

INFECTION CONTROL FOR NURSING HOME IN ASIA

ANUCHAAPISARNTHANARAK, MD
DIVISION OF INFECTIOUS DISEASES
THAMMASAT UNIVERSITY HOSPITAL
THAILAND

OBJECTIVES

- Perceptions of Nursing Home in Asia
- Epidemiology of Infections at Nursing Home
- Infection Control Strategy for Nursing Home in Asia
- Conclusions

PERCEPTIONS OF NURSING HOME IN ASIA





Factors associated with willingness to enter long-term care facilities among older adults in Chengdu, China



Ziyue Huang¹*, Qingyue Liu¹*, Hongdao Meng², Danping Liu^{1*}, Debra Dobbs², Kathryn Hyer², Kyaiaen O. Conner³

Methods

A cross-sectional study involving a random sample of 670 adults aged 60+ in the Hezuo community in Chengdu, China in 2016. Respondents were interviewed by trained staff on socio-demographics, health status, quality of life, social support, and willingness to enter long-term care facilities.

Results

Only 11.9% of the respondents were willing to enter long-term care facilities for meeting their medical and social service needs. Multivariable logistic regression analysis showed that willingness to enter long-term care facilities was associated with higher household income (OR = 4.55, 95% CI:1.72–12.00), insurance of Urban Resident Basic Medical Insurance (OR = 4.80, 95% CI:1.17–19.67) and unemployment (OR = 0.48, 95% CI:0.24–0.99). Among those who were willing to enter long-term care facilities, an overwhelming majority (81.2%) would prefer going to a facility within 30-minute walking distance from their current residence, 82.5% indicated the need of nursing care, and 90.0% expected a partnership between the long-term care facility and a large hospital.

Conclusions

In conclusion, the proportion of community-living older adults who would enter in long-term care facilities was low. Moreover, the present study suggests that monthly household income, employment status and insurance with URBMI greatly influence the attitudes of the institutions among the older people. Further studies are needed to concentrate on how to set up a suitable long-term care insurance system. The demands of the services from consumers' aspect provide evidence that should be considered by the government when developing institutional-based long-term care in China. Moreover, home and community-based care should be still considered as main patterns in aged care system.



EPIDEMIOLOGY OF INFECTIONS AT NURSING HOME



Clinical characteristics of nursing home-acquired pneumonia in elderly patients admitted to a Korean teaching hospital

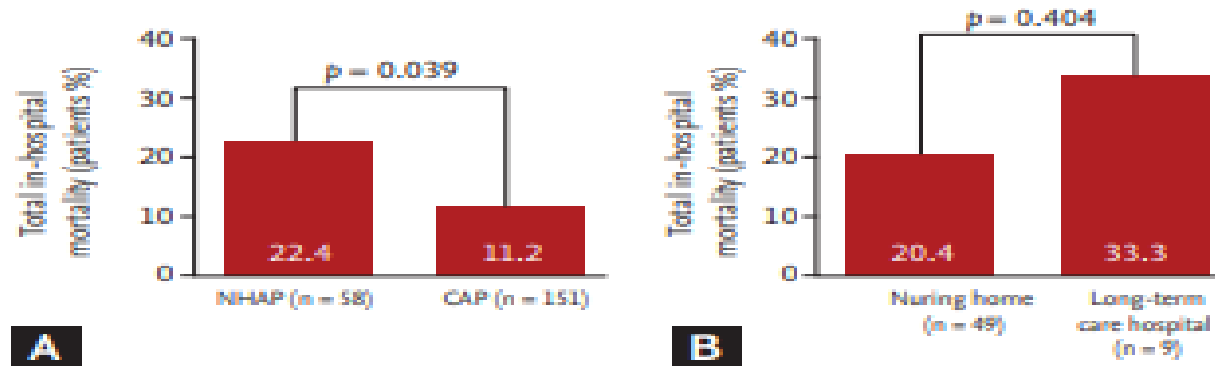


Seong Joo Koh and Jong Hoo Lee

Background/Aims: Nursing home-acquired pneumonia (NHAP) is included under healthcare-associated pneumonia. However, the optimal treatment strategy for NHAP has been controversial in several studies. We evaluated the clinical features of NHAP compared to community-acquired pneumonia (CAP) in elderly patients admitted with pneumonia.

Methods: This was a retrospective study in elderly patients aged ≥ 65 years with NHAP or CAP who were hospitalized at Jeju National University Hospital between January 2012 and April 2013.

Results: A total of 209 patients were enrolled, and 58 (27.7%) had NHAP. The patients with NHAP were older, had more frequent central nervous system disorders, and showed worse clinical parameters. Potential drug-resistant pathogens were more frequently detected in the NHAP group (22.4% vs. 9.9%, $p = 0.018$), and the incidences of *Pseudomonas aeruginosa* and methicillin-resistant *Staphylococcus aureus* were 8.6% and 10.3%, respectively. In-hospital mortality occurred in 13 patients (22.4%) with NHAP and 17 patients (11.2%) with CAP ($p = 0.039$). In multivariate analyses, only higher pneumonia severity index (PSI) score was associated with increased mortality ($p < 0.001$), and the PSI score was higher in the NHAP group than that in the CAP group.



Factors associated with prolonged length of stay in older patients

Hui Jin Toh¹, BEng, Zhen Yu Lim², MBBS, Philip Yap¹, MBBS, MRCP, Terence Tang¹, MBBS, MRCP

INTRODUCTION Prolonged stay in acute hospitals increases the risk of hospital-acquired infections in older patients, and disrupts patient flow and access to care due to bed shortages. We aimed to investigate the factors associated with prolonged length of stay (pLOS) among older patients (aged ≥ 78 years) in a tertiary hospital, to identify the potentially modifiable risk factors that could direct interventions to reduce length of stay (LOS).

METHODS During a three-month period from January 2013 to March 2013, we identified 72 patients with pLOS (LOS ≥ 21 days) and compared their demographic and clinical variables with that of 281 randomly selected control patients (LOS < 21 days) using univariate and multivariate logistic regression analyses.

RESULTS The mean age of the patients was 85.30 ± 5.34 years; 54% of them were female and 72% were of Chinese ethnicity. Logistic regression revealed the following significant factors for increased LOS: discharge to intermediate and long-term care services (odds ratio [OR] 9.22, 95% confidence interval [CI] 3.56–23.89; $p < 0.001$); increased severity of illness (OR 2.41, 95% CI 1.12–5.21; $p = 0.025$); and presence of caregiver stress (OR 3.85, 95% CI 1.67–8.91; $p = 0.002$).

CONCLUSION Presence of caregiver stress and nursing home placement are potential modifiable risk factors of pLOS among older patients. Early identification and management of caregiver stress, as well as expediting discharge planning, may help to reduce the length of stay for this cohort.

Keywords: caregiver stress, elderly, prolonged length of stay

OPEN

Nursing Staff Characteristics on Resident Outcomes in Nursing Homes

Juh Hyun SHIN

Conclusions: Turnover of nursing home staff and length of tenure may contribute to the more effective management of nursing homes, higher-quality long-term care insurance, and RN-staffing-related laws. Assessing staff characteristics and the tenure of employees promotes the effective management of nursing homes.

Multidrug-resistant organism carriage among residents from residential care homes for the elderly in Hong Kong: a prevalence survey with stratified cluster sampling

H Chen ^{*}, KM Au, KE Hsu, Christopher KC Lai, Jennifer Myint, YF Mak, SY Lee, TY Wong, NC Tsang

ABSTRACT

Introduction: A point prevalence survey was conducted to study the epidemiology of and risk factors associated with multidrug-resistant organism carriage among residents in residential care homes for the elderly (RCHes).

Methods: A total of 20 RCHes in Hong Kong were selected by stratified single-stage cluster sampling. All consenting residents aged ≥ 65 years from the selected RCHes were surveyed by collection of nasal swab, axillary swab, rectal swab or stool on one single day for each home. Specimens were cultured and analysed for methicillin-resistant *Staphylococcus aureus* (MRSA), multidrug-resistant *Acinetobacter* (MDRA, defined as concomitant resistance to fluoroquinolones, carbapenems, aminoglycosides, cephalosporins and beta-lactam with or without beta-lactamase inhibitors), vancomycin-resistant *Enterococcus* (VRE), and carbapenemase-producing *Enterobacteriaceae* (CPE). One third of the MRSA-positive samples were selected at random for molecular typing; all positive MDRA, VRE and CPE samples were tested for molecular typing. Demographic and health information of residents including medical history, history of hospitalisation, antimicrobial usage, and use of indwelling catheters were collected to determine any associated risk factors.

Results: Samples of 1028 residents from 20 RCHes were collected. Prevalence of MRSA was estimated

as 30.1% (95% confidence interval [CI]=25.1%-35.6%) and MDRA 0.6% (95% CI=0.1%-4.1%). No residents carried VRE nor CPE. Residents living in privately run RCHes were associated with MRSA carriage. Non-Chinese residents were associated with MRSA carriage with borderline significance.

Conclusions: This survey provided information about multidrug-resistant organism carriage among RCH residents. This information will enable us to formulate targeted surveillance and control strategies for multidrug-resistant organisms.

Hong Kong Med J 2018;24:350–60

DOI: 10.12809/hkmj176949

¹ H Chen ^{*}, MB, BS, FHKAM (Community Medicine)

² KM Au, MB, ChB

³ KE Hsu, BSc, MSc

⁴ CKC Lai, MB, ChB, FHKAM (Pathology)

⁵ J Myint, MB, BS, FHKAM (Medicine)

⁶ YF Mak, MB, BS, FHKAM (Medicine)

⁷ SY Lee, BSc, MSc

⁸ TY Wong, MB, BS, FHKAM (Medicine)

⁹ NC Tsang, MB, BS, FHKAM (Pathology)

¹ Infection Control Branch, Centre for Health Protection, Department of Health, Hong Kong

² Department of Pathology, Queen Elizabeth Hospital, Jordan, Hong Kong

³ Department of Rehabilitation, Kowloon Hospital, Homantin, Hong Kong

⁴ Department of Medicine, Queen Elizabeth Hospital, Jordan, Hong Kong

⁵ Infection Control Team, Queen Elizabeth Hospital, Jordan, Hong Kong

^{*} Corresponding author: ch459@ha.org.hk

Presence of multidrug-resistant organisms in the residents and environments of long-term care facilities in Taiwan



Chun-Ming Lee ^{a,b,c,d,p}, Chih-Cheng Lai ^{e,p}, Hsiu-Tzy Chiang ^f, Min-Chi Lu ^g, Ling-Fang Wang ^h, Tsai-Ling Tsai ⁱ, Mei-Yu Kang ^j, Yi-Ni Jan ^k, Yi-Ting Lo ^l, Wen-Chien Ko ^m, Shu-Hui Tseng ⁿ, Po-Ren Hsueh ^{o,*}

Abstract Objectives: This study investigated the prevalence of multidrug-resistant organisms (MDROs) in the residents and environments of long-term care facilities (LTCFs) in Taiwan. **Methods:** We prospectively investigated the distribution of MDROs in residents of six LTCFs and their environments from January 2015 to December 2015 (intervention period). Active surveillance of colonization of MDROs was performed by culturing rectal and nasal swab samples every 3 months for the residents: 63, 79, and 73 in the first, second, and third surveillance investigations, respectively. If MDROs, including methicillin-resistant *Staphylococcus aureus*, carbapenem-resistant *Enterobacteriaceae*, carbapenem-resistant *Pseudomonas aeruginosa*, and MDR *Acinetobacter baumannii* were identified, then swab specimens from environmental sources were also collected and cultured. During the study period, several infection control measures were also implemented.

Results: The overall infection density decreased significantly from 2.69 per 1000 patient–days in the preintervention (January 2014 to December 2014) to 2.39 per 1000 patient–days during the intervention period ($p < 0.001$). A total of 154 samples from residents and environmental sources were positive for MDROs. Methicillin-resistant *S. aureus* ($n = 83$, 53.9%) was the predominant organism, followed by carbapenem-resistant *Enterobacteriaceae* ($n = 35$, 22.7%), MDR *A. baumannii* ($n = 30$, 19.5%), and carbapenem-resistant *P. aeruginosa* ($n = 6$, 3.9%). The rates of detection of MDROs were 27.9% (60/215) in nasal swabs, 15.8% (34/215) in rectal swabs, and 11.1% (60/542) in the environmental sources.

Conclusions: The distribution and persistence of MDROs varied among the different LTCFs and time periods.

Copyright © 2017, Taiwan Society of Microbiology. Published by Elsevier Taiwan LLC. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Dissemination of methicillin-resistant *Staphylococcus aureus* sequence type 45 among nursing home residents and staff in Taiwan

F.-Y. Tsao¹, H.-W. Kou¹ and Y.-C. Huang^{1,2}

1) School of Medicine, Chang Gung University and 2) Department of Paediatrics, Chang Gung Memorial Hospital at Linkou, Gueishan, Taoyuan, Taiwan

> [Infect Control Hosp Epidemiol.](#) 2006 Nov;27(11):1171-7. doi: 10.1086/508825. Epub 2006 Oct 17.

Outbreak of *Chlamydia pneumoniae* infection in a Japanese nursing home, 1999–2000

Kazutoshi Nakashima¹, Takeshi Tanaka, Michael H Kramer, Hiroshi Takahashi, Takaaki Ohyama, Toshio Kishimoto, Hironori Toshima, Shigeyuki Miwa, Atsushi Nomura, Naoki Tsumura, Kazunobu Ouchi, Nobuhiko Okabe

A large outbreak of enterohaemorrhagic *Escherichia coli* O157, caused by low-salt pickled Napa cabbage in nursing homes, Japan, 2012

Ayako Tabuchi,^a Taku Wakui,^a Yuichiro Yahata,^b Koichi Yano,^c Kotaro Azuma,^c Takuya Yamagishi,^b Kazutoshi Nakashima,^b Tomimasa Sunagawa,^b Tamano Matsui^b and Kazunori Oishi^b

> [J Am Med Dir Assoc.](#) 2010 Oct;11(8):592-7. doi: 10.1016/j.jamda.2009.12.089. Epub 2010 Aug 5.

Residents had an increasing risk of norovirus gastroenteritis infection than health care workers during an outbreak in a nursing home

Li-Chu Yang¹, Ping-Cherng Chiang, Tzu-Hsin Huang, Su-Fen Chi, Yueh-Pi Chiu, Chun-Sui Lin, Yen-Fang Chou, Su-Chu Hsu, Xiu-Se Zhang, Chung-Guei Huang, Chen-Yi Kao, Chih-Ming Lin

> [Am J Infect Control.](#) 2016 Jul 1;44(7):805-8. doi: 10.1016/j.ajic.2016.01.032. Epub 2016 Mar 17.

Risk factors for methicillin-resistant *Staphylococcus aureus* carriage among residents in 7 nursing homes in Shanghai, China

Fei-Fei Gu¹, Ji Zhang², Sheng-Yuan Zhao³, Zhi-Rong Yang⁴, Yue-Lun Zhang⁵, Shu-Zhen Xiao¹, Su Wang¹, Xiao-Kui Guo⁶, Jie-Ming Qu⁷, Yu-Xing Ni¹, Li-Zhong Han⁸

Results: Of the 443 participating residents, 99 (22.3%) and 45 (10.2%) residents were colonized by *S. aureus* and MRSA, respectively. Previous hospitalization (odds ratio [OR], 2.564; 95% confidence interval [CI], 1.214–5.415; *P* = .014), presence of an invasive device (OR, 3.455; 95% CI, 1.678–7.113; *P* = .001), chloramphenicol therapy (OR, 7.672; 95% CI, 1.807–32.580; *P* = .006), and macrolides therapy (OR, 2.796; 95% CI, 1.056–7.403; *P* = .038) were independent risk factors for MRSA colonization. Low expenditure per month and less good sanitary condition also increased the risk for MRSA colonization.

Clusters of COVID-19 in long-term care hospitals and facilities – Japan, Jan 15–May 9, 2020

Osamu Iritani, Tazuo Okuno, Daisuke Hama, Asami Kane, Kumie Kadera, Kozue Morigaki,

Toshio Terai, Norie Maeno, Shigeto Morimoto

Multicenter Study > [Int J Clin Pharm.](#) 2018 Oct;40(5):1044–1050. doi: 10.1007/s11096-018-0683-z. Epub 2018 Jul 27.

Antimicrobial use and drug–drug interactions among nursing home residents in Singapore: a multicentre prevalence study

Aysu Selcuk¹, Christine B Teng¹, Sui Yung Chan¹, Kai Zhen Yap²

Affiliations + expand

PMID: 30054787 DOI: 10.1007/s11096-018-0683-z

INFECTION CONTROL STRATEGY FOR NURSING HOME IN ASIA



Evaluation on the implementation of respiratory protection measures in old age homes

This article was published in the following Dove Press journal:
Clinical Interventions in Aging
11 September 2017
[Number of times this article has been viewed](#)

Diana TF Lee¹
Doris Yu¹
Margaret Ip²
Jennifer YM Tang³

¹The Nethersole School of Nursing, The Chinese University of Hong Kong, ²Department of Microbiology, The Chinese University of Hong Kong, Prince of Wales Hospital, Sha Tin, ³Sau Po Centre on Ageing, The University of Hong Kong, Pok Fu Lam, Hong Kong

Purpose: Old age homes (OAHs) represent a vulnerable community for influenza outbreaks. Effective implementation of respiratory protection measures has been identified as an effective prevention measure to reduce mortality and morbidity caused by such outbreaks. Yet, relatively little is known about this aspect in these homes. This study evaluated the implementation of respiratory protection measures among infection control officers (ICOs) and health care workers (HCWs) in these homes in Hong Kong.

Patients and methods: A territory-wide, cross-sectional survey was conducted in 87 OAHs. A total of 87 ICOs and 1,763 HCWs (including nurses, health workers, care workers, allied HCWs and assistants) completed the questionnaires that evaluated the implementation at the organizational level and individual level, respectively. Generalized estimating equations with unstructured working correlation matrix were used to analyze the simultaneous influence of organizational and individual factors on the implementation.

Results: At the organizational level, all homes had a policy on respiratory protection and implementation of such measures was generally adequate. Basic resources such as paper towels/hand dryers and equipment disinfectants, however, were rated as most inadequate by HCWs. Training opportunities were also identified as grossly inadequate. Only less than half of the ICOs and HCWs participated in training on infection control either at the initiation of employment or on a regular basis. Twenty-five percent of HCWs even indicated that they had never participated in any infection control training. At the individual level, hand hygiene, among other protection measures, was found to be less well implemented by HCWs. In terms of the association of various organizational and individual characteristics, private homes and health workers rated significantly higher scores in the implementation of various domains in respiratory protection.

Conclusion: Addressing the unmet training needs and promoting hand hygiene practice are efforts suggested to further enhance the implementation of respiratory protection measures in OAHs.

Table 3 Implementation of respiratory protection measures by health care workers

	No (%) of health care workers (n=1,763)			
	None of the time	Some of the time	Most of the time	All of the time
Hand hygiene				
1. Washing my hands with liquid soap properly before caring for each resident ^a	14 (0.8)	156 (8.8)	607 (34.4)	986 (55.9)
2. Washing my hands with liquid soap properly after caring for each resident ^a	10 (0.6)	95 (5.4)	462 (26.2)	1,196 (67.8)
3. Washing my hands with liquid soap properly after toilet	3 (0.2)	43 (2.4)	249 (14.1)	1,468 (83.3)
4. Washing my hands with liquid soap properly after taking off the gloves ^a	7 (0.4)	79 (4.5)	373 (21.2)	1,304 (74.0)
5. Drying my hands with paper towels or hand dryer every time after hand washing	12 (0.7)	111 (6.3)	350 (19.9)	1,290 (73.2)
Respiratory hygiene/cough etiquette				
6. Covering my mouth and nose when sneezing or coughing	4 (0.2)	31 (1.8)	307 (17.4)	1,421 (80.6)
7. Using tissue papers to contain the respiratory secretions and dispose them in a bin with lid	1 (0.1)	32 (1.8)	209 (11.9)	1,521 (86.3)
8. Wearing a mask when I have respiratory symptoms	3 (0.2)	34 (1.9)	292 (16.6)	1,434 (81.3)
9. Performing hand hygiene after contacting respiratory secretions	2 (0.1)	36 (2.0)	204 (11.6)	1,521 (86.3)
Use of personal protective equipment (PPE)				
10. Wearing gloves when I have to handle blood, body tissues, excreta, body fluids, secretions or any other contaminated wastes	6 (0.3)	19 (1.1)	181 (10.3)	1,557 (88.3)
11. Taking off the contaminated gloves and changed to a new pair even when the same resident is being nursed	5 (0.3)	26 (1.5)	188 (10.7)	1,544 (87.6)
Handling soiled and contaminated articles				
12. Ensuring linen is washed thoroughly before reuse in my home	17 (1.0)	44 (2.5)	269 (15.3)	1,433 (81.3)
13. Ensuring appropriate PPE when handling the soiled and contaminated articles in my home	14 (0.8)	54 (3.1)	356 (20.2)	1,339 (76.0)
14. Ensuring soiled linen will have the waste removed and be immersed in diluted bleach before routine cleaning procedure in my home	10 (0.6)	40 (2.3)	315 (17.9)	1,398 (79.3)
15. Ensuring all instruments and medical equipment are cleaned and disinfected thoroughly before reuse in my home	9 (0.5)	36 (2.0)	261 (14.8)	1,457 (82.6)
Environmental control				
16. Ensuring the toilets in my unit can be flushed properly	9 (0.5)	31 (1.8)	360 (20.4)	1,363 (77.3)
17. Ensuring liquid soap is available in the toilets	16 (0.9)	33 (1.9)	301 (17.1)	1,413 (80.1)
18. Ensuring no-touch waste receptacle is available in the toilets	60 (3.4)	97 (5.5)	293 (16.6)	1,313 (74.5)
19. Ensuring paper towels or hand dryers are available in the toilet	61 (3.5)	95 (5.4)	371 (21.0)	1,236 (70.1)
20. Ensuring the isolation area is solely used for the purpose of isolating infected residents	16 (0.9)	55 (3.1)	257 (14.6)	1,435 (81.4)
21. Ensuring the RCHE has good ventilation	4 (0.2)	42 (2.4)	282 (16.0)	1,435 (81.4)
Handling residents with influenza-like illness				
22. Ensuring body temperature for all residents will be monitored regularly	24 (1.4)	50 (2.8)	319 (18.1)	1,370 (77.7)
23. Advising residents and visitors who have respiratory symptoms to wear a mask	3 (0.2)	66 (3.7)	375 (21.3)	1,319 (74.8)
24. Keeping staff at a distance of at least 1 m from the ill resident	84 (4.8)	247 (14.0)	620 (35.2)	812 (46.1)
25. Assisting in arranging medical consultations for the ill residents who have respiratory symptoms	23 (1.3)	112 (6.4)	375 (21.3)	1,253 (71.1)
26. Reporting suspected/confirmed influenza cases to the infection control officer or designated staff	15 (0.9)	67 (3.8)	325 (18.4)	1,356 (76.9)
27. Assisting in arranging ill residents in isolated area when an outbreak of influenza takes place	10 (0.6)	70 (4.0)	227 (12.9)	1,456 (82.6)

Implementation of a national quality improvement program to enhance hand hygiene in nursing homes in Taiwan

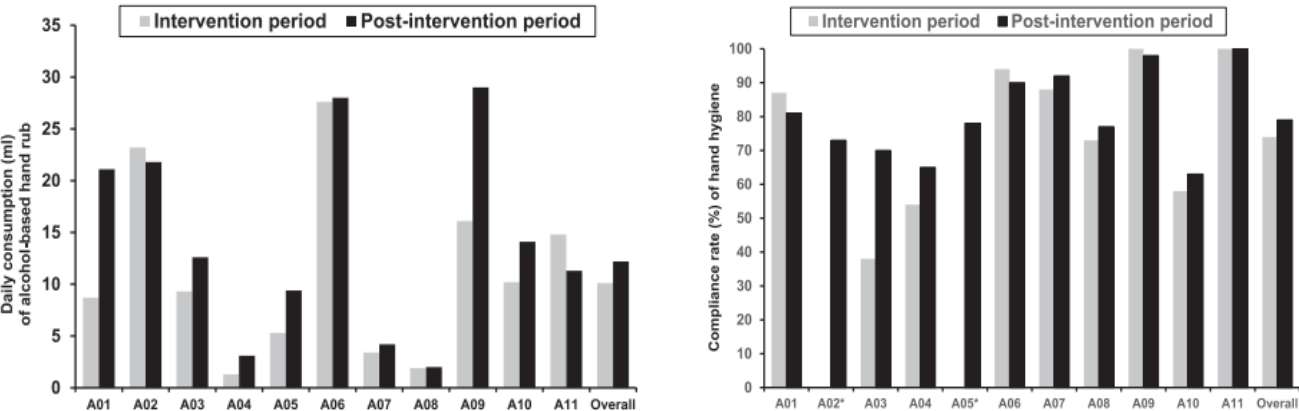


Chih-Cheng Lai ^a, Min-Chi Lu ^b, Hung-Jen Tang ^{c,d,e}, Yen-Hsu Chen ^f, Yi-Hui Wu ^g, Hsiu-Tzy Chiang ^h, Li-Hung Wu ⁱ, Wen-Chien Ko ^{g,j}, Po-Ren Hsueh ^{k,l}, Yu-Hui Chen ^{d,m,*}, for Infection Control Society of Taiwan

Methods: This prospective study was conducted in eleven nursing homes in Taiwan from January 2015 to December 2016. After intervention, we monitor the compliance, and accuracy of hand hygiene. In addition, we also calculated the number of episodes of infection per 1000 resident-days in each nursing home in the intervention period (July–December 2015) and post-intervention period (January–October 2016).

Results: Overall, the consumption of alcohol-based handrubs increased from 10.1 ml per resident-day in intervention period to 12.2 ml per resident-day in post intervention period. The compliance of hand hygiene increased from 74% in intervention period to 79% in post-intervention period and the rate of correct hand hygiene increased from 81% in intervention period to 87% in post-intervention period. Most importantly, the infection density decreased from 2.39 per 1000 resident-day in intervention period to 1.89 per 1000 resident-day.

Conclusions: A national quality-improvement program using WHO’s hand-hygiene strategy to enhance hand hygiene and reduce healthcare associated infection is effective in nursing homes in Taiwan.



Efficacy of Influenza Vaccine in Elderly Persons in Welfare Nursing Homes: Reduction in Risks of Mortality and Morbidity During an Influenza A (H3N2) Epidemic

Results: Of 22,462 individuals living in 301 nursing homes, 10,739 received either one dose (2027 subjects) or two doses (8712 subjects) of inactivated, subunit trivalent influenza vaccine. Through the period from November 1998 to March 1999, there were 950 cases of influenza infection diagnosed clinically with cases by virus isolation and/or serology. There were statistically significantly fewer clinical cases of influenza, hospital admissions due to severe infection, and deaths due to influenza in the vaccinated cohort (256 cases, 32 hospital admissions, and one death) compared with the unvaccinated controls (694 cases, 150 hospital admissions, and five deaths). Vaccination was equally effective in those who received one dose of vaccine as in those who received two doses. No serious adverse reactions to vaccination were recorded. Thus, influenza vaccination is safe and effective in this population and should be an integral part of the routine care of persons aged 65 years and older residing in nursing homes.

Epidemiol. Infect. (2000), 125, 393–397. Printed in the United Kingdom © 2000 Cambridge University Press

Vaccine effectiveness for influenza in the elderly in welfare nursing homes during an influenza A (H3N2) epidemic

SUMMARY

Influenza vaccine effect on the occurrence and severity of influenza virus infection in a population residing in nursing homes for the elderly was studied as a cohort study during an influenza A (H3N2) epidemic in Japan. Of 22462 individuals living in 301 welfare nursing homes, 10739 voluntarily received inactivated, sub-unit trivalent influenza vaccine in a programme supported by the Osaka Prefectural Government. There were statistically significantly fewer cases of influenza, hospital admissions due to severe infection, and deaths due to influenza in the vaccinated cohort compared to the unvaccinated controls. No serious adverse reactions to vaccination were recorded. Thus influenza vaccination is effective for preventing influenza disease in persons aged 65 years and over, and should be an integral part of the care of this population residing in nursing homes.

COVID-19 in long-term care facilities: An upcoming threat that cannot be ignored



Chih-Cheng Lai^a, Jui-Hsiang Wang^a, Wen-Chien Ko^b,
Muh-Yong Yen^c, Min-Chi Lu^d, Chun-Ming Lee^{e,f},
Po-Ren Hsueh^{g,h,*}, Society of Taiwan Long-term Care Infection
Prevention and Control

Infection prevention and control

Presently, we do not have an effective weapon against COVID-19. However, we can try to stop the rapid spread of SARS-CoV-2 to prevent the occurrence of new cases. The WHO provides an interim guidance on IPC in LTCFs, which aims to prevent SARS-CoV-2 from entering the facilities, spreading within the facilities, and spreading outside the facilities.²³ This IPC policy includes providing training to all staff, providing education for residents, auditing IPC practices, promoting hand hygiene and respiratory etiquette, ensuring adequate supplies are available, and promoting physical distancing in the LTCFs.²³ In addition, early recognition, isolation, care of COVID-19 cases, and source control are essential to prevent the spread of SARS-CoV-2 in the LTCFs. The US CDC also suggests that each LTCF should develop a comprehensive response plan, consisting of restricting all visits, removing unnecessary healthcare personnel and canceling all group activities and communal dining.²⁴ A daily report from the Expert Advisory Committee of COVID-19, presented a suitable example of how to respond to COVID-19 in LTCFs. On March 22, 2020, one nurse at a nursing home tested positive for SARS-CoV-2 through local transmission. Subsequently, 81 doctors, nurses and residents in the LTCF were immediately tested for SARS-CoV-2, and all of them tested negative. Simultaneously, all the residents were moved to a nearby hospital and two quarantine locations to prevent further spread of COVID-19, and the LTCF was closed and disinfected. Authorities also identified an additional 14 people who had contact with the infected nurse before her diagnosis and closely monitored their clinical conditions. On Mar 29, 2020, a repeated test for SARS-CoV-2 was negative for the infected nurse and all the tests of the contacts were also negative.

Prevention and infection control of COVID-19 in nursing homes: experience from China

Closed management was implemented early in nursing homes during the epidemic. Visiting and counselling services, family visits, unnecessary voluntary service and social practice visits were all suspended. All visitors to the homes were made aware these regulations and the reasons for which entry was permitted and prohibited. Acceptable reasons for entry were to take a temperature, ask and record travel history, or gather details about a resident's health status in relation to the pandemic response. People were not allowed to enter nursing homes if they had stayed in the area in Hubei where the epidemic started, or come into contact with someone who had visited the epidemic area within the preceding 15 days, been in close contact with confirmed or suspected cases, a body surface temperature $\geq 37.0^{\circ}\text{C}$, respiratory symptoms such as cough and runny nose, gastrointestinal symptoms such as vomiting and diarrhoea and other symptoms which might be attributable to COVID-19. The nursing homes were divided into 'red' and 'green' zones and staff allocated to just one of these areas to avoid cross-infection.

Infection control in residential care homes for the elderly in Hong Kong (2005-2014)

Grace CY Wong *, Tonny Ng, Teresa Li

ABSTRACT

Introduction: This serial cross-sectional survey study aimed to review the trend in various infection control practices in residential care homes for the elderly (RCHEs) in Hong Kong from 2005 to 2014.

Methods: Annual cross-sectional surveys were conducted at all RCHEs in Hong Kong, including self-administered questionnaires, on-site interviews, inspections, and assessments conducted by trained nurses, from 2005 to 2014. In all, 98.5% to 100% of all RCHEs were surveyed each year based on the list of licensed RCHEs in Hong Kong.

Results: There was a substantial increase in the proportion of RCHE residents aged ≥85 years, from 40.0% in 2005 to 50.2% in 2014 (P=0.002). The percentage of RCHE residents with special care needs also increased, from 22.3% in 2005 to 32.6% in 2014 for residents with dementia (P<0.001) and from 3.4% in 2005 to 5.0% in 2014 for residents with a long-term indwelling urinary catheter (P<0.001). The proportion of RCHEs with separate rooms for isolation areas ranged from 73.6% to 80% but did not show any significant trend over the study period. The proportion of RCHEs with alcohol hand rub available showed an increasing trend from 25.4% in 2006 to 99.2% in 2014 (P=0.008). The proportion of

health or care workers (who were not the designated infection control officers) passing skills tests on hand washing techniques increased from 79.2% in 2006 to 91.5% in 2014 (P=0.02). An increasing trend was also observed for the proportion of infection control officers who were able to prepare properly diluted bleach solution, from 71.5% in 2005 to 92.2% in 2014 (P=0.002).

Conclusions: For infection control practice to continue improving, more effort should be made to enhance and maintain proper practice, and to mitigate the challenge posed by the high turnover rates of healthcare workers in RCHEs. Introduction of self-audits on infection control practices should be considered.

Hong Kong Med J 2019;25:113–9
<https://doi.org/10.12809/hkmj187328>

GCY Wong *, MB, ChB
T Ng, MMed (Public Health) Singapore, FHKAM (Community Medicine)
T Li, FFPH, FHKAM (Community Medicine)

Elderly Health Service, Department of Health, Hong Kong SAR Government, Hong Kong

* Corresponding author: grace_cy_wong@dh.gov.hk

TABLE 3. Performance on various infection control practices in residential care homes for the elderly (RCHEs) in Hong Kong from 2005 to 2014

	No. (%) of RCHEs										Regression coefficient (P value)
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Availability of alcohol hand rub											
Alcohol hand rub available	NA	192 (25.4%)	187 (24.3%)	522 (67.9%)	731 (94.6%)	736 (94.6%)	728 (93.5%)	714 (93.5%)	727 (97.5%)	727 (99.2%)	69.02 (P=0.008)
Alcohol hand rub of proper concentration (70-80%) and not expired	NA	NA	NA	493 (64.1%)	627 (81.1%)	630 (81%)	605 (77.7%)	578 (75.7%)	642 (86.1%)	677 (92.4%)	18.93 (P=0.08)
Different types of isolation areas											
Separate room	555 (73.6%)	570 (75.5%)	589 (76.6%)	612 (79.6%)	596 (77.1%)	610 (78.7%)	618 (79.3%)	611 (80.0%)	583 (78.2%)	570 (75.5%)	2.23 (P=0.08)
Fixed 3/4 board	153 (20.3%)	150 (19.9%)	145 (18.9%)	126 (16.4%)	151 (19.5%)	139 (17.9%)	133 (17.1%)	113 (14.8%)	128 (17.2%)	150 (19.9%)	-2.01 (P=0.19)
Fixed 1/2 board	6 (0.8%)	6 (0.8%)	1 (0.1%)	1 (0.1%)	6 (0.8%)	5 (0.6%)	7 (0.9%)	6 (0.8%)	8 (1.1%)	6 (0.8%)	0.34 (P=0.21)
No fixed isolation area	40 (5.3%)	29 (3.8%)	34 (4.4%)	30 (3.9%)	20 (2.6%)	21 (2.7%)	21 (2.7%)	34 (4.5%)	27 (3.6%)	29 (3.8%)	-0.84 (P=0.26)
Availability of infection control-related records											
Staff sick leave record	666 (88.3%)	688 (91.1%)	708 (92.1%)	701 (91.2%)	713 (92.2%)	730 (93.8%)	720 (92.4%)	683 (89.4%)	675 (90.5%)	667 (91.0%)	-0.81 (P=0.77)
Visitor record	455 (60.3%)	632 (83.7%)	675 (87.8%)	675 (87.8%)	749 (96.9%)	717 (92.2%)	703 (90.2%)	691 (90.4%)	680 (91.2%)	675 (92.1%)	14.84 (P=0.09)
Resident fever record	635 (84.2%)	702 (93.0%)	737 (95.8%)	740 (96.2%)	727 (94.0%)	721 (92.7%)	724 (92.9%)	714 (93.5%)	697 (93.4%)	706 (96.3%)	2.64 (P=0.46)
Infection control training record	NA	NA	NA	645 (83.9%)	644 (83.3%)	659 (84.7%)	673 (86.4%)	636 (83.2%)	667 (89.4%)	656 (89.5%)	2.00 (P=0.48)
Staff passing infection control skills tests											
Proper hand washing technique (ICO)	654 (86.7%)	700 (92.7%)	701 (91.2%)	738 (96.1%)	737 (95.3%)	743 (95.5%)	752 (96.5%)	725 (94.9%)	715 (95.8%)	710 (96.9%)	4.71 (P=0.14)
Proper hand washing technique (health/care worker other than ICO)	NA	598 (79.2%)	628 (81.7%)	659 (85.7%)	671 (86.8%)	672 (86.4%)	677 (86.9%)	660 (86.4%)	679 (91.0%)	671 (91.5%)	7.55 (P=0.02)
Dilution of bleach (ICO)	539 (71.5%)	582 (77.1%)	630 (81.9%)	652 (84.8%)	675 (87.3%)	673 (86.5%)	675 (86.6%)	678 (88.7%)	694 (93.0%)	676 (92.2%)	14.08 (P=0.002)
Donning and doffing of PPE (ICO)	NA	609 (80.7%)	647 (84.1%)	637 (82.8%)	670 (86.7%)	655 (84.2%)	670 (86.0%)	650 (85.1%)	663 (88.9%)	635 (86.6%)	2.97 (P=0.27)

GUIDELINES ON PREVENTIONS OF DISEASES IN NURSING HOMES IN HONG KONG



- Standard precaution
- Hand hygiene
- Respiratory hygiene and etiquette
- Use of proper PPE
- Environmental cleaning
- Proper handling used equipment
- Proper handling soil linen
- Proper waste management
- Proper handling of sharp
- Isolation precautions

General measures to prevent and control the transmission of MDROs

1. Maintain good personal hygiene	<ul style="list-style-type: none"> Keep hands clean by washing thoroughly and frequently with liquid soap and water or rubbing with alcohol-based handrub. Avoid sharing personal items such as towels, toothbrushes and razors. Avoid direct contact with wounds, stomas, drainages, or anything contaminated by body secretions, with bare hands. Clean any skin lesions, such as abrasions or cuts immediately and cover properly with dressings. Wash hands after touching wounds. Avoid visiting public bathrooms, massage parlours and spas when an open wound is present.
2. Maintain environmental hygiene	<ul style="list-style-type: none"> Regularly disinfect furniture and facilities by using 1 in 99 diluted household bleach (mixing 1 part of household bleach containing 5.25% sodium hypochlorite with 99 parts of water). Use 70% alcohol to disinfect metal surfaces. Disinfect reusable equipment.
3. Proper use of antimicrobials	<ul style="list-style-type: none"> Consult a doctor promptly if symptoms of infection develop. Do not take antimicrobials indiscriminately. Antibiotics should be prescribed by registered medical practitioners.
4. Standard precautions	<ul style="list-style-type: none"> It is a basic level of infection control precautions that should be implemented in the care of all patients. Wear appropriate personal protective equipment (PPE), e.g. wearing gloves and gown when handling blood, body fluids, secretions, or excretions. If splashes and spills of blood or other body fluids during procedures are anticipated, gloves, surgical masks, goggles and gown should be worn. Wash hands thoroughly afterwards.

Risk assessments should be performed when deciding whether isolation precautions should be implemented to MDRO carriers, especially for those with CPE, VRE, VISA/VRSA, MRPA and *C. auris*.

	MDRO carriers without risk factors	MDRO carriers with risk factors
Infection control precautions	<ul style="list-style-type: none"> Standard precautions 	<ul style="list-style-type: none"> Standard precautions AND modified contact precautions: Gown and gloves should be worn before entering the room if the staff will have direct contact with the resident or contaminated objects.
Enhanced environmental cleansing and disinfection	<ul style="list-style-type: none"> Increase the frequency of environmental cleansing and disinfection by 1 in 49 diluted household bleach (mixing 1 part of household bleach containing 5.25% sodium hypochlorite with 49 parts of water) to at least three times per day especially for frequently touched areas such as door knobs, bedside tables or bedside rails. 	
Placement	<ul style="list-style-type: none"> MDRO carriers should preferably be placed in single rooms. Otherwise, residents with the same MDRO type should be cohorted in a room or physically separated by partitioned barriers. All vulnerable non-MDRO residents such as those with indwelling catheters, skin lesions, pre-existing wounds or currently on antimicrobial treatment, should not be assigned to live with the confirmed MDRO carriers in the same room. 	
Dedicated equipment	<ul style="list-style-type: none"> Dedicate the specific use of non-critical items (such as wheelchairs, sphygmomanometer cuffs) and cleansing tools. Otherwise, they should be cleaned and disinfected thoroughly after use. 	
Dedicated facilities	<ul style="list-style-type: none"> Dedicated toilet and bath facilities are preferred. Otherwise, assign MDRO carriers as the last one in the nursing care rounds (such as diaper or bath rounds) if possible. Clean and disinfect the facilities thoroughly after use. 	

THANK YOU VERY MUCH FOR YOUR
ATTENTION!

