Online Supplementary Document

Bou-Karroum et al. Health Care Workers in the setting of the "Arab Spring": a scoping review for the Lancet-AUB Commission on Syria

J Glob Health 2018;8:020408

Appendix S1: Search strategy

EMBASE

Database: Embase <1980 to 2017 Week 02>

Search Strategy:

- 1 exp health care personnel/ (1475167)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (156278)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (970010)
- 4 (birth adj attendant*).tw. (1736)
- 5 ((lab or laboratory) adj technician*).tw. (1660)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (40861)
- 7 (human adj resource*).tw. (8565)
- 8 or/1-7 (1941738)
- 9 bahrain/ or (bahrain or bahraini or bahrainis).tw. (1560)
- 10 8 and 9 (319)
- 11 limit 10 to yr="2011 -Current" (165)

Database: Embase <1996 to 2017 January 11>

Search Strategy:

- 1 exp health care personnel/ (1282916)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (136157)

- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (720303)
- 4 (birth adj attendant*).tw. (1453)
- 5 ((lab or laboratory) adj technician*).tw. (1265)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (32729)
- 7 (human adj resource*).tw. (7450)
- 8 or/1-7 (1556051)
- 9 egypt/ or (egypt or egyptians or egyptian).tw. (20787)
- 10 8 and 9 (1877)
- 11 limit 10 to yr="2011 -Current" (1198)

Database: Embase <1980 to 2017 Week 02>

Search Strategy:

- 1 exp health care personnel/ (1475167)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (156278)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (970010)
- 4 (birth adj attendant*).tw. (1736)
- 5 ((lab or laboratory) adj technician*).tw. (1660)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (40861)
- 7 (human adj resource*).tw. (8565)
- 8 or/1-7 (1941738)
- 9 Iraq/ or (iraq or iraqi or iraqis).tw. (10016)
- 10 8 and 9 (1477)
- 11 limit 10 to yr="2003 -Current" (1319)

Database: Embase <1980 to 2017 Week 02>

Search Strategy:

- 1 exp health care personnel/ (1475167)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (156278)

- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (970010)
- 4 (birth adj attendant*).tw. (1736)
- 5 ((lab or laboratory) adj technician*).tw. (1660)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (40861)
- 7 (human adj resource*).tw. (8565)
- 8 or/1-7 (1941738)
- 9 libya/ or (libya or libyens or libyen).tw. (1712)
- 10 8 and 9 (221)
- 11 limit 10 to yr="2011 -Current" (100)

Database: Embase <1980 to 2017 Week 02>

Search Strategy:

- 1 exp health care personnel/ (1475167)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (156278)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (970010)
- 4 (birth adj attendant*).tw. (1736)
- 5 ((lab or laboratory) adj technician*).tw. (1660)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (40861)
- 7 (human adj resource*).tw. (8565)
- 8 or/1-7 (1941738)
- 9 syria/ or (syria or syrians or syrian).tw. (11628)
- 10 9 not (syrian adj2 hamster*).mp. (2769)
- 11 8 and 10 (370)
- 12 limit 11 to yr="2011 -Current" (259)

Database: Embase <1980 to 2017 Week 02>

Search Strategy:

- 1 exp health care personnel/ (1475167)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (156278)

- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (970010)
- 4 (birth adj attendant*).tw. (1736)
- 5 ((lab or laboratory) adj technician*).tw. (1660)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (40861)
- 7 (human adj resource*).tw. (8565)
- 8 or/1-7 (1941738)
- 9 Tunisia/ or (tunisia or tunisians or tunisian).tw. (11828)
- 10 8 and 9 (690)
- 11 limit 10 to yr="2011 -Current" (380)

Database: Embase <1980 to 2017 Week 02>

Search Strategy:

- 1 exp health care personnel/ (1475167)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (156278)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (970010)
- 4 (birth adj attendant*).tw. (1736)
- 5 ((lab or laboratory) adj technician*).tw. (1660)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (40861)
- 7 (human adj resource*).tw. (8565)
- 8 or/1-7 (1941738)
- 9 yemen/ or (yemen or yemenis or yemeni).tw. (2124)
- 10 8 and 9 (230)
- 11 limit 10 to yr="2011 -Current" (115)

Medline

Database: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

- 1 health manpower/ or exp health personnel/ (491066)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (139545)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (886047)
- 4 (birth adj attendant*).tw. (2078)
- 5 ((lab or laboratory) adj technician*).tw. (1379)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (36844)
- 7 (human adj resource*).tw. (8192)
- 8 or/1-7 (1280119)
- 9 Bahrain/ or (Bahrain or bahraini or Bahrianis).tw. (890)
- 10 8 and 9 (193)
- 11 limit 10 to yr="2011 -Current" (89)

Database: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

- 1 health manpower/ or exp health personnel/ (491066)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (139545)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (886047)
- 4 (birth adj attendant*).tw. (2078)
- 5 ((lab or laboratory) adj technician*).tw. (1379)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (36844)
- 7 (human adj resource*).tw. (8192)
- 8 or/1-7 (1280119)
- 9 egypt/ or (egypt or egyptians or egyptian).tw. (22084)

- 10 8 and 9 (1406)
- 11 limit 10 to yr="2011 -Current" (478)

Database: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

- 1 health manpower/ or exp health personnel/ (491066)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (139545)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (886047)
- 4 (birth adj attendant*).tw. (2078)
- 5 ((lab or laboratory) adj technician*).tw. (1379)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (36844)
- 7 (human adj resource*).tw. (8192)
- 8 or/1-7 (1280119)
- 9 Iraq War, 2003-2011/ or Iraq/ (6913)
- 10 Iraq/ or (iraq or iraqi or iraqis).mp. (9872)
- 11 9 or 10 (9872)
- 12 8 and 11 (1062)
- 13 limit 12 to yr="2003 -Current" (879)

Database: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

- 1 health manpower/ or exp health personnel/ (491066)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (139545)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (886047)
- 4 (birth adj attendant*).tw. (2078)
- 5 ((lab or laboratory) adj technician*).tw. (1379)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (36844)
- 7 (human adj resource*).tw. (8192)
- 8 or/1-7 (1280119)

- 9 libya/ or (libya or libyan or libyans).tw. (1733)
- 10 8 and 9 (166)
- 11 limit 10 to yr="2011 -Current" (53)

Database: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

- 1 health manpower/ or exp health personnel/ (491066)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (139545)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (886047)
- 4 (birth adj attendant*).tw. (2078)
- 5 ((lab or laboratory) adj technician*).tw. (1379)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (36844)
- 7 (human adj resource*).tw. (8192)
- 8 or/1-7 (1280119)
- 9 syria/ or (syria or syrians or syrian).mp. (12006)
- 10 9 not (syrian adj2 hamster*).mp. (2649)
- 11 8 and 10 (282)
- 12 limit 11 to yr="2011 -Current" (167)

Database: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

- 1 health manpower/ or exp health personnel/ (491066)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (139545)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (886047)
- 4 (birth adj attendant*).tw. (2078)
- 5 ((lab or laboratory) adj technician*).tw. (1379)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (36844)
- 7 (human adj resource*).tw. (8192)

- 8 or/1-7 (1280119)
- 9 Tunisia/ or (Tunisia or Tunisian or Tunisians).tw. (9953)
- 10 8 and 9 (401)
- 11 limit 10 to yr="2011 -Current" (142)

Database: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) <1946 to Present>

Search Strategy:

- 1 health manpower/ or exp health personnel/ (491066)
- 2 ((health or healthcare or medical) adj2 (worker* or professional* or personnel or manpower or workforce)).tw. (139545)
- 3 (doctor* or nurse or nurses or nursing or physician* or midwife or midwives or midwifery or paramedic* or medic or medics or pharmacist*).tw. (886047)
- 4 (birth adj attendant*).tw. (2078)
- 5 ((lab or laboratory) adj technician*).tw. (1379)
- 6 (medical adj (resident or residents or graduate* or student*)).tw. (36844)
- 7 (human adj resource*).tw. (8192)
- 8 or/1-7 (1280119)
- 9 Yemen/ or (Yemen or Yemeni or Yemenis).tw. (2005)
- 10 8 and 9 (168)
- 11 limit 10 to yr="2011 -Current" (56)

PubMed

Search	Query	Items found
#38	Search #14 AND #36 Filters: Publication date from 2011/01/01 to 2017/12/31	81
#37	Search #14 AND #36	200
#36	Search "bahrain"[MeSH Terms] OR "bahrain"[tw] OR "bahraini" [tw] OR "bahrainis" [tw]	841
#14	Search #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #10 OR #13	1450762
#13	Search "physicians" [MeSH Terms] OR "physicians" [tw] OR "doctor" [tw] OR ("physicians" [MeSH Terms] OR "physicians" [tw] OR "doctors" [tw]) OR ("nurses" [MeSH Terms] OR "nurses" [tw] OR "nurses" [tw] OR "nursing" [tw]) OR ("nurses" [MeSH Terms] OR "nurses" [tw]) OR ("physicians" [MeSH Terms] OR "physicians" [tw] OR "physicians" [MeSH Terms] OR "physicians" [tw]) OR ("midwifery" [MeSH Terms] OR "midwifery" [tw] OR "midwife" [tw]) OR ("midwifery" [MeSH Terms] OR "midwifery" [tw]) OR "midwifery" [tw]) OR ("midwifery" [MeSH Terms] OR "midwifery" [tw]) OR ("emergency medical technicians" [MeSH Terms] OR ("emergency" [tw]) OR ("emergency medical technicians" [tw]) OR "emergency medical technicians" [tw] OR "allied health personnel" [MeSH Terms] OR ("allied" [tw] AND "health" [tw] AND "personnel" [tw]) OR "allied health personnel" [tw]) OR ("allied health personnel" [tw]) OR ("allied health personnel" [tw]) OR ("pharmacists" [MeSH Terms] OR "pharmacists" [tw] OR "pharmacists" [MeSH Terms] OR "pharmacists" [tw] OR "pharmacists" [MeSH Terms] OR "pharmacists" [tw] OR medic [tw] OR medics [tw])	1202459
#8	Search lab technician [tw] OR lab technicians [tw] OR laboratory technician [tw] OR laboratory technicians [tw]	1266
#10	Search medical resident[tw] OR medical residents[tw] OR medical graduates[tw] OR medical students[tw] OR medical students[tw]	46762
#7	Search "health services needs and demand"[MeSH Terms]	53722
#6	Search "health manpower"[MeSH Terms]	11792
#5	Search "health personnel"[MeSH Terms]	429668

#4	Search health worker [tw] OR health workers [tw] OR healthcare worker [tw] OR healthcare workers [tw] OR medical worker [tw] OR medical workers [tw] OR health professional [tw] OR health professionals [tw] OR healthcare	236903
	professional [tw] OR healthcare professionals [tw] OR medical professional [tw] OR medical professionals [tw] OR health personnel [tw] OR healthcare personnel [tw] OR medical personnel [tw] OR health manpower [tw] OR healthcare manpower [tw] OR medical manpower [tw] OR health workforce [tw] OR healthcare workforce [tw] or medical workforce [tw]	
#3	Search human resource [tw] OR human resources [tw]	10366

CENTRAL

Search Name: Bahrain

Last Saved: 02/02/2017 10:56:37.043

Description:

ID Search

#1 worker or professional or personnel or manpower or workforce:ti,ab,kw and health or healthcare or medical:ti,ab,kw (Word variations have been searched)

#2 doctor or nurse or nursing or physician or midwife or midwives or midwifery or paramedic or medic or medics or pharmacist:ti,ab,kw (Word variations have been searched)

#3 birth:ti,ab,kw and "attendant":ti,ab,kw (Word variations have been searched)

#4 lab or laboratory:ti,ab,kw and "technician":ti,ab,kw (Word variations have been searched)

#5 medical:ti,ab,kw and resident or graduate or student:ti,ab,kw (Word variations have been searched)

#6 human:ti,ab,kw and "resource":ti,ab,kw (Word variations have been searched)

#7 #1 or #2 or #3 or #4 or #5 or #6

#8 "Bahrain":ti,ab,kw or "Bahraini":ti,ab,kw or bahrainis:ti,ab,kw (Word variations have been searched)

#9 #7 and #8

Search Name: Egypt

Last Saved: 02/02/2017 10:22:34.963

Description:

ID Search

#1 "Egypt":ti,ab,kw or "Egyptian":ti,ab,kw or egyptians:ti,ab,kw (Word variations have been searched)

#2 worker or professional or personnel or manpower or workforce:ti,ab,kw and health or healthcare or medical:ti,ab,kw (Word variations have been searched)

doctor or nurse or nursing or physician or midwife or midwives or midwifery or paramedic or medic or medics or pharmacist:ti,ab,kw (Word variations have been searched)

#4 birth:ti,ab,kw and "attendant":ti,ab,kw (Word variations have been searched)

#5 lab or laboratory:ti,ab,kw and "technician":ti,ab,kw (Word variations have been searched)

#6 medical:ti,ab,kw and resident or graduate or student:ti,ab,kw (Word variations have been searched)

- #7 human:ti,ab,kw and "resource":ti,ab,kw (Word variations have been searched)
- #8 #2 or #3 or #4 or #5 or #6 or #7
- #9 #1 and #8 Publication Year from 2011 to 2017, in Cochrane Reviews (Reviews and Protocols), Other Reviews, Trials, Technology Assessments and Economic Evaluations

Search Name: Syria

Last Saved: 02/02/2017 11:23:47.432

Description:

- ID Search
- #1 worker or professional or personnel or manpower or workforce:ti,ab,kw and health or healthcare or medical:ti,ab,kw (Word variations have been searched)
- #2 doctor or nurse or nursing or physician or midwife or midwives or midwifery or paramedic or medic or medics or pharmacist:ti,ab,kw (Word variations have been searched)
- #3 birth:ti,ab,kw and "attendant":ti,ab,kw (Word variations have been searched)
- #4 lab or laboratory:ti,ab,kw and "technician":ti,ab,kw (Word variations have been searched)
- #5 medical:ti,ab,kw and resident or graduate or student:ti,ab,kw (Word variations have been searched)
- #6 human:ti,ab,kw and "resource":ti,ab,kw (Word variations have been searched)
- #7 #1 or #2 or #3 or #4 or #5 or #6
- #8 "Syria":ti,ab,kw or "Syrian":ti,ab,kw or syrians:ti,ab,kw (Word variations have been searched)
- #9 #7 and #8 Publication Year from 2011 to 2017, in Cochrane Reviews (Reviews and Protocols), Other Reviews, Trials, Technology Assessments and Economic Evaluations

Search Name: Iraq

02/02/2017 11:06:10.052

Description:

Last Saved:

- ID Search
- #1 worker or professional or personnel or manpower or workforce:ti,ab,kw and health or healthcare or medical:ti,ab,kw (Word variations have been searched)
- #2 doctor or nurse or nursing or physician or midwife or midwives or midwifery or paramedic or medic or medics or pharmacist:ti,ab,kw (Word variations have been searched)
- #3 birth:ti,ab,kw and "attendant":ti,ab,kw (Word variations have been searched)
- #4 lab or laboratory:ti,ab,kw and "technician":ti,ab,kw (Word variations have been searched)

- #5 medical:ti,ab,kw and resident or graduate or student:ti,ab,kw (Word variations have been searched)
- #6 human:ti,ab,kw and "resource":ti,ab,kw (Word variations have been searched)
- #7 #1 or #2 or #3 or #4 or #5 or #6
- #8 "Iraq":ti,ab,kw or "Iraqi":ti,ab,kw or Iraqis:ti,ab,kw or "Iraqian":ti,ab,kw or iraqians (Word variations have been searched)
- #9 #7 and #8 Publication Year from 2003 to 2017, in Cochrane Reviews (Reviews and Protocols), Other Reviews, Trials, Technology Assessments and Economic Evaluations

Search Name: Yemen

Last Saved: 06/02/2017 09:45:52.526

Description:

ID Search

- #1 worker or professional or personnel or manpower or workforce:ti,ab,kw and health or healthcare or medical:ti,ab,kw (Word variations have been searched)
- #2 doctor or nurse or nursing or physician or midwife or midwives or midwifery or paramedic or medic or medics or pharmacist:ti,ab,kw (Word variations have been searched)
- #3 birth:ti,ab,kw and "attendant":ti,ab,kw (Word variations have been searched)
- #4 lab or laboratory:ti,ab,kw and "technician":ti,ab,kw (Word variations have been searched)
- #5 medical:ti,ab,kw and resident or graduate or student:ti,ab,kw (Word variations have been searched)
- #6 human:ti,ab,kw and "resource":ti,ab,kw (Word variations have been searched)
- #7 #1 or #2 or #3 or #4 or #5 or #6
- #8 "Yemen":ti,ab,kw or "Yemen Arab Republic":ti,ab,kw or "Yemeni":ti,ab,kw or yemenis:ti,ab,kw (Word variations have been searched)
- #9 #7 and #8 Publication Year from 2011 to 2017

Search Name: Libya

Last Saved: 02/02/2017 12:54:24.423

Description:

ID Search

#1 worker or professional or personnel or manpower or workforce:ti,ab,kw and health or healthcare or medical:ti,ab,kw (Word variations have been searched)

- #2 doctor or nurse or nursing or physician or midwife or midwives or midwifery or paramedic or medic or medics or pharmacist:ti,ab,kw (Word variations have been searched)
- #3 birth:ti,ab,kw and "attendant":ti,ab,kw (Word variations have been searched)
- #4 lab or laboratory:ti,ab,kw and "technician":ti,ab,kw (Word variations have been searched)
- #5 medical:ti,ab,kw and resident or graduate or student:ti,ab,kw (Word variations have been searched)
- #6 human:ti,ab,kw and "resource":ti,ab,kw (Word variations have been searched)
- #7 #1 or #2 or #3 or #4 or #5 or #6
- #8 "Libya":ti,ab,kw or "Libyan":ti,ab,kw or libyans:ti,ab,kw (Word variations have been searched)
- #9 #7 and #8 Publication Year from 2011 to 2017, in Cochrane Reviews (Reviews and Protocols), Other Reviews, Trials, Technology Assessments and Economic Evaluations.

Search Name: Tunisia

Last Saved: 02/02/2017 11:12:12.484

Description:

- ID Search
- #1 worker or professional or personnel or manpower or workforce:ti,ab,kw and health or healthcare or medical:ti,ab,kw (Word variations have been searched)
- #2 doctor or nurse or nursing or physician or midwife or midwives or midwifery or paramedic or medic or medics or pharmacist:ti,ab,kw (Word variations have been searched)
- #3 birth:ti,ab,kw and "attendant":ti,ab,kw (Word variations have been searched)
- #4 lab or laboratory:ti,ab,kw and "technician":ti,ab,kw (Word variations have been searched)
- #5 medical:ti,ab,kw and resident or graduate or student:ti,ab,kw (Word variations have been searched)
- #6 human:ti,ab,kw and "resource":ti,ab,kw (Word variations have been searched)
- #7 #1 or #2 or #3 or #4 or #5 or #6
- #8 "Tunisia":ti,ab,kw or "Tunisian":ti,ab,kw or Tunisians:ti,ab,kw (Word variations have been searched)
- #9 #7 and #8 Publication Year from 2011 to 2017, in Cochrane Reviews (Reviews and Protocols), Other Reviews, Trials, Technology Assessments and Economic Evaluations

WHO Global Health Library

Syria: 280

Syria* AND (instance: "ghl") AND (fulltext: ("1") AND mj: ("Refugees" OR "War" OR "Delivery of Health Care" OR "Syria" OR "Physicians" OR "Health Services Accessibility" OR "Public Health" OR "Arabs" OR "International Cooperation" OR "Wounds, Gunshot" OR "Human Rights Abuses" OR "Health Services Needs and Demand" OR "Violence" OR "Wounds and Injuries" OR "Health Services" OR "Islam" OR "Politics" OR "Health Status" OR "Terrorism" OR "Egypt" OR "Physician's Role" OR "Stress, Psychological" OR "Charities" OR "Civil Disorders" OR "Health Personnel" OR "Developing Countries" OR "Health Policy" OR "Students, Medical" OR "Emigration and Immigration" OR "Emigrants and Immigrants" OR "Maternal Health Services" OR "Medicine, Arabic" OR "Mental Disorders" OR "Primary Health Care" OR "Quality of Health Care" OR "Sarin" OR "Schools, Medical" OR "Stress Disorders, Post-Traumatic" OR "Transients and Migrants" OR "Universities" OR "Ethnic Groups" OR "Mental Health" OR "Health Surveys" OR "Cause of Death" OR "Health Planning" OR "Hospitals" OR "Mental Health Services" OR "Organization and Administration"))

AND (instance: "ghl") AND (instance: "ghl") AND (year_cluster: ("2015" OR "2013" OR "2014" OR "2016" OR "2012" OR "2011"))

Iraq: 2248

Iraq* AND (instance: "ghl") AND (fulltext: ("1") AND mj: ("Military Personnel" OR "Iraq War, 2003-2011" OR "Stress Disorders, Post-Traumatic" OR "Veterans" OR "War" OR "Wounds and Injuries" OR "Military Medicine" OR "Brain Injuries" OR "Combat Disorders") AND year_cluster: ("2011" OR "2010" OR "2008" OR "2009" OR "2003" OR "2005" OR "2007" OR "2004" OR "2006" OR "2012" OR "2013" OR "2014" OR "2015" OR "2016"))

Bahrain: 150

bahrain* AND (instance: "ghl") AND (year cluster: ("2011" OR "2012" OR "2015"))

Libya: 402

Libya* AND (instance: "ghl") AND (fulltext: ("1") AND year_cluster: ("2014" OR "2012" OR "2015" OR "2013" OR "2011" OR "2016"))

Yemen: 505

Yemen* AND (instance: "ghl") AND (fulltext: ("1") AND year_cluster: ("2014" OR "2015" OR "2012" OR "2013" OR "2016" OR "2011"))

Egypt: 109

Egypt* AND (instance: "ghl") AND (fulltext: ("1") AND mj: ("Health Knowledge, Attitudes, Practice" OR "Rural Health Services" OR "Islam" OR "Pharmacy Service, Hospital" OR "Prenatal Care" OR "Primary Health Care" OR "Students" OR "Students, Medical" OR "Healthcare Disparities" OR "Family Practice" OR "Public Health Surveillance" OR "Health Promotion" OR "Hospitalization" OR "Hospitals" OR "Maternal Health Services" OR "Nursing Staff, Hospital") AND year_cluster: ("2014" OR "2013" OR "2015" OR "2012"))

Tunisia: 14

Tunisia* AND (instance: "ghl") AND (fulltext: ("1") AND mj: ("Arabs") AND year_cluster: ("2012" OR "2013" OR "2014" OR "2015" OR "2011"))

Appendix S2: List of included studies

- 1. Abbara A, Orcutt M, Gabbar O. Syria's lost generation of doctors. Bmj. 2015;350:h3479. doi:10.1136/bmj.h3479
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