

FROM DOING THINGS "TO" THE PATIENT...

... TO DOING THINGS WITH THE PATIENT!

EMPOWERED PATIENTS ARE CRUCIAL FOR HEALTH SYSTEMS

- WE** make informed choices about our treatment and care
- WE** have a better relationship with health professionals
- WE** are committed to adhering to our treatment
- WE** are willing and able to take more responsibility for our care
- WE** take preventive measures and seek earlier diagnosis which reduces hospitalisation and emergency visits

... ALL OF THIS REDUCES HEALTHCARE COSTS IN THE LONG RUN.

<http://www.eu-patient.eu/campaign/PatientsprescribeE/>

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Patient empowerment or ??

- The term can have different meanings and interpretations
- The term chosen to engage and involve patients will depend on what is appropriate for the specific culture of a region or community.
- **Patient empowerment** might be the preferred term from a patient advocacy point of view.
- However, the less emotionally charged and challenging term **patient participation** might be a term more acceptable to many HCWs, patients, and cultures.

WHO guidelines on hand hygiene in health care, 2009

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Partnership

- **Shared decision making**
- **Shared responsibility**
- **Shared accountability**

Poor hand hygiene by college students linked to more occurrences of infectious diseases, medical visits, and absence from classes.

Prater KJ, et al. AJIC 2016;44:66

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Patient empowerment

- WHO: a process through which people gain greater control over decisions and actions affecting their health (an individual and a community)
- Components fundamental to the process of patient empowerment:
 - understanding by the patient of his/her role;
 - acquisition by patients of sufficient knowledge to be able to engage with their healthcare provider;
 - patient skills;
 - the presence of a facilitating environment.

WHO guidelines on hand hygiene in health care, 2009

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Patient Empowerment in Hand Hygiene



- WHO standard methodology for multi-modal hand hygiene strategy¹
- UK National Patient Safety Agency's "clean your hands" campaign²

1. WHO. The five key components of the WHO multimodal hand hygiene improvement strategy. Geneva: WHO; 2010.
2. J Hospital Infection 2011; 77:299-303.

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Evidence of patient empowerment in hand hygiene

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Evidence of patient empowerment in hand hygiene

- **Evidence:** Patient could help to improve the hand hygiene compliance of healthcare professionals by reminding them to sanitize their hands ¹⁻⁴
- **Quality of evidence:** weakness of studies involving infection control ⁵
 - Quadri-experimental design
 - Confounded by other infection control interventions at the same time
- Intention versus action
- Strategy

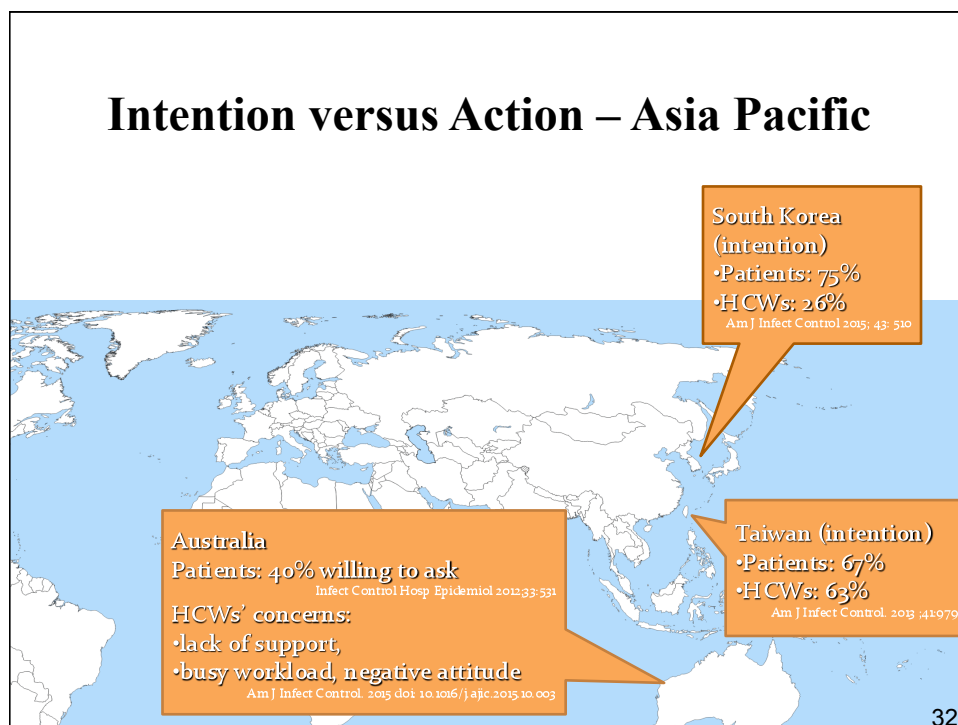
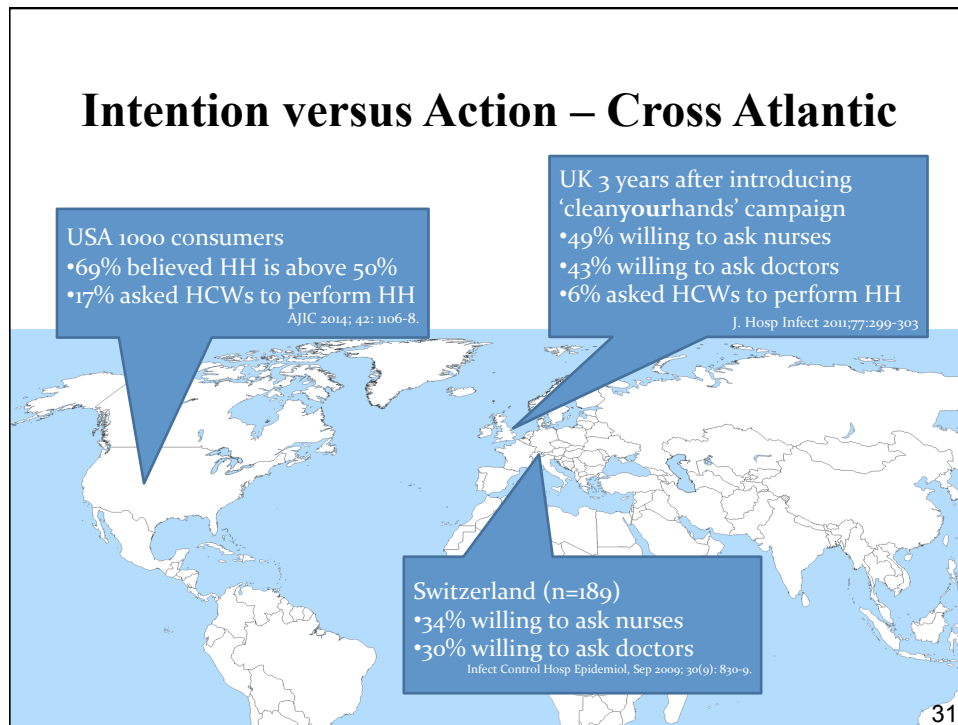
1. Parkin V, Jeanes A. Nurs Times 2003;99:19.
2. Duncanson V. Br J Infect Control 2005;6:26
3. Allegranzi B, et al. Am J Infect Control 2009;37:28
4. McGuckin M, et al. J Hosp Infect 2001;48:222.
5. David R, et al. J Hospital infect 2015; 89:141

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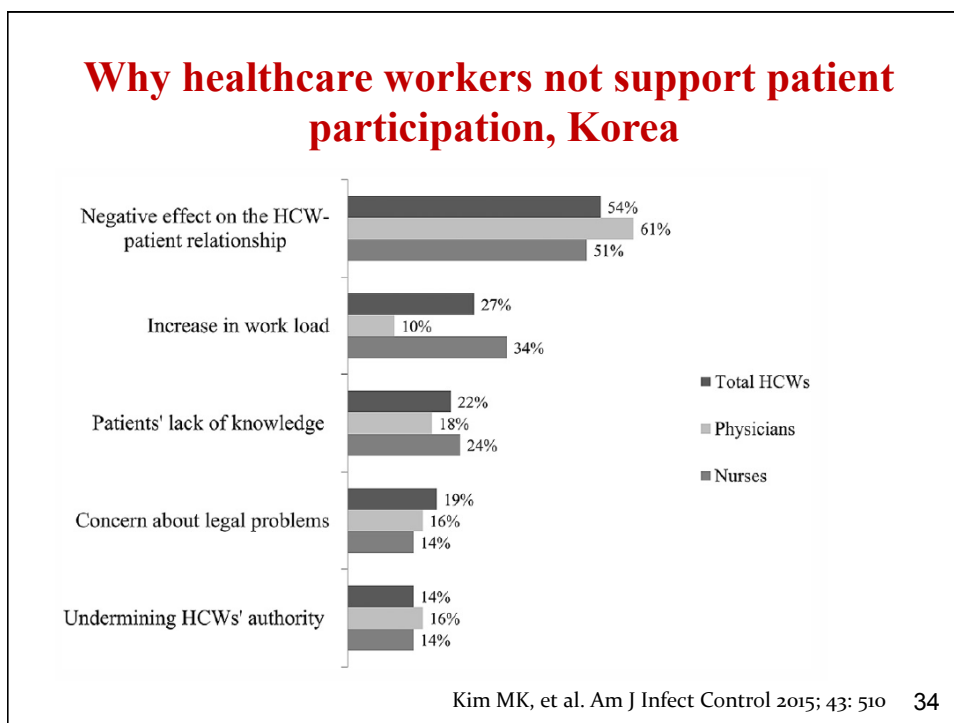
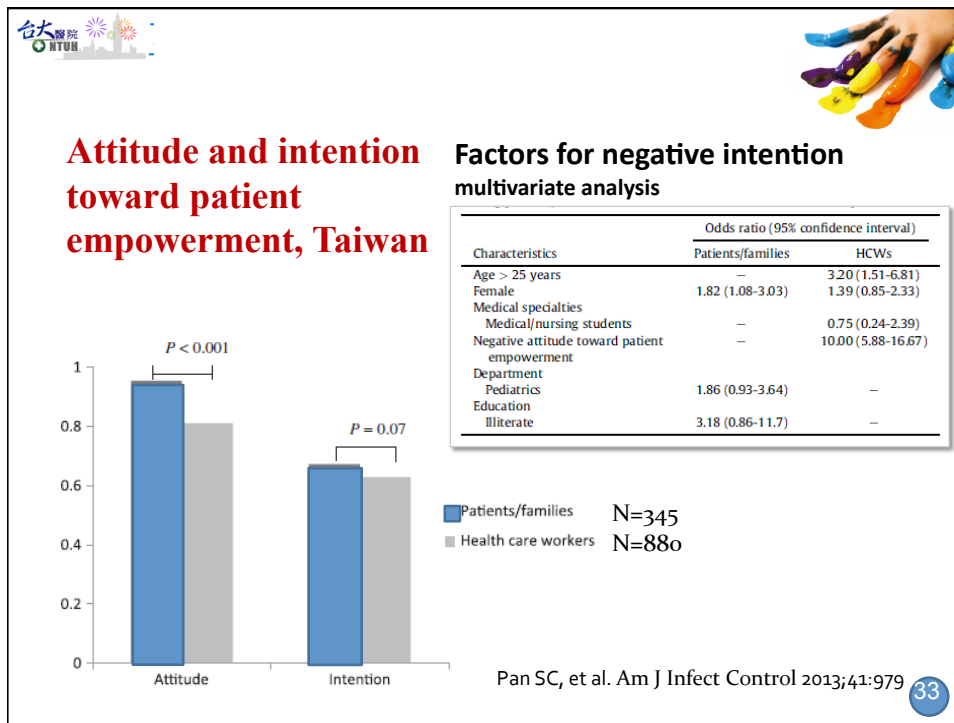
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How to promote patient empowerment in Hand Hygiene

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Strategies to involve patients

- **Background**
 - Patient could help to improve the hand hygiene compliance of healthcare professionals by reminding them to sanitize their hands
 - Actual proportions who remind staff varies from 5-80% ¹
- **Systemic review** ²
 - 1980-2013, 28 articles
 - Single-component strategies (e.g., video), n=16
 - Multi-modal approaches (e.g., video and leaflet), n=12
- **Patient-focused strategies** (n=23)
 - showed promise in helping to increase patients' **intentions** and/or involvement
 - **HCWs encouragement** appeared to be the most effective strategy ^{1,2}

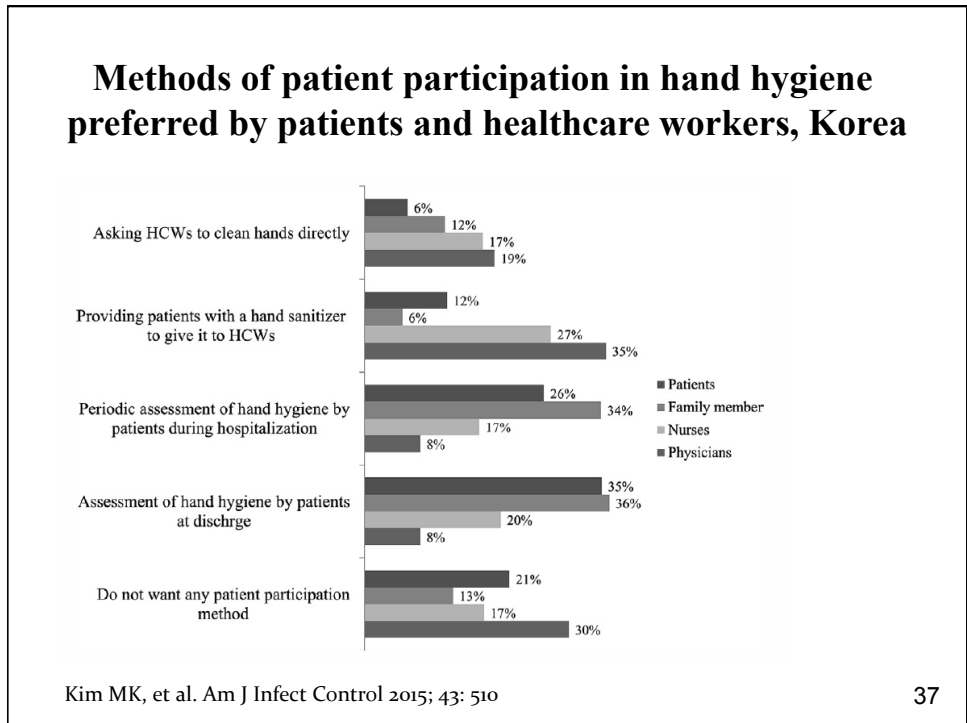
1. McGuckin & Govednik. J Hosp Infect 2013;84:191
2. David R, et al. J Hospital infect 2015; 89:141

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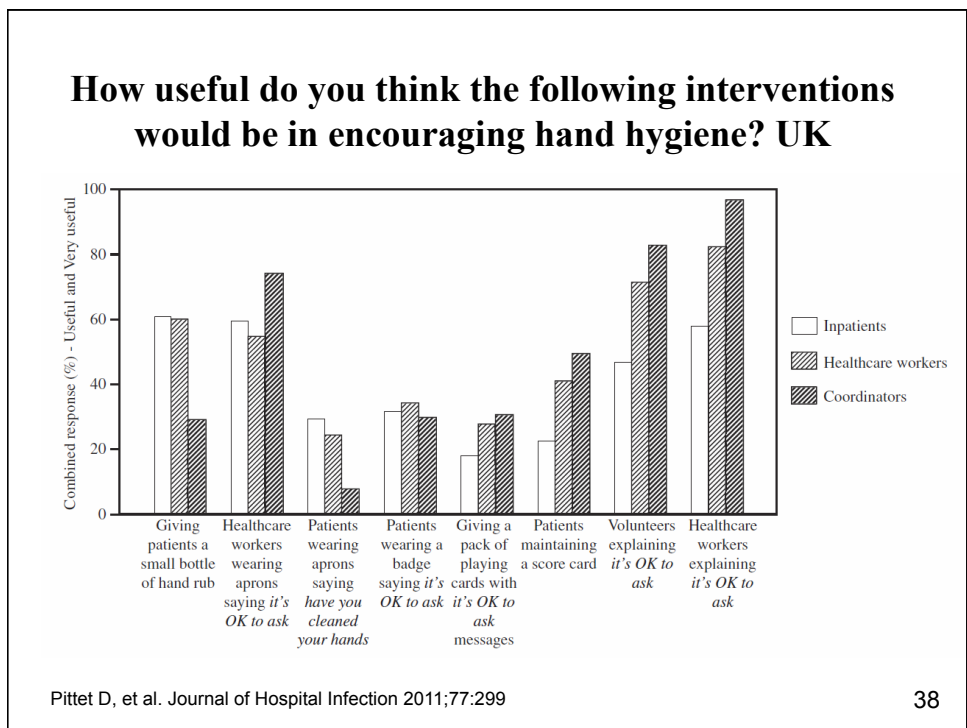
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How to promote

-  **Written documents**
-  **HCWs encouragement**
-  **Video**
-  **Social network!**

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Hand hygiene included in

- Admission orientation note
- Leaflet to patient or care givers



你洗手了沒?
照護洗手 5 時機

- 接觸病人前**
Before touching patients
- 執行乾淨/無菌操作技術前**
Before clean/sterile procedures
- 暴露病人體液風險後**
After exposure to patient fluids
- 接觸病人後**
After touching patients
- 接觸病人周遭環境後**
After touching patient surroundings

無明顯污染時可使用乾洗手液代替
除非 Save time / 省錢 Save money / 保護健康 Save lives

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Hand hygiene campaign at unit level and patient participation

Creativity

Role model nearby

Clean hands, save lives!

Patient participation Education the future

台大醫院 NTUH

於生命 請先洗手

院內感染 請先洗手

台大醫院 手護神

Customized "My Five Moments"

For healthcare workers

For the public

For children

台大醫院 NTUH

洗手了沒?

洗手 5 時機

- 1 接觸病人前
- 2 執行乾淨/無菌技術前
- 3 接觸病人體弱風險後
- 4 接觸病人後
- 5 接觸病人周遭環境後

來賓洗手 5 時機

- 1 吃東西前、後
- 2 使用公共物品前、後
- 3 看病後及抱小孩前
- 4 接觸眼、鼻、口後
- 5 上洗手間後

記得提醒工作人員注意手部衛生

兒童洗手 5 時機

- 1 吃東西前、後
- 2 遊戲前、後
- 3 上廁所後
- 4 擤鼻涕後
- 5 回家馬上洗

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5 May 2011 World Hand Hygiene Day activities

“Seeing is believing”
Pan SC, et al. AJIC 2014;42:799

From awareness to behavior change

Medical Students as Ambassadors of Hand Hygiene Promotion at the First Girl High School, Taipei

授勳典禮

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The screenshot shows the NTUH Hand Hygiene website. At the top left is the NTUH logo. The main title is "NTUH Hand Hygiene web" with the URL "http://www.ntuh.gov.tw/ifc/hhc". On the right is an illustration of hands with colorful gloves. The website content includes:

- 活動訊息 (Activity News):**
 - 2015年7月-9月進行手部衛生實地稽核
 - 2014年9月-11月進行手部衛生實地稽核
 - 2014年5月5日世界手部衛生日—買記得洗手啲
- 教育訊息 (Education News):**
 - 104年6月9-6月18日舉辦「手部衛生認知及技術大挑戰」活動
 - 101年5月15日-5月25日舉辦「手部衛生認知及技術大挑戰」活動
 - 103年6月3日-8月29日舉辦「手部衛生認知及技術大挑戰」活動
- 活動花絮 (Activity Highlights):** Three photos showing hand hygiene activities, including a group photo and a large hand-shaped sculpture.

At the bottom right of the screenshot is a blue circle with the number 49.



The screenshot shows a YouTube video player. The video title is "NTUH Hand Hygiene Promotion on YouTube, 2014 English version". The video content features a man in a suit and a large hand-shaped sculpture with the text "親愛的來賓 洗手了沒?" (Dear guests, have you washed your hands?). The video player shows a progress bar at 0:17 / 3:25. At the bottom right of the video player is the URL <https://youtu.be/uKwiTNW7kvM>.

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Promoting HH
via social media

Pan SC, et al. JMIR
Public Health Surveill
2016;2(1):e5.

Hospital Website



24,000 subscribers

Connection rate:
0.6%
151 unique viewers

Group e-mail



9,967 in e-mail group



Connection rate:
0.9%
91 reviewers

Facebook




13,080 subscribers

Connection rate:
6.2%
473 viewers





Social networks



WORLD MAP OF SOCIAL NETWORKS

July 2014



■ Facebook
 ■ QZone
 ■ V Kontakte
 ■ Odnoklassniki
 ■ Facenama

credits: Vincenzo Cosenza vincos.it

license: CC-BY-NC



source: Alexa

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Facebook utility in Asia

【2013年3月Facebook利用者数】

国名	ユーザ数	前月ユーザ数	前月比増加数	前月比増加率 (%)	対人口割合 (%)	人口(人)
インド	63,868,420	62,310,720	1,557,700	2.5	5.1	1,258,400,000
インドネシア	48,134,060	47,862,420	271,640	0.6	19.7	244,800,000
フィリピン	30,579,620	29,995,300	584,320	1.9	31.7	96,500,000
タイ	18,668,740	18,330,880	337,860	1.8	26.7	69,900,000
日本	13,531,220	13,427,340	103,880	0.8	10.7	126,400,000
マレーシア	13,369,980	13,188,100	181,880	1.4	45.6	29,300,000
台湾	13,205,960	12,955,500	250,460	1.9	56.7	23,290,000
ベトナム	13,187,540	11,539,200	1,648,340	14.3	14.7	89,700,000
パキスタン	8,624,460	8,265,100	359,360	4.3	4.8	180,000,000
大韓民国(韓国)	8,268,960	8,121,340	147,620	1.8	17.0	48,600,000
香港特別行政区(香港)	3,854,360	3,728,620	125,740	3.4	53.7	7,173,000
ハンガリーブダペシュ	3,671,440	3,307,280	364,160	11.0	2.4	152,400,000
シンガポール	2,715,560	2,679,020	36,540	1.4	51.2	5,300,000
ネパール	2,064,340	1,917,560	146,780	7.7	6.7	31,000,000
スリランカ	1,573,260	1,541,420	31,840	2.1	7.4	21,200,000
カンボジア	767,900	745,180	22,720	3.0	5.3	14,500,000
モンゴ国	594,300	555,040	39,260	7.1	21.2	2,800,000
中華人民共和国(中国)	577,780	574,500	3,280	0.6	0.0	1,353,600,000
アフガニスタン	463,200	435,660	27,540	6.3	1.4	33,400,000
ラオス	281,120	266,520	14,600	5.5	4.4	6,400,000
マカオ特別行政区(マカオ)	245,740	241,600	4,140	1.7	43.7	562,900
ブルネイ	215,300	218,620	-3,320	-1.5	53.8	400,000
モルディブ	136,040	139,720	-3,680	-2.6	45.3	300,000
ブータン	85,180	82,360	2,820	3.4	10.6	800,000

Population No. 1: India

Highest ratio: Taiwan

http://www.cereja.co.jp/press_release20130408.pdf

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 A Webber Training Teleclass
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Patient empowerment in hand hygiene programs to combat epidemics and antimicrobial resistance crisis

Prof. Yee-Chun Chen, National Taiwan University Hospital

An internet-delivered handwashing intervention to modify influenza-like illness and respiratory infection transmission (PRIMIT): a primary care randomised trial

Paul Little, Beth Stuart, F D R Hobbs, Mike Moore, Jane Barnett, Deborah Popoola, Karen Middleton, Joanne Kelly, Mark Mullee, James Raftery, Guiqing Yao, William Carman, Douglas Fleming, Helen Stokes-Lampard, Ian Williamson, Judith Joseph, Sascha Miller, Lucy Yardley

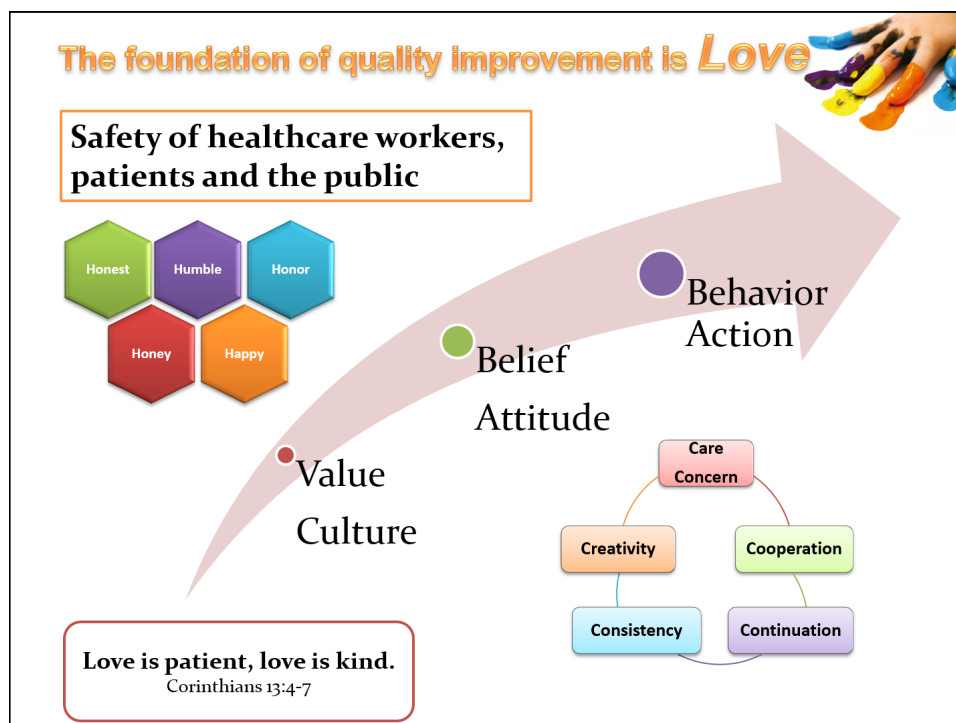
Summary

Background Handwashing to prevent transmission of respiratory tract infections (RTIs) has been widely advocated, especially during the H1N1 pandemic. However, the role of handwashing is debated, and no good randomised evidence exists among adults in non-deprived settings. We aimed to assess whether an internet-delivered intervention to modify handwashing would reduce the number of RTIs among adults and their household members.

- After 16 weeks, 4242 individuals (51%) in the intervention group reported one or more episodes of RTI compared with 5135 (59%) in the control group (multivariate risk ratio 0·86, 95% CI 0·83–0·89; $p < 0·0001$).
- The intervention reduced transmission of RTIs (reported within 1 week of another household member) both to and from the index person.

Yao G, et al. Lancet 2015; 386:1631

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Coming Soon

March 3 **MERS-COV: IMPLICATIONS FOR HEALTHCARE FACILITIES**
Prof. Sotirios Tsiodras, University of Athens Medical School, Greece

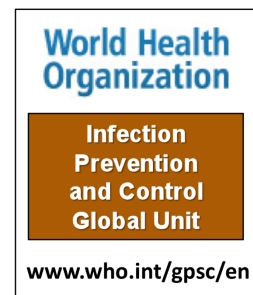
March 10 (Free Teleclass)
BARRIERS TO TB INFECTION CONTROL IN DEVELOPING COUNTRIES
Dr. Eltony Mugomeri, National University of Lesotho

March 16 (Free WHO Teleclass ... Europe)
THE GLOBAL *MYCOBACTERIUM CHIMAERA* OUTBREAK IN CARDIAC SURGERY
Dr. Hugo Sax, University of Zurich Hospitals
Sponsored by the World Health Organization

March 17 (Free Teleclass)
INFECTION PREVENTION AND CONTROL WITH ACCREDITATION CANADA QMENTUM PROGRAM
Chingiz Amirov, Canadian Journal of Infection Control
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