

香港理工大學 護理學院 老年護理研究中心
支援長期照顧院舍對抗「新冠狀病毒」網上講座
8月28日(星期五)

題目：洗不洗，戴不戴？

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大綱

A. 戴不戴

- 從口罩檢驗質素的研究

B. 洗不洗

- 從觀察的研究

A. 口罩：戴不戴

- 最初海外學者不認為口罩可抗疫。
- 全民戴口罩（Mass masking / Universal masking）的概念 (9)
 - 社區的隱形病人 (asymptomatic/pre-symptomatic cases in community)：40-65% (7,8)
 - 研究顯示外科口罩可有效減低有病徵患者傳播冠狀病毒和季節性流感 (1)
 - 外科口罩分隔倉鼠的實驗亦證實口罩能降低新冠病毒感染率及嚴重性 (2)

Understanding the Difference



Surgical Mask



N95 Respirator

Testing and Approval

Cleared by the U.S. Food and Drug Administration (FDA)

Evaluated, tested, and approved by NIOSH as per the requirements in 42 CFR Part 84

Intended Use and Purpose

Fluid resistant and provides the wearer protection against large droplets, splashes, or sprays of bodily or other hazardous fluids. Protects the patient from the wearer's respiratory emissions.

Reduces wearer's exposure to particles including small particle aerosols and large droplets (only non-oil aerosols).

Face Seal Fit

Loose-fitting

Tight-fitting

Fit Testing Requirement

No

Yes

User Seal Check Requirement

No

Yes. Required each time the respirator is donned (put on)

A.1 口罩種類

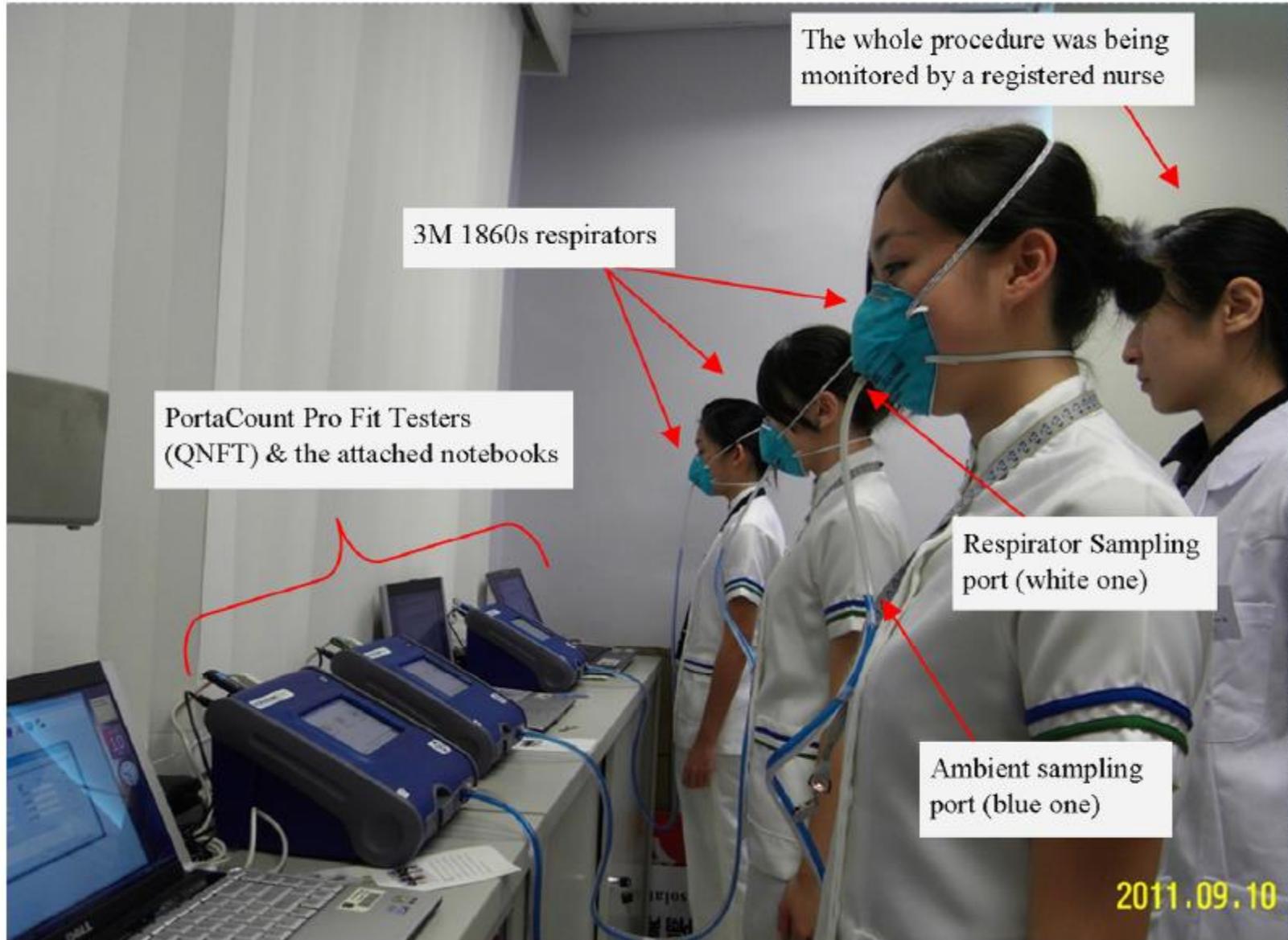


Fig 2. Fit tester system, tubing connection, and respirator. QNFT, quantitative fit testing.





Hua et al., 2020

A.1 口罩：戴

- 正常院舍環境並非有霧化產生程序：外科口罩

A.2 口罩：戴那個級數(Level)?

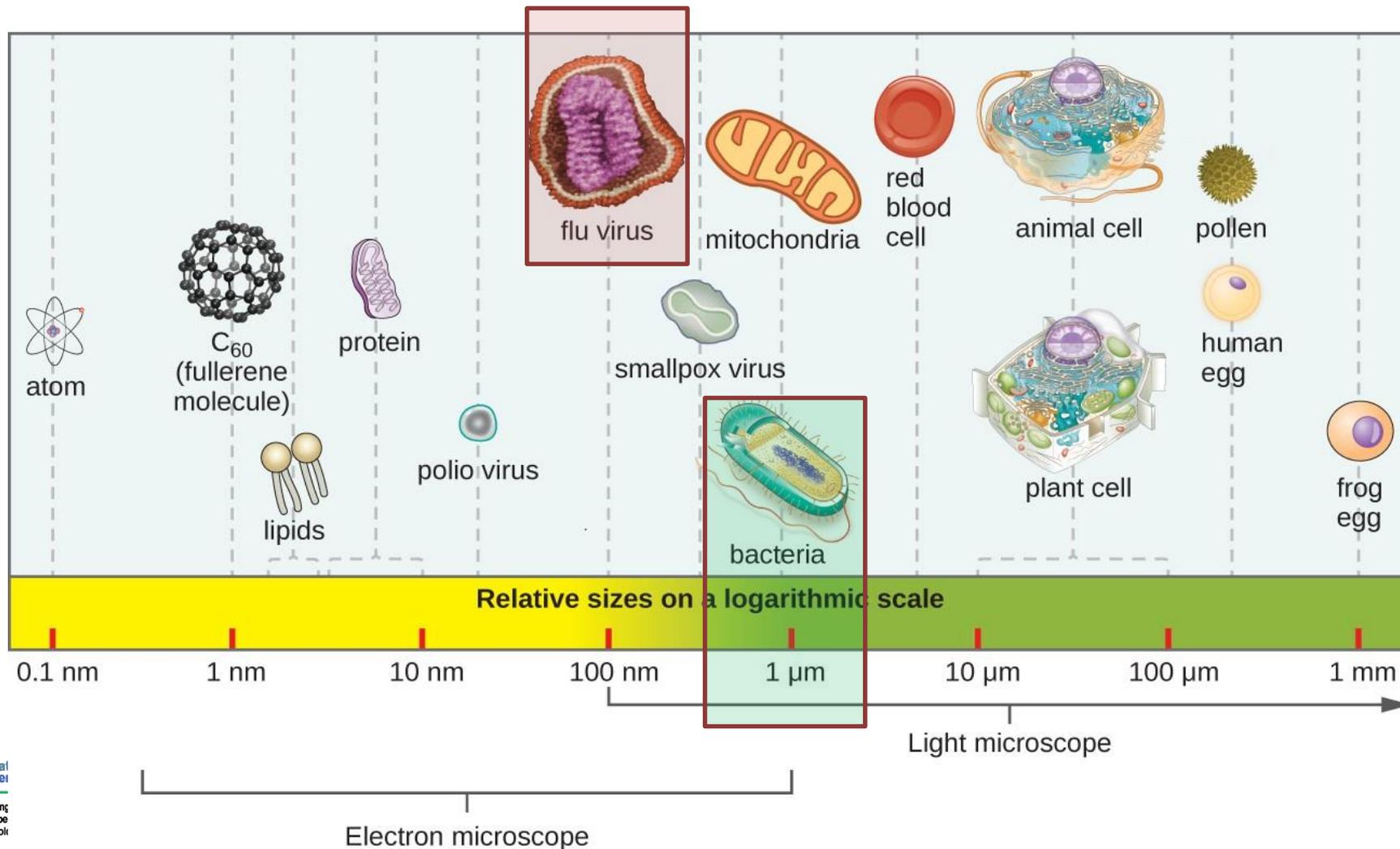
U.S.A.: ASTM F2100-19 STANDARD SPECIFICATION FOR PERFORMANCE OF MATERIALS USED IN MEDICAL FACE MASKS
EUROPE: EN 14683:2019 MEDICAL FACE MASKS – REQUIREMENTS AND TEST METHODS

		ASTM F2100-19			EN 14683:2019 Barrier Levels		
		Level 1	Level 2	Level 3	Type I	Type II	Type IIR
Barrier Testing	BFE % ASTM F2101, EN 14683	≥95	≥98		≥95	≥98	
	PFE % ASTM F2299	≥95	≥98		Not required		
	Synthetic Blood ASTM F1862, ISO22609	Pass at 80 mmHg	Pass at 120 mmHg	Pass at 160 mmHg	Not required		Pass at ≥ 16.0 kPa (>120 mmHg)
Physical Testing	Differential Pressure EN 14683	<5.0 mmH ₂ O/cm ²	<6.0 mmH ₂ O/cm ²		<40 Pa/cm ²		<60 Pa/cm ²
Safety Testing	Flammability 16 CFR Part 1610	Class 1 (≥ 3.5 seconds)			See European Medical Directive (2007/47/EC, MDD 93/42/EEC)		
	Microbial Cleanliness ISO 11737-1	Not required			≤30 cfu/g		
	Biocompatibility ISO 10993	510 K Guidance recommends testing to ISO 10993			Complete an evaluation according to ISO 10993		
Sampling ANSI/ASQC Z1.4 ISO 2859-1		<ul style="list-style-type: none"> AQL 4% for BFE, PFE, Delta P 32 masks for Synthetic Blood (Pass = ≥29 passing, Fail = ≤28 passing) 14 masks for Flammability 			<ul style="list-style-type: none"> Minimum of 5 masks up to an AQL of 4% for BFE, Delta P and Microbial Cleanliness 32 masks for Synthetic Blood (Pass = ≥29 passing, Fail = ≤28 passing) 		

粒子過濾率(PFE%)

Micron = 1×10^{-6} meter = μm (微米)

- 0.1 μm & 0.3 μm representing virus ~PFE
- 1.0 μm & 2.5 μm representing bacteria (including droplets) ~BFE



April 2, 2020



More ▾

Challenging the principle of 'reasonably practicable' by the flooding of counterfeit and fake face masks during the COVID-19 pandemic

Simon Ching Lam, PhD, RN, FHKAN Squina International Center for Infection Control, School of Nursing, The Hong Kong Polytechnic University.

Thank you for a concise and comprehensive summary of the captioned and the insightful conclusive statements. As in other regions in the world, this shortage of personal protective equipment (PPE) (i.e., gloves, face masks, air-purifying respirators, goggles, face shields, respirators, and gowns) has been unfolding in Hong Kong as well as Mainland China on mass and/or social media online. Such shortage added pressure to the hospital



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American Journal of Infection Control

journal homepage: www.ajicjournal.org

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American Journal of
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Commentary

Global risk to the community and clinical setting: Flocking of fake masks and protective gears during the COVID-19 pandemic

Simon Ching Lam PhD, FHKAN* Lorna Kwai Ping Suen PhD, FHKAN, Teris Cheuk Chi Cheung PhD

Squina International Center for Infection Control, School of Nursing, The Hong Kong Polytechnic University, Hong Kong SAR, PR China

A.2 口罩：質素

根據美國ASTM F2299-03標準測試共160個來自不同地區

- 48.8% 的口罩質素欠佳（0.3微粒PFE，平均值=47%；1.0微粒PFE，平均值=69%）
- 有42.6% 的口罩可能不符合包裝標籤展示的標準（例如ASTM level 1）
- 同一品牌口罩的抽樣測試結果也有參差，0.3微粒PFE由29.90%至99.99%不等 (4)。

不過，ASTM level 1的標準是香港公立醫院臨床工作的防護指引，並不是在社區活動的要求。

- 飛沫一般大小介乎3-10微米，而細菌大小平均3-5微米
- 口罩的細菌過濾效率（Bacterial Filtration Efficiency，BFE）或其2.5微米PFE 高於95% 已很理想。

A.2 口罩：質素

院舍的工作是醫院？/
院舍是社區？

基本上是根據衛生防護中心：
外科口罩，並沒有指明級數。



衛生防護中心
Centre for Health Protection

預防 2019 冠狀病毒病 (COVID-19)

給安老及殘疾人士院舍的指引

(暫擬)

最後審閱：
二零二零年八月二十七日



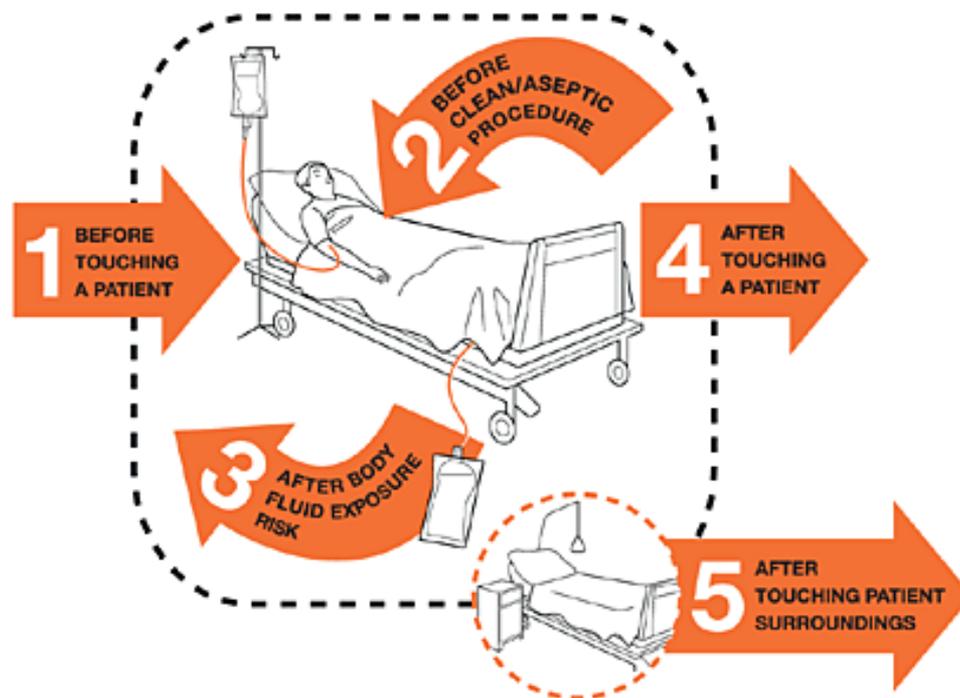
衛生防護中心乃衛生署
轄下執行疾病預防
及控制的專業架構
The Centre for Health
Protection is a
professional arm of the
Department of Health for
disease prevention
and control

- (c) 當雙手有明顯污垢時，須用梘液及清水潔手。如雙手沒有明顯污垢時，用含70-80%酒精搓手液潔淨雙手亦為有效方法。
- (d) 所有職員上班時應戴上外科口罩。

B. 洗不洗

潔手五時刻

1. 接觸病人前
2. 執行清潔 / 無菌程序前
3. 接觸體液後
4. 接觸病人後
5. 接觸病人周圍環境後



B. 洗不洗：研究

研究：觀察政府補貼和私營安老院護理員感染控制措施遵從性 (10)

方法：

- 在每間安老院的公用區和臥室區持續(2–3 週) 觀察護理員實行感染控制措施的情況
- 研究員在每間安老院的每區 (公用區和臥室區) 作200次情境觀察
- 共140名安老院護理員參與研究(政府補貼安老院78名，私營安老院62名)
- 觀察了2284次情境

對象：註冊護士、登記護士、專職醫療人員、保健員(health workers) 及起居照顧員(personal care worker)

B. 洗不洗：研究結果

手部衛生遵從性的變化

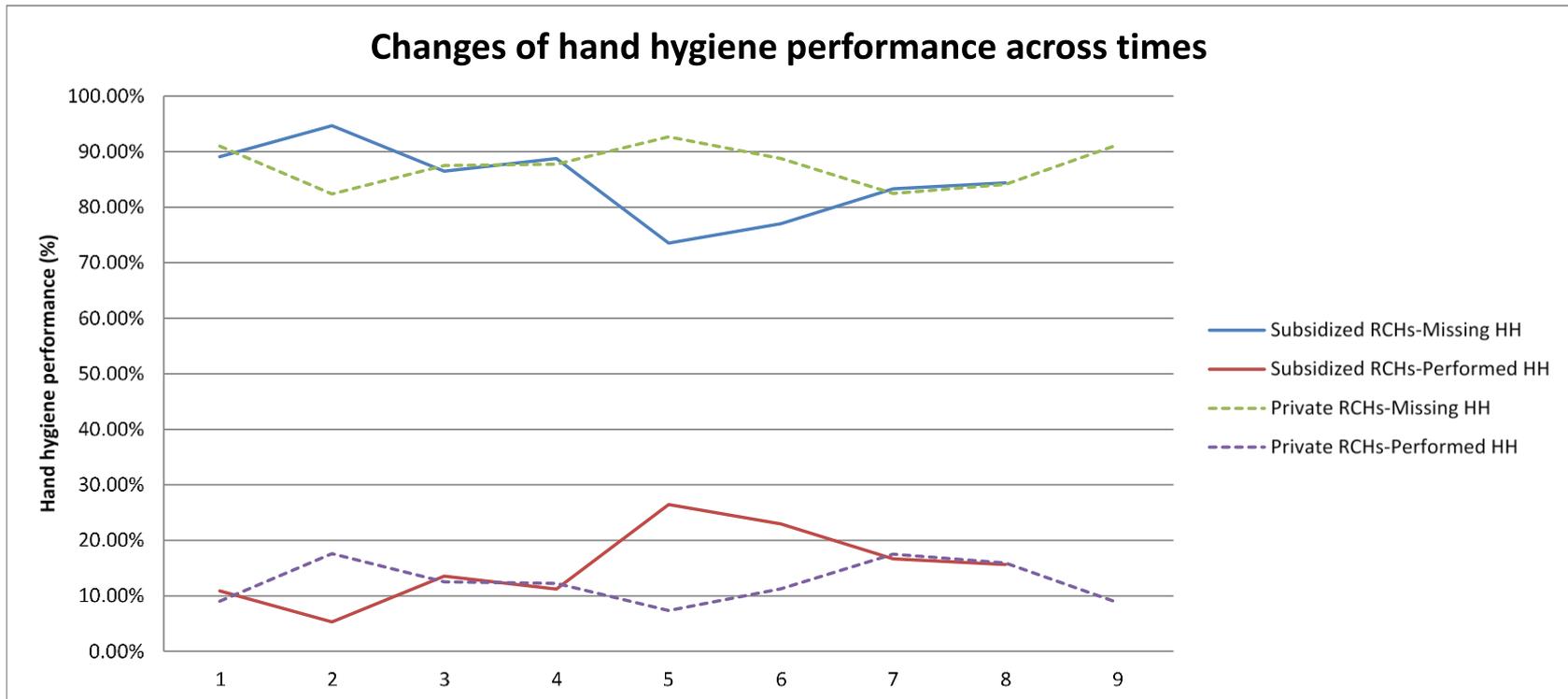


Figure 1. Changes of hand hygiene (HH) performance across times

B. 洗不洗：研究結果

安老院護理員 (healthcare workers) 常執行的感染控制措施包括

- 手部衛生
- 戴手套
- 呼吸防護

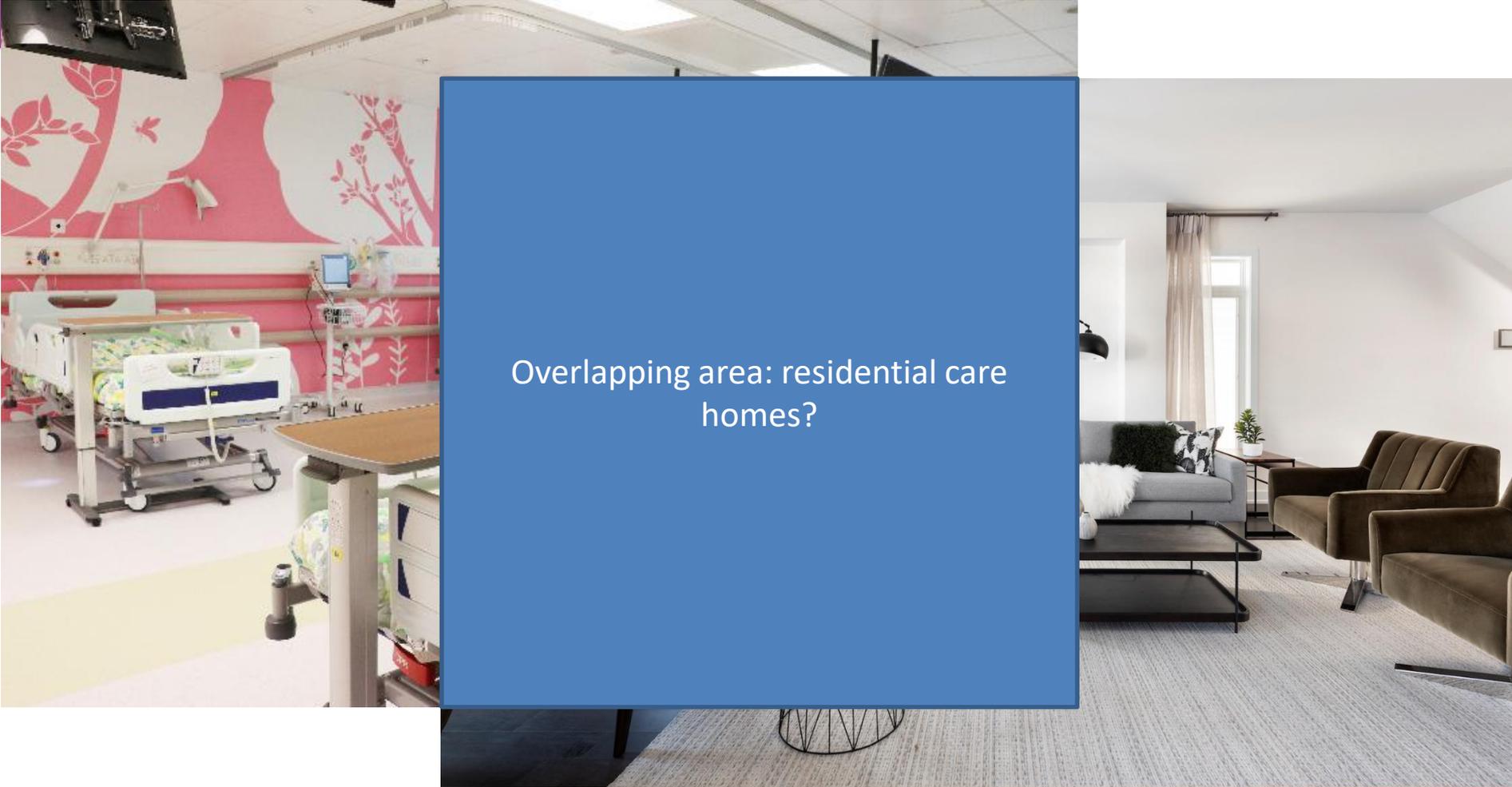
根據世界衛生組織“潔手5時刻”指引

- 清潔雙手的護理員僅得15%
- 為長者提供照護時，有77.9% 護理員戴手套不正確
- 起居照顧員(personal care workers)在潔手和正確戴手套方面的遵從性最差。

B. 洗不洗：研究結果

觀察得到潔手五時刻 (10)

1. 30.9% 接觸病人前 (98% 沒有潔手)
2. 1.4% 執行清潔 / 無菌程序前 (25%有潔手)
3. 1.4% 接觸體液後 (46%有潔手)
4. 50.2% 接觸病人後 (25%有潔手)
5. 16.2% 接觸病人周圍環境後 (97% 沒有潔手)



Overlapping area: residential care homes?

B. 洗不洗：洗

酒精搓手液...

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