The Royal New Zealand College of General Practitioners
Te Whare Tohu Rata o Aotearoa

Coronavirus (COVID-19): infection control and prevention measures

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COCHRANE SPECIAL COLLECTION: https://www.cochranelibrary.com/collections/doi/SC000040/full[1]

BACKGROUND: A pneumonia of unknown cause was first reported on 31 December 2019.[2] On 30 January 2020 the outbreak was declared a Public Health Emergency of International concern. On 11 February 2020 the World Health Organization (WHO) announced a name for this novel virus COVID-19 and on 7 March the WHO marked the milestone of 100,000 confirmed cases worldwide.[2] There is consensus that eventually Covid-19 will become the fifth circulating human coronavirus.[3] However, in the short-term the main objective is to slow its transmission and protect the most vulnerable people, thus allowing health systems to cope with this novel virus. Cochrane has put together a special collection using all the systematic reviews assessing infection control in order provide the best evidence for those coping with this situation.[1]

CLINICAL BOTTOM LINE: Handwashing and the use of alcohol-based hand rub (ABHR) are the simplest and most effective ways to prevent the spread of respiratory infections.[4,5] Barrier measures such as the use of masks, gloves and gowns by health workers are also effective ways of reducing transmission.[5] It would be prudent and would help adherence to standard procedures to remind healthcare workers of standard healthcare precautions to reduce transmission.[6] Increasing the visibility and availability of handwashing stations and ABHR is beneficial and reduces transmission.[4]

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Table 1. Summary of effective measures for infection control for respiratory viruses

Cochrane review	Recommendations	Evidence	Harms
Physical interventions to interrupt or reduce the spread of respiratory viruses[5]	Frequent handwashing with or without adjunct antiseptics	Evidence base is largely in agreement with 3 cluster RCT's all showing intervention effective, 7 case controls again showing effective, 2 cohorts showing no effect and 2 cohorts showing effective. (Case controls were conducted following the SARS outbreak in 2003.)	Harms recorded were mostly around discomfort for mask wearing
	Barrier measures for health care workers such as gloves, gowns and masks with filtration apparatus	RCT evidence was limited and showed no effect but accumulated evidence from retrospective case controls and cohorts all showed these strategies decreased transmission. N95 respirator mask OR 0.17 (CI 0.07–0.43), Gloves OR 0.32 (CI 0.23–0.45), Gowns OR 0.33 (CI 0.24–0.45), All OR 0.09 (CI 0.02–0.35).	
	Isolation of direct contact only	Retrospective cohort showed isolation of people with direct contact with a symptomatic SARS patient limited transmission. Isolation of people living or working with people with direct contact with SARS patients appeared to have no additional benefit.	
Interventions to improve hand hygiene compliance in patient care[4]	Multimodal interventions	WHO guideline suggests use of combination of ABHR at point of care, training and education, performance observation and feedback, reminders (eg posters) and administrative support. Interventions with all or some of the above showed effectiveness in improving hand hygiene but it is unclear if using multimodal intervention is better than a single intervention.	Harms were not recorded
	Increasing the availability of ABHR	Placing ABHR on carts increased usage and improved hand hygiene. Based on one RCT study in a population unaware of the study's aims.	
	Education for healthcare staff	Hand hygiene compliance was increased following education in acute care hospitals.	
Improving adherence to Standard Precautions for the control of health care-associated infections[6] (standard precautions including hand hygiene, gowns, cleaning and disinfection, facial protection, management of needles and clinical waste and cough etiquette)	Standard education	Education will improve workers adherence to standard precautions. This is based on 2 RCTs and one non-RCT.	No harms were recorded in these trials
	Education with visualisation of aerosolised particles	This improves workers use of facial protection but probably makes little or no difference to healthcare worker knowledge comparative to standard education techniques.	