Infection prevention and control measures for Ebola and Marburg Virus disease: A series of rapid reviews

KQ1 Work Exclusion- Initial Summary

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Competing interests: DM was involved in the 2015 rapid review by Hersi et al. [1] There are no other competing interests to acknowledge.

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Question

Should health workers who have had Ebola Virus Disease (EVD) exposure other than high-risk be excluded versus not excluded from work?

- No studies specifically addressing this question were identified. Therefore, additional searches were completed to address a revised question to provide information on occupational risks of EVD acquisition and transmission that might help in decision-making about work exclusion.
- **Revised PICO Question:**
  - What is the risk of EVD acquisition with different types of occupational exposures?
  - If acquired, what is the risk of transmitting the virus?

Methods Summary

This is one of a series of rapid reviews that will answer 12 key questions related to three themes on infection prevention and control measures for filoviruses: (i) transmission/exposure (n=3 questions), (ii) personal protective equipment (PPE) (n=5), and (iii) decontamination and disinfection (n=4). Data sources include Medline, Embase, bio/medRxiv pre-print servers, Global Medicus Index, Epistemonikos, China National Knowledge Infrastructure (CNKI) and Wangfang database. We will use an automation tool (CAL® tool) for titles/abstracts screening for relevant systematic reviews and primary comparative studies. Full-text screening, data extraction, risk of bias assessment, and GRADE (Grading of Recommendations Assessment, Development and Evaluation) for the certainty of evidence will be completed independently by two reviewers with any disagreements resolved by consensus, with arbitration by a third reviewer, if needed. Results from included studies will be synthesized narratively by theme and key question and pooled via random effects meta-analysis when appropriate.

Initial findings relating to work exclusion

We present study characteristics in Table 1 and a summary of findings in Table 2 and Table 3.

Initially, 203 studies were screened in the CAL tool software and 32 studies were included for full-text screening. Of these 32 studies, none met the eligibility criteria for the primary question (Appendix 2). However, 4 studies were deemed to provide information on occupational risks of EVD acquisition and transmission and were included to address the revised question. To capture additional information related to vaccination status of healthcare workers, an additional 203 studies were reviewed in the CAL tool and 34 of these studies were included. Following full-text screening, an additional 2 studies were deemed relevant. A list of excluded studies with reasons for exclusion can be found in Appendix 1.

Table 1. Characteristics of Included Studies

Citation [Author, Year]	Funding Source	Country	Dates of Outbreak	Study Type	Virus Species	Setting	# Total Health Workers	Study Objectives [as reported by study authors]
Doshi, 2020, [Cross-sectional][1]	Private research grant	Congo, DR	2014 outbreak	Serologic survey	Ebola	Individuals providing care to local populations in Boednde	611	"To conduct a serosurvey in November 2015 among HCWs providing care in Boende to improve our understanding of EBOV transmission dynamics"
Dunn, 2016, [Cross-sectional][2]	Not reported	Sierra Leone	2014 outbreak	Contact-tracing/identifying occupational exposures	Ebola	Health facility	64	"To determine the compliance with personal protective equipment (PPE) usage of HCWs during the follow-up of patients with CCHF; HCWs worked on the wards or handled contaminated materials from these patients in the laboratory"
Gsell, 2017, [Cohort][3]	Private, not-for-profit, research grants	Guinea	2016	Ring Vaccination study (Prospective)	Ebola	Health facility	1510 participants (307 HWs)	"To evaluate the vaccine safety in different populations and examine the transmission dynamics at the level of the rings"
Hoff, 2019, [Cross-sectional][4]	Private grant making foundation funding	Congo, DR	2014 outbreak	Seroprevalence survey	Ebola	Health facility	565	"To determine seroprevalence against multiple EBOV antigens among HCWs of Boende Health Zone, Democratic Republic of the Congo, the site of a 2014 EBOV outbreak"

Hoff, 2019, [Cross-sectional][5]	Not reported	Congo, DR	Unclear	Serologic survey/Interview	Ebola	Health facility	250	"To conduct a serosurvey among formal and informal HCWs in the Boende health zone in Tshuapa Districk, DRC"
Samai, 2018, [RCT][6]	Not reported	Sierra Leone	2014 outbreak	Randomized, unblinded Phase 2 trial	Ebola	ETU or hospital	8651	"To describe safety results from STRIVE, the largest cohort vaccinated with rVSVΔG-ZEBOV-GP."

Table 2. Summary of Findings: Exposure to high-risk activity[a] vs. no exposure to high-risk activity

Study details	*Activity Exposure vs Non-Exposure*	*Outcome details*	*Exposed with outcome (n/N, %)*	*Non-exposed with outcome (n/N, %)*	*Summary Effect Measure*	*Quality Assessment[b]*	*GRADE*	*Notes*
Incidence of EVD								
Doshi, 2020, [Cross-sectional][1]	Washed a cadaver	Seroreactivity (GP > 2.5) to anti-EBOV glycoprotein IgG	NR	NR	1.28 (95% CI 0.13–12.76)	Moderate Risk of Bias	⊕◯◯◯ Very low	None
Dunn, 2016, [Cross-sectional][2]	Performed\assisted in cesarean [No comparator]	PCR-confirmed EVD	0/3	N/A	N/A	Moderate Risk of Bias	⊕◯◯◯ Very low	PPE used: Gown; short gloves (three pairs); mask; goggles; shoe covers
	Placed urinary catheter [No comparator]	PCR-confirmed EVD	0/1	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves: gown
	Placed intravenous line [No comparator]	PCR-confirmed EVD	1/9 (11%)	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves
	Blood draw [No comparator]	PCR-confirmed EVD	0/4	N/A	N/A		⊕◯◯◯ Very low	PPE used: Gown; apron; short gloves (2 pairs); mask
	Discontinued intravenous line [No comparator]	PCR-confirmed EVD	0/1	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves
Gsell, 2017, [Cohort][3]	High-risk contact [No comparator]	Secondary cases of EVD	0/239[c]	N/A	N/A	Low Risk of Bias	⊕◯◯◯ Very low	All HCWs received the

Study details	*Activity Exposure vs Non-Exposure*	*Outcome details*	*Exposed with outcome (n/N, %)*	*Non-exposed with outcome (n/N, %)*	*Summary Effect Measure*	*Quality Assessment*[b]	*GRADE*	*Notes*
								rVSV-ZEBOV vaccine. The median delay from confirmation of index case to vaccination of individuals in the ring ranged from 2-10 days over the outbreak.
Samai, 2018, [RCT][6]	High perceived risk of Ebola infection [No comparator]	Laboratory-confirmed EVD	0 /2995	N/A	N/A	Moderate Risk of Bias	⊕◯◯◯ Very low	Unvaccinated HWs
	High perceived risk of Ebola infection [No comparator]	Laboratory-confirmed EVD	0/2811	N/A	N/A		⊕◯◯◯ Very low	HWs vaccinated with VSVΔG-ZEBOV-GP
	High perceived risk of Ebola infection [No comparator]	Laboratory-confirmed EVD	0/927	N/A	N/A		⊕◯◯◯ Very low	Crossover vaccinated (deferred)

a. Activity risk classifications were based on the list provided by the WHO (see Appendix 2).
b. Quality assessment of studies was completed using the ROBINS-I scale for observational studies. Scores from 7-9 were considered to be high quality (low risk of bias), scores of 4-6 of moderate quality (moderate risk of bias) and scores of 0-3 of low quality (high risk of bias). RCTs were assessed using the Cochrane ROB-2 tool.
c. Population consisted of 632 vaccinated individuals, 91 of these were frontline workers.

Table 3. Summary of Findings: Exposure to low or medium-risk activity[a] vs. no exposure to low or medium-risk activity

Study details	*Activity Exposure vs Non-Exposure*	*Outcome details*	*Exposed with outcome (n/N)*	*Non-exposed with outcome (n/N)*	*Summary Effect Measure*	*Quality Assessment[b]*	*GRADE*	*Notes*
Incidence of EVD								
Doshi, 2020, [Cross-sectional][1]	Been in the patient's room vs. Not exposed	Seroreactivity (GP > 2.5) to anti-EBOV glycoprotein IgG	NR	NR	0.79 (95% CI 0.22–2.83)	Moderate Risk of Bias	⊕◯◯◯ Very low	None
	Performed examinations (clinical or laboratory) vs. Not exposed	Seroreactivity (GP > 2.5) to anti-EBOV glycoprotein IgG	NR	NR	0.86 (95% CI 0.17–4.44)		⊕◯◯◯ Very low	
	Given food to a patient vs. Not exposed	Seroreactivity (GP > 2.5) to anti-EBOV glycoprotein IgG	NR	NR	1.13 (95% CI 0.32–3.99)		⊕◯◯◯ Very low	
	Conversed with a patient vs. Not exposed	Seroreactivity (GP > 2.5) to anti-EBOV glycoprotein IgG	NR	NR	3.80 (95% CI 0.73–19.83)		⊕◯◯◯ Very low	
	Washed the patient's clothes vs. Not exposed	Seroreactivity (GP > 2.5) to anti-EBOV glycoprotein IgG	NR	NR	0.99 (95% CI 0.10–10.41)		⊕◯◯◯ Very low	
	Had contact with patient's bodily fluids	Seroreactivity (GP > 2.5) to	NR	NR	2.39 (95% CI 0.79–7.30)		⊕◯◯◯ Very low	

	vs. Not exposed	anti-EBOV glycoprotein IgG						
	Cleaned patient's room vs. Not exposed	Seroreactivity (GP > 2.5) to anti-EBOV glycoprotein IgG	NR	NR	1.40 (95% CI 0.34–5.83)		⊕◯◯◯ Very low	
Dunn, 2016, [Cross-sectional][2]	Shared ward\latrine [No comparator]	PCR-confirmed EVD	3/15 (20%)	N/A	N/A	Moderate Risk of Bias	⊕◯◯◯ Very low	PPE used: None
	Took vital signs [No comparator]	PCR-confirmed EVD	0/16	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves
	Cleaned linens [No comparator]	PCR-confirmed EVD	1/2 (50%)	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves
	Cleaned body fluids [No comparator]	PCR-confirmed EVD	1/4 (25%)	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves
	Cleaned body fluids [No comparator]	PCR-confirmed EVD	1/1 (100%)	N/A	N/A		⊕◯◯◯ Very low	PPE used: None
	Cleaned surfaces: floor, walls, bed [No comparator]	PCR-confirmed EVD	0/3	N/A	N/A		⊕◯◯◯ Very low	PPE used: Gown; apron; short gloves (2 pairs); mask
	Cleaned surgical instruments [No comparator]	PCR-confirmed EVD	0/1	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves

	Moved patient [No comparator]	PCR-confirmed EVD	1/4 (25%)	N/A	N/A			PPE used: Short gloves
	Gave intravenous medications [No comparator]	PCR-confirmed EVD	0/15	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves: gown
	Gave intramuscular medications [No comparator]	PCR-confirmed EVD	0/1	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves
	Changed surgical site dressing [No comparator]	PCR-confirmed EVD	0/3	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves: gown
	General touching patient [No comparator]	PCR-confirmed EVD	0/5	N/A	N/A		⊕◯◯◯ Very low	PPE used: Short gloves
	General touching patient [No comparator]	PCR-confirmed EVD	2/4 (50%)	N/A	N/A		⊕◯◯◯ Very low	PPE used: None
Gsell, 2017, [Cohort][3]	Non-high-risk contact [No comparator]	Secondary cases of EVD	0/237[c]	N/A	N/A	Low Risk of Bias	⊕◯◯◯ Very low	All HCWs received the rVSV-ZEBOV vaccine. The median delay from confirmation

								of index case to vaccination of individuals in the ring ranged from 2-10 days over the outbreak.
Hoff, 2019, [Cross-sectional][4]	Direct contact with patients [No comparator]	Glycoprotein reactivity as >2.5 units/mL	57/279 (20%)	N/A	N/A	Moderate Risk of Bias	⊕◯◯◯ Very low	None
	Indirect contact with patients [No comparator]	Glycoprotein reactivity as >2.5 units/mL	29/177 (16%)	N/A	N/A		⊕◯◯◯ Very low	None
Hoff, 2019, [Cross-sectional][5]	Direct contact with patients [No comparator]	Seropositivity to anti-EBOV glycoprotein Ig	38/113 (34%)	N/A	N/A	High Risk of Bias	⊕◯◯◯ Very low	None
	Indirect contact with patients [No comparator]	Seropositivity to anti-EBOV glycoprotein Ig	7/18 (39%)	N/A	N/A		⊕◯◯◯ Very low	None
	Limited contact with patients [No comparator]	Seropositivity to anti-EBOV glycoprotein Ig	3/7 (43%)	N/A	N/A		⊕◯◯◯ Very low	None
Samai, 2018, [RCT][6]	Average perceived risk of Ebola infection [No comparator]	Laboratory-confirmed EVD	0/773	N/A	N/A	Moderate Risk of Bias	⊕◯◯◯ Very low	Unvaccinated HWs

	Average perceived risk of Ebola infection [No comparator]	Laboratory-confirmed EVD	0/760	N/A	N/A		⊕◯◯◯ Very low	HWs vaccinated with VSVΔG-ZEBOV-GP
	Average perceived risk of Ebola infection [No comparator]	Laboratory-confirmed EVD	0/724	N/A	N/A		⊕◯◯◯ Very low	Crossover vaccinated (deferred)
	Low perceived risk of Ebola infection [No comparator]	Laboratory-confirmed EVD	0/705	N/A	N/A		⊕◯◯◯ Very low	Unvaccinated HWs
	Low perceived risk of Ebola infection [No comparator]	Laboratory-confirmed EVD	0/606	N/A	N/A		⊕◯◯◯ Very low	HWs vaccinated with VSVΔG-ZEBOV-GP
	Low perceived risk of Ebola infection [No comparator]	Laboratory-confirmed EVD	0/2170	N/A	N/A		⊕◯◯◯ Very low	Crossover vaccinated (deferred)

a. Activity risk classifications were based on the list provided by the WHO (see Appendix 2).
b. Quality assessment of studies was completed using the ROBINS-I scale for observational studies. Scores from 7-9 were considered to be high quality (low risk of bias), scores of 4-6 of moderate quality (moderate risk of bias) and scores of 0-3 of low quality (high risk of bias). RCTs were assessed using the Cochrane ROB-2 tool.
c. Population consisted of 632 vaccinated individuals, 91 of these were frontline workers.

Citations:

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Appendix 1. Excluded Studies List – By Reason for Exclusion:

Does not provide risk of infection for HCWs for activities of interest (see Appendix 2)

Borchert M, Mulangu S, Lefèvre P, et al. Use of Protective Gear and the Occurrence of Occupational Marburg Hemorrhagic Fever in Health Workers from Watsa Health Zone, Democratic Republic of the Congo. J Infect Dis. 2007;196(s2):S168-S175. doi:10.1086/520540

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Wong KK, Davey RT, Hewlett AL, et al. Use of Postexposure Prophylaxis After Occupational Exposure to Zaire ebolavirus. Clin Infect Dis. 2016;63(3):376-379. doi:10.1093/cid/ciw256

Not about EVD or Marburg

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Study does not provide details on the exposure

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Study does not provide risk of infection by exposure

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No data from health workers

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Appendix 2. Eligibility Criteria

Question (1): Should health workers who have had EVD or Marburg exposure other than high-risk be excluded versus not excluded from work?

Background: 1) What is the risk of EVD acquisition with different types of occupational exposures? 2) If acquired, what is the risk of transmitting the virus?

Setting	Health care facilities, ETU, *community*
Population	Staff working in health care facilities, ETU Sub-groups: **High risk patient care activity** Broken skin or mucous membrane contact with a patient with Ebola virus disease (alive or deceased) or their bodily fluids: • Bodily fluid in direct contact with mucous membrane (e.g. eyes, nose or mouth) • Penetrating sharps injury from used device or through contaminate • Performed finger prick • Put in IV • Delivered babies • Performed invasive procedure • Performed major surgery • Performed autopsy • Drew blood • Cleaned blood spill • Controlled bleeding • Performed minor surgery • Moved dead bodies • Cleaned or disinfected latrines **Intermediate risk patient care activities** (intact-skin-only contact with a patient with Ebola virus disease or their body fluids):d • Clinical assessment of an individual with suspected Ebola virus disease before diagnosis without appropriate personal protective equipment (PPEClose contact with a patient, body or body fluid, linen or clothes of an infected patient/person • Bathes or cleaned patients • Gave injection • Handled urinary catheter • Contact with contaminated surfaces • Recapped needle

	• Handled IV line (e.g., gave IV medications) • Handled waste • Handled linen or clothes or mattresses **Low risk patient care activities** (No direct contact with a patient with Ebola virus disease or their body fluids): • Living in the same house as a patient with Ebola virus disease but no direct contact with their bodily fluids) • Breach of personal protective equipment (PPE) without risk of contamination • Provided general patient care (took vital signs, examined patients, moved patients) • Fed patients or administered oral medications • Discarded sharps (appropriately) • Cleaned patient room or ward Living in same house as a patient with EVD but no direct contact with their body fluids • Moved/ transported patients
Background interventions (Standard of care)	Continue with normal duties (no work exclusion)
Intervention	Continue with normal duties (no work exclusion)
Comparator(s)	Exclude from work for 21 days
Outcome	Infection with Ebola or Marburg virus, *health-care associated transmission of Ebola* **Indirect evidence:** Lassa fever
Potential effect modifiers	Impact of vaccination status on post exposure actions *Community exposures during exclusion period, type of exposure, vaccination*

Appendix 3. GRADE Assessment (High Risk Exposures)

Number of studies	*Study Design*	*Risk of Bias*[a]	*Inconsistency*	*Indirectness*	*Imprecision*	*Other Considerations*	*Quality*
Incidence of EVD							
Washed a cadaver [No comparator]							
1[1]	[Cross-sectional]	Serious[b]	No serious[c]	Serious[d]	Serious[e]	None	⊕◯◯◯ Very low
Performed\assisted in cesarean [No comparator]							
1[2]	[Cross-sectional	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Placed urinary catheter [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Placed intravenous line [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Blood draw [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Discontinued intravenous line [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
High-risk contact [No comparator]							
1[3]	[Cohort]	Not Serious[h]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
High perceived risk of Ebola infection [No comparator]							
1[6]	[RCT]	Serious[i]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low

d. Individual quality assessment of studies was completed using the ROBINS-I scale for observational studies. Scores from 7-9 were considered to be high quality (low risk of bias), scores of 4-6 of moderate quality (moderate risk of bias) and scores of 0-3 of low quality (high risk of bias).
e. 5/9 on NOS; downrated for lack of controls, no reporting on non-response rate.
f. No inconsistency as only one study evaluated.

g. Downrated by 1 for failure to provide information on PICO intervention of work exclusion for 21 days.
h. Downrated by 1 as CI crosses null + appreciable benefit or harm.
i. 6/9 on NOS; downrated for lack of non-exposed cohort, failure to adjust for key confounders.
j. Downrated by 2 as very few or no events, and no relative effects reported.
k. 7/9 on NOS; downrated for failure to adjust for confounders.
l. Some concerns of risk of bias assessed using Cochrane ROB-2.

Appendix 4. GRADE Assessment (Low or Medium Risk Exposures)

Number of studies	*Study Design*	*Risk of Bias*[a]	*Inconsistency*	*Indirectness*	*Imprecision*	*Other Considerations*	*Quality*
Incidence of EVD							
Been in the patient's room [No comparator]							
1[1]	[Cross-sectional]	Serious[b]	No serious[c]	Serious[d]	Serious[e]	None	⊕◯◯◯ Very low
Performed examinations (clinical or laboratory) [No comparator]							
1[1]	[Cross-sectional	Serious[b]	No serious[c]	Serious[d]	Serious[e]	None	⊕◯◯◯ Very low
Given food to a patient [No comparator]							
1[1]	[Cross-sectional]	Serious[b]	No serious[c]	Serious[d]	Serious[e]	None	⊕◯◯◯ Very low
Conversed with a patient [No comparator]							
1[1]	[Cross-sectional]	Serious[b]	No serious[c]	Serious[d]	Serious[e]	None	⊕◯◯◯ Very low
Washed the patient's clothes [No comparator]							
1[1]	[Cross-sectional]	Serious[b]	No serious[c]	Serious[d]	Serious[e]	None	⊕◯◯◯ Very low
Had contact with patient's bodily fluids [No comparator]							
1[1]	[Cross-sectional]	Serious[b]	No serious[c]	Serious[d]	Serious[e]	None	⊕◯◯◯ Very low
Shared ward/latrine [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Took vital signs [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Cleaned linens [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Cleaned body fluids [No comparator]							

Number of studies	*Study Design*	*Risk of Bias*[a]	*Inconsistency*	*Indirectness*	*Imprecision*	*Other Considerations*	*Quality*
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Cleaned body fluids [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Cleaned surfaces: floor, walls, bed [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Cleaned surgical instruments [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Moved patient [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Gave intravenous medications [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Gave intramuscular medications [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Changed surgical site dressing [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
General touching patient [No comparator]							
1[2]	[Cross-sectional]	Serious[f]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Non-high-risk contact [No comparator]							
1[3]	[Cohort]	Not Serious[h]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Direct contact with patients [No comparator]							

Number of studies	*Study Design*	*Risk of Bias*[a]	*Inconsistency*	*Indirectness*	*Imprecision*	*Other Considerations*	*Quality*
2[45]	[Cross-sectional]	Serious[i]	No serious[j]	Serious[d]	Serious[k]	None	⊕◯◯◯ Very low
Indirect contact with patients [No comparator]							
2[45]	[Cross-sectional]	Serious[i]	No serious[j]	Serious[d]	Serious[k]	None	⊕◯◯◯ Very low
Limited contact with patients [No comparator]							
1[5]	[Cross-sectional]	Very Serious[l]	No serious[c]	Serious[d]	Serious[k]	None	⊕◯◯◯ Very low
Average perceived risk of Ebola infection [No comparator]							
1[6]	[RCT]	Serious[m]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low
Low perceived risk of Ebola infection [No comparator]							
1[6]	[RCT]	Serious[m]	No serious[c]	Serious[d]	Very Serious[g]	None	⊕◯◯◯ Very low

a. Individual quality assessment of studies was completed using the ROBINS-I scale for observational studies. Scores from 7-9 were considered to be high quality (low risk of bias), scores of 4-6 of moderate quality (moderate risk of bias) and scores of 0-3 of low quality (high risk of bias).
b. 5/9 on NOS; downrated for lack of controls, no reporting on non-response rate.
c. No inconsistency as only one study evaluated.
d. Downrated by 1 for failure to provide information on PICO intervention of work exclusion for 21 days.
e. Downrated by 1 as CI crosses null + appreciable benefit or harm.
f. 6/9 on NOS; downrated for lack of non-exposed cohort, failure to adjust for key confounders.
g. Downrated by 2 as very few or no events and no relative effects reported.
h. 7/9 on NOS; downrated for failure to adjust for confounders.
i. Both studies rated "serious" to "very serious" risk of bias on NOS.
j. No inconsistency; rates are similar across both studies.
k. Downrated by 1 due to small sample size; unable to evaluate relative effects.
l. 3/9 on NOS; Downrated for lack of controls, failure to adjust for confounders and no reporting on non-response rate.
m. Some concerns of risk of bias assessed using Cochrane ROB-2.