

**Appendix 1**

## Literature Search Strategy

1 <sup>st</sup> search:	2 <sup>nd</sup> search	3 <sup>rd</sup> search
Limits:	Limits:	Limits:
· Title/abstract	· Title/abstract	· Title/abstract
· 2007+	· 2007+	· 2007+
combined with OR	combined with OR	combined with OR
· exercise	· disaster*	· emergency response
· scenario	· IHR	· public health preparedness and response
· simulation	· terrorism	· emergency management
· simulation training	· bioterrorism	· emergency preparedness
· drill	· mass casualty	· public health practice
· command post	· emergency	· capacity building
	· pandemic	· disaster medicine
	· epidemic*	· disaster planning
	· disaster*	· health security
	· natural disaster*	· health system strengthening
	· disease outbreak	· health system resilience
	· influenza	· contingency
	· ebola	· Disaster management
		· disaster preparedness
		· disaster response

## Appendix 2

### Institutions Reviewed

<b><u>Institutions identified by experts:</u></b>	<b><u>Institutions identified from Academic literature:</u></b>
World Health Organization (WHO)	Institute of medicine forum on medical and public health preparedness for catastrophic events
Public Health England	National centre for study of preparedness and catastrophic events
Centres for Disease Control and Prevention (CDC)	Department of homeland security exercise and evaluation programme (HSEEP)
European Centre for Disease Control (ECDC)	Office of assistant secretary for preparedness and response (ASPR)
Federal Emergency Management Association (FEMA)	Health Canada
European Civil Protection and Humanitarian Aid Operations (ECHO)	European Network for Infectious Diseases
Sante Publique France	Global Health Security Initiative
	New York Institute for All Hazard Preparation
	Chemical, Biological, Radiological, Nuclear and Explosives Research and Technology Initiative
	California Department of Public Health
	Preparedness and emergency response learning centres: University of Alabam University of Arizona University of South Florida University of Iowa University of Illinois Harvard University Johns Hopkins Bloomberg University of Minnesota University of Albany Columbia University University of Oklahoma University of North Carolina Texas A&M University University of Washington

### Appendix 3

Materials included in Health System Building Block Analysis

	<b>Document name</b>	<b>Identified organisational links</b>
1	Hospital surge capacity exercise	Emergency Preparedness & Response Exercise Programme (Harvard School of Public Health)
2	Addressing the gaps in preparation for quarantine	New York Institute for All Hazard Preparedness and the New York City Department of Health and Mental Hygiene's Healthcare Emergency Preparedness Program
3	Assessing and Improving Hospital Mass-Casualty Preparedness: A No-Notice Exercise	Office of the Assistant Secretary for Preparedness and Response
4	Disaster Olympix: a unique nursing emergency preparedness exercise	US Department of Health and Human Services Healthcare Facilities Emergency Care Partnership Programme
5	Emergency response: lessons learned during a community hospital's in situ fire simulation	No organisation identified
6	Personal protective equipment in an influenza pandemic: a UK simulation exercise	No organisation identified
7	AHEPP Medical Surge TTX Template	Association of Healthcare Emergency Preparedness Professionals
8	Hazardous material exercise tool	Homeland Security Exercise and Evaluation Programme
9	Ohio Central Region Hospital Evacuation and Shelter-in-Place Tabletop Exercise.	Office of the Assistant Secretary for Preparedness and Response; TRACIE
10	Tabletop exercise situation manual for earthquake exercise designed to test surge and communication	Homeland Security Exercise and Evaluation Programme
11	Tornado tabletop exercise template	Georgia Health Care Association Emergency Preparedness Committee
12	Simulation of a hospital disaster plan: a virtual, live exercise.	No organisation identified
13	Waterworks, a full-scale chemical exposure exercise: interrogating pediatric critical care surge capacity in an inner-city tertiary care medical center	Homeland Security Exercise and Evaluation Programme
14	Business continuity	NHS England
15	Midsummers nightmares situation manual	Homeland Security Exercise and Evaluation Programme

16	Emergency preparedness in the 21st century: training and preparation modules in virtual environments	No organisation identified
17	GHSI Emergency radionuclide bioassay laboratory network: summary of a recent exercise	No organisation identified
18	Introduction of the Republic of Korea–the United States of America's Joint Exercise Against Biothreats in 2013: Able Response 13	No organisation identified
19	page with links to multiple ebola exercises (field and drill)	National Ebola Training and Education Centre
20	GHSI Emergency radionuclide bioassay laboratory network – Summary of the second exercise	No organisation identified
21	Radiological/Nuclear Human Monitoring Tabletop Exercise: Recommendations and Lessons Identified	
22	Republic of Senegal Disaster Preparedness and Response Exercise: Lessons Learned and Progress Toward Key Goals	
23	Simulation-assisted burn disaster planning	Centre for Teaching and Research in Disaster Medicine, Sweden
24	Clade X	Johns Hopkins Centre for Health Security
25	Dark winter`	Johns Hopkins Centre for Health Security
26	Polio outbreak simulation exercise	WHO Europe
27	WHO Core capacity workbook	WHO HQ
28	Risk communication : Introduction to exercises	WHO HQ
29	Scripted Surge Pharmacy Pandemic Exercise: Testing Vaccine Administration and Antiviral Dispensing	<a href="#">Centre for Disease Control and Prevention &amp; National Association of County and City Health Officials</a>
30	Emergency preparedness toolkit for primary care providers	Morehouse School of Medicine Center for Community Health and Service Learning, Johns Hoskins PACER Programme, US Dept of Homeland Security and the National Center for Primary Care
31	Action, not talk: a simulation of risk communication during the first hours of a pandemic	University of Georgia Center for Health and Risk & Centres for Disease Control and Prevention
32	Addressing Children's Needs in Disasters: A Regional Pediatric Tabletop Exercise	American Academy of Paediatrics and the Centres for Disease Control & Prevention
33	Exercise Maritime Response (EXMR): lessons learned for population monitoring and communications.	No organisation acknowledged
34	Field exercises are useful for improving public health emergency responses.	Population Health Unit, NSW
35	Hospital emergency preparedness: Push-POD operation and pharmacists as immunizers	No organisation acknowledged

36	Just send them all to a burn centre': managing burn resources in a mass casualty incident.	Homeland Security Exercise and Evaluation Programme
37	Just-in-time training of dental responders in a simulated pandemic immunization response exercise.	DuPage County Health Department, Illinois
38	Medical Surge Capacity in Atlanta-Area Hospitals in Response to Tanker Truck Chemical Releases	Wheaton, Illinois.
39	Preparing for a Foreign Animal Disease Outbreak Using a Novel Tabletop Exercise.	Michigan Department of Agriculture and Rural Development, USDA APHIS, Forsman Farms, Inc. and the University of Minnesota
40	Promoting community preparedness: lessons learned from the implementation of a chemical disaster tabletop exercise	Agriculture and Rural Development
41	Promoting regional disaster preparedness among rural hospitals	Rural and Community Health Institute, Texas A&M University Health Science Centre
42	Ready or not: analysis of a no-notice mass vaccination field response in Philadelphia.	the Public Health Preparedness Program, Philadelphia Dept of Health
43	Sarin exposure: a simulation case scenario.	No organisation acknowledged
44	Southeastern Center for Emerging Biologic Threats tabletop exercise: foodborne toxoplasmosis outbreak on college campuses	the Southeastern Center for Emerging Biologic Threats
45	The planning, execution, and evaluation of a mass prophylaxis full-scale exercise in cook county, IL	Homeland Security Exercise and Evaluation Programme
46	California dept of public health-scenarios	California Department of Public Health
47	D2.2 Reference set of scenarios	EUs 7th Framework Programme & Norwegian Defence Research Establishment
48	Situation Manual (SitMan): Long Term Care Facility Shelter-In-Place/ Evacuation Tabletop Exercise.	Office of the Assistance Secretary for Preparedness and Response
49	A test of syndromic surveillance using a severe acute respiratory syndrome model	No organisation acknowledged
50	<i>Exercise Paton: A simulation exercise to test New South Wales emergency departments' response to pandemic influenza</i>	New South Wales Department of Health
51	One Health:Operationalizing One Health in the Arctic	Indigenous and Northern Affairs, Canada, US Department of State, US Centres for Disease Control and Prevention, Aleutian-Pribilof Islands Association

**Appendix 4**

Breakdown of materials included in functional review (n=8)

<b>Title</b>	<b>Source</b>	<b>Exercise type</b>	<b>Level</b>
Eastwood K et al. Field exercises are useful for improving public health emergency responses. Western Pacific Surveillance and Response Journal. 2010	Journal Article	Field exercise	Regional
Kilianski A. et al. The planning, execution, and evaluation of a mass prophylaxis full-scale exercise in cook county, IL. Biosecur Bioterror. 2014	Journal Article	Field exercise	Regional
Shah, VS, et al. Waterworks, a full-scale chemical exposure exercise: interrogating pediatric critical care surge capacity in an inner-city tertiary care medical center. Prehosp Disaster Med. 2014	Journal Article	Field exercise	Facility
Polio outbreak simulation exercise. How to test national preparedness plans using the POSE model. World Health Organization Regional Office for Europe. 2015	Guidance Materials	Tabletop	National
Kim, SS et al. Introduction of the Republic of Korea–the United States of America's Joint Exercise Against Biothreats in 2013: Able Response 13. Osong Public Health and Research Perspectives. 2013	Journal Article	Field exercise	International
Eason, MP. Sarin exposure: a simulation case scenario. South Med J. 2013	Journal Article	Field exercise	Regional
Moorehouse School of Medicine. Emergency preparedness toolkit for primary care providers: hurricane disaster scenario TTX.	Guidance Materials	Tabletop	Primary Care
National Ebola Training and Education Centre. Ebola drill, functional and full scale exercise template. 2018	Guidance Materials	Field exercise	Facility