

# WHO Collaborating Centre for Public Health Education and Training, Imperial College London

## Annual Report 2019/2020



**WHO Collaborating Centre**  
**Public Health Education and Training**  
Imperial College London  
Faculty of Medicine  
School of Public Health  
Department of Primary Care & Public Health  
Reynolds Building, 3<sup>rd</sup> floor  
St. Dunstan's Road  
London W6 8RP  
United Kingdom  
T: 0044 (0)20 7594 8603  
E: [whocentre@imperial.ac.uk](mailto:whocentre@imperial.ac.uk)  
[www.imperialwhocc.org](http://www.imperialwhocc.org)

## **Activity 1**

### **Strengthening regional and national institutional capacities in public health and health systems**

Description: Strengthening health systems (WHO Report 2000) and developing Primary Care (WHO Report 2008) through sound financial methods (WHO Report 2010;2013) are priorities for the WHO and Member States. This activity is to support such development. In collaboration with WHO, the WHO CC will develop and deliver:

#### **1. Health Leadership and Management Training Course (one-week)**

The WHO will assist in the selection of participants from Member States.

The WHO CC is engaged in many activities that support the strengthening public health and health systems across the world.

### **General**

Our WHO CC has extensive experience on health system development both in research and practice. The Centre undertook many of these overlaps with other activities. Our extensive review of health systems worldwide has given us indepth knowledge and experience and we share this with many other countries. It has also enabled us to develop bespoke courses as well as educational modules. This year our work involved strengthening health systems to tackle NCD; health systems in fragile countries; how countries deal with displaced persons; environmental issues and health systems; and the use of technology, eHealth to improve performance of health systems and workforce and health system resilience and response to Covid-19 Pandemic

#### **19 June 2019 (ongoing)**

##### **Collaboration with the Public Health Department, Ministry of Public Health Qatar, Deloitte.**

The WHO CC worked closely to support the Deloitte Project in strengthening public health in Qatar. It was agreed the WHOCC would provide SMEs to support the project. In addition, the WHOCC Director provided support in the planning and delivery of the first International Public Health Conference (December 2019) as well as the writing and editing the 10 years achievement in public health report. The director delivered a keynote speech at the Conference.

#### **19 June 2019 (ongoing)**

##### **Collaboration with the Institute of Health Metric and Evalaution, Facuty of Medicine, University of Washington, Seattle, USA**

The collaboration continues through bilateral meetings, collaborative publications as well as leading on research topics. We are currently working in Maternal Mortality in Eastern Mediterranean Region of the WHO, looking at recent trends in 22 countries supported by systematic revelews.

**20 June 2019**

**Collaboration with Primary Care International**

CEO Julia Beart from Primary Care International visited the WHOCC, Department of Primary Care and Public Health, Imperial College London. A discussion ensued on collaboration and the WHO CC will work jointly to support countries across Europe, the Middle East and Africa through WHO Offices. There are many positive initiatives and innovations that countries could adopt. Discussion already started with WHO EMRO and WHO Europe on the best approaches to strengthen primary care, following the Covid-19 Pandemic. We will report on this in the next year Annual Report.

**11 July 2019 (ongoing)**

**WHO CC /ICL School of Public Health Collaboration with WHO Geneva**

In discussions with Professors Paul Aylin and Helen Ward the WHO CC explored the possible collaboration with the School of Public Health at Imperial College London and WHO Geneva. The SPH is keen to work closely with WHO. We discussed one of the projects (health emergencies training programme) that WHO could work closely with us to develop online programme taking into account our experience in Global MPH Project. Indeed, the Collaborative Project with WHO started in November 2019, with the first meeting held in London. This work is in support of the newly developed WHO Academy.

**27 July -- 02 Aug 2019**

**Advanced Leadership and Health Management Course, Geneva and London**

This full week course for senior executive of children's hospitals across China was organised jointly in both WHO and delivered both in Geneva and London. In Geneva the participants spent a full day at WHO HQs in lectures and discussions with WHO leaders including two Assistant Director Generals and later, a visit to the University Children's Hospital in Bern, Switzerland. Back in London the programme included a full day visit to Great Ormond Street Hospital (GOSH) for Children as well as interactive discussion groups and exercises on modern hospital organisation and management. Professor Rawaf and the WHOCC team gave different talks in various settings.

**1 SEP 2019 The MENA Health Policy Forum – Cairo, Egypt (ongoing)**

MENA's HPF mission is to contribute to effective, efficient, equitable and sustainable policies that improve health for the most disadvantaged in the MENA. Strong collaboration is in place to address common interest between WHOCC and The Forum. A joint paper was submitted to publication on sexual health service in primary care settings in the Regions. This paper was based on comprehensive study conducted across 14 countries in MENA region.

**23 Oct 2019**

**The Future Hospital: Hospital Presidents from Zhejiang China – a training course in London, UK**

The meeting was attended by 30 senior executives/chairs of large hospitals from across Zhejiang, China. This bespoke, 1-week course was organised by ICL with WHO CC participation and explored many elements of how to strengthen health systems of today to meet the ever changing and increasing population demands on health care. Strong primary will support the role of hospitals in focusing on more complex cases when the rest (over 80% are dealt with at PHC level).

The Director of the WHO CC gave two talks:

1. Evaluating quality in primary care
2. The patient experience and health leadership

**18-19 Nov 2019**

**Qatar Public Health Conference**

This is the first major public health conference organised by the Ministry of Public Health. WHO CC took part in the organisation of the conference. Professor Rawaf delivered a keynote speech on the first day of the conference.

**9-12 Dec 2019**

**The 18<sup>th</sup> Recent Advances in Hospital Management Conference – Cairo, Egypt**

This annual event is organised with the support of WHO CC. It is well attended and over 400 participants from the Arab World and beyond attended the 18<sup>th</sup> Conference. The focus of this conference was on technological advances serving patients and communities. The Director of the WHO CC gave two keynote lectures and chaired a panel session.

1. The British NHS: What models of care can we learn from 70 years of successful experience?
2. Technological Advances and Modern Hospitals providing better care.

**02 March 2020**

**Atlantic Council Meeting – Berlin, Germany**

The Meeting was organised by the Atlantic Council, Washington D.C. to discuss political, economic and health opportunities in the Middle East. Senior politicians and researchers attended the meeting from the United States, Iraq, Germany and the United Kingdom. The core of the current crisis in Iraq is rooted in corruption of the political elites and their parties with the illegal militias. We raised the discussion on the impact of these on the health of the population.

**22 April 2020**

**A virtual meeting with Their Excellencies the Ministers of Health of EMR and UN Regional Directors on COVID-19**

The COVID-19 meeting that was held by videoconference with their Excellencies took place on 2<sup>nd</sup> April 2020. It highlighted key actions needed to take in order to contain the spread of the virus. The meeting was held with each region's Minister of Health, the UN and the WHO



Regional Director to discuss actions needed to enable population to have access to better preventive and curative services when it comes to COVID-19. It highlighted the importance of ensuring continuity of care for patients needing access to health care services for acute and chronic illnesses other than COVID-19. Finally, it identified the requests made to their Excellencies the Ministers of Health regarding country-level key actions to engage other sectors to articulate what is referred to as a 'whole of government' and 'whole of society approach'. The meeting also included: Regional updates about COVID-19 by Regional Emergency Directors; comments by DG's Envoy on COVID-19; and open discussion and general comments. The WHO participation as a Member of the WHO EMRO Technical Advisory Committee for Covid-19.

### **23 April 2020**

#### **A virtual meeting Managing the COVID-19 Pandemic Crisis in MENA**

Focus was on the status of the pandemic and its containment in the Middle East and North Africa regions. Many senior colleagues from the Region attended and solutions were suggested to take forward with the WHO and MENA government. The WHO CC advised the meeting to look at the paper by the WHO CC team submitted and accepted by WHO EMRO Health Journal: <https://pubmed.ncbi.nlm.nih.gov/32538441/>

### **March –June 2020**

#### **Series of Joint Webinar on Covid-19 and its impact on health, systems, economy and social life**

The WHOCC staff actively engages and reaches out to the world in educational and learning activities. Many of our courses, which are designed on the basis of face-to-face learning and skills, were changed to online learning and virtual learning. The WHO CC also developed new innovative learning and skills courses considering the emerging public health challenges and the needs of the public. More than 25 webinars were carefully planned and delivered in association with WHO (EMRO and Geneva) and the work continues (ongoing).

In addition, WHO CC staff attended a large number of conferences globally on the topic since the WHO declared the Pandemic, through virtual links and took active part in radio and television interviews through many media outlets.

### **1 May 2020 – 31 May 2020**

#### **Training Crash courses**

During the period of lockdown the WHO CC team put an extraordinary effort in developing new courses to prepare public health workforce and equip them with skills needed to deal with the Pandemic. Among these courses were:

- Epidemiological surveillance for infectious diseases
- Acute event management
- Public Health Practical Conversion Course
- Advanced Leadership and Health Management Course (Modifying existing and popular course run by the WHO CC for years)
- Emergency Planning and Preparedness

- Public Health Analysis
- Disease Burden and Health Planning
- Outbreak exit strategy

The main aim of these is to support the response to life changes imposed by the COVID-19 pandemic and enhance the skills of public health workforce.

**04 June 2020**

### **Family Physicians and the COVID-19 Pandemic: the Way Forward**

A joint WHO Europe and WONCA Europe webinar open to family doctors and other PHC experts covered key areas of managing primary care during the COVID-19 pandemic. While many countries decided to exclude covid patients and focus on routine/essential services through virtual and telephone consultations, others accepted these patients without taking proper protective measures for staff and other patients. Discussions established clarity on the way forward and how to set up guidelines.

## **Activity 2**

### **Evaluation of Public Health and Health Systems**

Description: at the request of WHO HQ, our WHO CC is involved in evaluating public health system functions including public health around the world and conducting relevant research. Additionally, the WHO CC provides on-going training courses on health systems development including systematic evaluation.

#### **General**

This year we have been involved in projects looking at evaluation of health systems, primary care and public health functions. In preparation for and during the process of assessment and redesign, we have conducted quantitative research (systematic reviews), analysed data, and projected service needs. We also calculated the number of physicians and other health professionals needed. We also assessed the risk of doing nothing compared with advancing change.

**19-20 June 2019**

### **Collaboration with the Institute of Health Metric and Evaluation, University of Washington, Seattle, USA**

Professor Ali Mokdad, Chief Strategy Officer at the Institute of Health Metric and Evaluation (IHME) visited the Department of Primary Care and Public Health, Imperial College London and met over two days with the WHO CC Team.

The visit was focused on how to strengthen the collaboration between the Department of Primary Care and Public Health and its WHO CC with the IHME, Faculty of Medicine, University of Washington, Seattle, USA. The WHO CC proposed to undertake independent analysis on key topics such as diabetes, maternal deaths, and infertility. The collaboration continues through bilateral meetings, publication contributions as well as leading on research topics. We are currently working in Maternal Mortality in Eastern Mediterranean Region of the WHO, looking at recent trends in 22 countries supported by a systematic review.

**20 June 2019**

**Collaboration with Primary Care International**

The WHO CC started a collaboration with Primary Care International's (PCI) Chief Executive to discuss avenues of collaboration. This is an important collaborative work between the WHO CC and PCI with an emphasis on support to LMIC countries to strengthen health systems through primary health care. We are exploring educational activities, training courses and supporting institutional development and health leadership. We also started discussion with WHO EMRO on how to capitalise on the vast experience of PCI.

**26–29 June 2019**

**WONCA 24 Europe Conference – Bratislava, Slovakia**

At the 24<sup>th</sup> European Regional Meeting of the World Organisation of Family Physicians (WONCA), Professor Rawaf spoke and chaired a session on integration. The WHOCC worked with WONCA colleagues to strengthen primary care in Europe and across the globe.

**23-24 Sept 2019**

**The USA Iraqi Medical Scientific Association Annual Meeting, Azmir, Turkey**

These annual meetings are designed to gather medical scientists from around the world with connections to Iraq. It addresses wide range of clinical and public health issues the health system in Iraq is currently facing. Professor Rawaf spoke about current and future directions of the health system in Iraq.

**28 Oct 2019**

**WHO meeting on Health Governance – Cairo, Egypt**

This is the third meeting of the WHO EMRO on Health Governance. The meeting was attended by key regional players including WHO Geneva, WHO Europe and other UN agencies. Focus was on developing an action plan to strengthen health governance in member States both at institutional and clinical levels. The WHO CC highlighted some of the key in the long experience with clinical and corporate governance.

**20-22 Nov 2019**

**Public Health Review – Doha, Qatar**

The WHO CC supported a major review of the public health function in Qatar, led by Deloitte. The multifaceted project includes review of the laws, enhanced community engagement and restructuring the function based on current advances in public health. Professor Rawaf visited Qatar and held many meetings with the team over three days.

**26 Feb 2020**

**Inter-country retreat: integrating public health and primary health care services in the European Region**

Organised by WHO EURO for mainly Eastern European member states, this meeting discussed the best approach to improve the status of primary care and how to integrate public health

and primary care. The meeting was based on the work of the WHO CC commissioned by the WHO Europe on integration of Public Health and Primary Care and the report published in October 2018 and presented at Astana Conference on Primary Care. The work at that time was led by WHO EMRO and presented at Astana.

#### **April 2020**

##### **Imperial College London, WHO Collaborating Centre and WHO Iraq/ Ministry of Health Situational Assessment of the COVID-19 National Strategy**

In collaboration with the WHO Iraq Office and WHO EMRO, the Centre carried out an extensive exercise to assess the current status of COVID-19 in Iraq and its management including public health measures to protect population and reduce transmission, and treatment of critically ill Covid-19 patients. The Centre developed a comprehensive risk register based on a Situational Assessment of the COVID-19 National Strategy in the country. The assessment and register covered: governance, disease transmission, health service, public health measures, public acceptance, and economic support. Each area identified key measures and the risk of no or partial action. The assessment addressed the risks, implications, probability of happening, quality and costs, impact, and the risk score. Furthermore, mitigations, time scale and updates were recorded. This process generated important changes in the process of managing the pandemic in Iraq including governance (the role of the national committee, the creation of Supreme Advisory Committee on Covid-19); health service (zoning of hospital to reduce hospital infections, re-defining patient flows, the role of the private clinics and re-shaping primary care); transmission (strengthening public health measures, intensify the role of media, impose legal measures to respect public health laws and National Committee for Health and Safety chaired by Prime Minister); public acceptance (ensuring public engagements at all level); and economic support (this was not taken by government due to the economic situation in Iraq).

#### **20 May 2020**

##### **Exit Strategy and Easing of Covid Restrictions, UAE**

The shaping of a strategy for easing Covid-19 restrictions was discussed with Dr Jamal Al-Kaabi, the Undesecreratery for Health MoH UAE. The meeting was to assess the current situation in the UAE in relation to the Covid-19 Pandemic and what is the best exit strategy to return to some normality in the Emirate.

#### **15 June 2020**

##### **Health System Resilience WHO EMRO**

Folllowing the Covid Pandemic most of the health systems around the world were either overwhelmed, did not cope or did not show any resielence. We were approached by WHO EMRO to collaborate on work to assess how health system reselience could be improved. The work is in participation and collboration of colleagues from WHO EMRO, WHO Geneva, Oman and Egypt and the WHO CC. We are submitting a proposal for funding. Moreover, a health systems resilience project in collaboration with the Arab Public Health Association (ArPHA) was initiated in the last few months. Since the onset of the COVID-19 crisis on public health, managing the ever-increasing number of patients admitted to hospitals and ICU units while maintaining health services at the regular pace proved to be difficult in many parts of the world. The first stage of research aims to develop and validate an assessment tool for health system resilience. This tool will be valuable for measuring health system resilience in countries, help identify and find ways to minimize critical gaps in health systems and improve their performance during and after any kind of shock to the health system.



### **Activity 3**

#### **Development of national human resources for health capacities**

Description: Our WHO CC aims to support Member States in strengthening their national capacities, health workforce policy and plans, including public health leadership. The WHO CC also supports institutional capacity in evidence generation, orientation of education and training. Our programmes include training courses on human resource development (policy, planning, production, utilization, and service delivery); WHO CC also provides consultation, which enables hands-on practical support and technical assistance to Member States.

#### **General**

This year, we have focused on educational development to support member States in increasing their capacities in human resource supply. Our emphasis was re-focused on Covid-19 once cases were reported by WHO. These include creating new taught courses leading to certificates, diplomas, or master's degrees. We also worked on enhancing postgraduate medical training through structured programmes based on competencies. Some of these courses were listed and described in other parts of this report.

**15 July 2019**

#### **Kingdom of Saudi Arabia Healthcare Leadership Academy**

Discussions were held with the Business School at Imperial College on the project and the role of WHOCC. The Leadership Academy in Saudi Arabia is proposing to work with the business school on developing a practical clinical leadership and health management training course. The School is keen that the project is delivered jointly with WHO CC with their track record in health leadership training over many years. Professor Rawaf is the Clinical Director of the Project. In February 2020, The WHO CC Director visited the Academy in Riyadh and specific action points were agreed to enhance the role of the Academy and give opportunities, through the WHO CC, for trainees to have the opportunity of exploring the leadership role in highly performing systems such as the UK.

**10 Oct 2019**

#### **Draft framework for WHO Human Resources for Health (HRH) course and sample modules**

WHO CC is contributing to the development HRH course (both short and MSc). This is a major collaborative work across the globe lead by WHO Geneva. It is envisaged that these courses will either be commissioned by WHO, adopted by universities or both.

**14-17 Oct 2019**

#### **WHO 66th Regional Committee – Tehran, Iran**

At the invitation of WHO EMRO, the Director of the WHO CC attended and participated in the 66th Regional Committee meeting of WHO EMRO in Tehran, Iran. He also visited the Ministry of Health and gave a talk on the future of health service attended by the Deputy Minister, Deputies, and other senior managers. The visit provided an excellent opportunity to strengthen collaboration with colleagues and institutions in Iran.

**22 Jan 2020**

**Review of Proposed Community Engagement Survey, MoPH – Doha, Qatar**

Qualitative data review of a major survey based on interviews, focus groups, questionnaires for the three segments of the Qatari population: Qatari; non-Qatari long-term residents and non-Qatari short-term manual workers. The results of the survey will shape the best approaches from Ministry of Public Health to engage with the various elements of the Qatari's population.

**22 Jan 2020**

**Medical Practitioners Annual Appraisal System and Statutory Regulation of Medical Practitioners Iraq**

At the request of His Excellency (HE) Dr Jaffar Allawi, Iraqi Minister of Health and Environment, and in conjunction with the Iraqi WHO Office Representative (WR) Dr Adham Ismail, a proposal was commissioned for ICL WHO CC to review and address two interlinked topics:

1. An annual appraisal system to ensure the highest standards of practice and probity for registered medical practitioners (all grades); and
2. Further to necessary legislations set out Iraqi General Medical Council (IGMC) statutory guidelines to protect patients and regulate doctors.

The first step in this project was to contact the relevant professional bodies, written concepts papers and reviewed the experience of other countries. These were shared with Minister both in writing and through virtual meetings. The project is on hold at present time due to changes in priorities, where most the focus now is on Covid-19 Pandemic.

**05 Feb 2020**

**Collaboration with the Government of Mauritius**

The WHO CC has a well-established link with Mauritius in supporting the development of the MPH Programme, training of family physicians and other activities. The WHO CC received Anil Gayan QC in London. He is an eminent lawyer and politician from Mauritius for over 30 years. He has been Minister for Foreign Affairs, Minister for Health and most recently Minister for Tourism. Various issues were discussed with a focus on supporting the development of Medical Tourism Centre in Mauritius. The aim of the centre is to support the country in strengthening medical tourism through research and development and generate the evidence for policy makers.

**08 Feb 2020**

**The Development of the Public Health Academy: Saudi**

Following Professor Rawaf's visit to Riyadh, the WHO CC was commissioned by the Centres for Disease Control (CDC) of the Kingdom of Saudi Arabia to develop a new Public Health Academy. The role of this institution will take a full role in public health transformation in the Kingdom. Its aim will be to raise the standards of practice among public health practitioners and wider public health workforce (below specialists' level).

This one-year project will benchmark through review of five countries' approaches to develop public health workforce; setting the competencies level needed for each level of practitioners and the wider public health workforce; assess the current needs for training in the Kingdom; reach and interview to all stakeholders include public health service providers (many ministries), academic institutions, health council, health commission, and potential trainees. The work will include the development of the strategic directions, the financial plan, the marketing plan, the training strategy, governance, and operational plan among many

other work to ensure a sustainable development of the new academy. This is a pioneering work in the Region, and it will have great impact on the development and transformation of public health professionals in the Kingdom

#### **04 May 2020**

##### **Brazilian webinar - Resources and infrastructure for managing Covid-19**

The Webinar meeting we held discussed the situation in Brazil and looked at the best approach to deal with the worsening situation in the country. This was an excellent opportunity to obtain a first-hand knowledge of the magnitude of the problem and the challenges public health officials are facing. Some possible ways to handle the Pandemic were shared and discussed. It was reiterated that this is a new virus and new dynamic effecting every one and hence solution should be collective.

#### **06 June 2020**

##### **WHO consultation: the future of learning for public health**

The WHO CC is involved in this one of a series of meetings organised by Human Resource Development Department at WHO Geneva. Part of the work is to develop a WHO Global Learning Strategy. This will align with the WHO's Constitution, its values, and the organization's that implements the collective vision for global public health in all 194 Member States. The WHO CC has many innovative approaches to learning and skill development in public health to a wide spectrum of public health professionals to address current gaps and emerging issues.

#### **22-26 June 2020**

##### **Global Public Health Panel on OHL – invited panellist**

##### **Primary Care recovery post pandemic**

Since the start of the Pandemic the WHO CC approach to Covid was to deal with the immediate impact as well as project how the future will look like post Covid-19 Pandemic. We have had the chance to discuss and hold meetings with WHO EMRO, WONCO Europe and Academia on the shape of primary care. We have published a paper on the topic. (OHL) that will provide free CME access to our global community of 5 million healthcare professionals worldwide.

One session focused on key and pressing issues around Public Health and COVID-19. Professor Rawaf gave a talk on Primary Care recovery post pandemic and what is next, by Informa Markets, who hosted a mega virtual healthcare event titled Omnia Health Live. The presentation was an interview style led by Dr Atiya Mosam from South Africa.

<https://live.omnia-health.com/en/home.html>

#### **Activity 4**

##### **To support institutions in public health and primary care practice, research, innovation, and eLearning**

Description: Public health and primary care research is an important element in providing evidence for education, training, and practice. The WHO CC aims to enhance academic exchange in an effort to broaden and strengthen public health and primary care skills, knowledge and leadership. Upon the request of WHO, the WHO CC will:

1. Facilitate staff exchange from Ministries of Health to spend time in the WHO CC;
2. Conduct training course and fellowship programs for Academic institutions in Member States.

##### **General**

The WHO CC members provide world-class educational and training programme in public health and primary care. They are leading on innovative approaches and creativity in these courses. Due to the Pandemic many of the courses are moved to virtual learning. In doing so the WHO CC team invented many techniques to ensure that participants are fully engaged and play their roles in learning process. Creating small groups discussion virtually, increasing the number of exercises, spreading the training / learning programme over several weeks (one day every week) and adding homework.

#### **11 July 2019**

##### **School of Public Health Imperial (SPH) collaboration with WHO Geneva**

In discussions with Professors Paul Aylin and Helen Ward the WHO CC explored the possible collaboration with the SPH and WHO Geneva. The SPH is keen to work closely with WHO. We discussed one of the projects (health emergencies training programme) that WHO could work closely with us to develop online programme taking into account our experience in Global MPH Project. This will be one of the new WHO Academy. Subsequent meetings were held on 6<sup>th</sup> August and November 2019.

#### **14 Nov 2019**

##### **Skype with Teri and Agenes, WHO Geneva on Clinical Governance**

The WHO is leading on development and training in health governance in collaboration with WHO Geneva, WHO EMRO, WHO EUROPE and Royal College of Physicians Edinburgh. Part of the outcome of this is:

- The creation of Quality Governance jointly with the Royal College of Physicians Edinburgh
- The start of developing a new MSc Degree at Imperial on Health Governance
- Establishment of a research programme to explore best practices in health governance

This meeting was followed-up from the WHO meeting in Cairo on health Governance (28<sup>th</sup> Oct-2<sup>nd</sup> Nov Cairo).

## **12 March 2020**

### **Students Educational Visit**

Healthcare Management Students from Carinthia University of Applied Sciences, Feldkirchen, Austria visited the WHO CC and the Department of Primary Care and Public Health. Academic objectives were delivered at this study tour, supported by the WHO CC Team.

## **30 March 2020**

### **COVID-19 Technical Advisory Committee (TAC)**

The director of the WHO CC was invited by WHO EMRO to join the membership of Technical Advisory Committee for Covid-19. There are 11 other additional members from and outside the Region. The first meeting was held on 30 March 2020. The TAC received a report on the global and regional situation of COVID-19. An overview of the containment and mitigation methods being used in the region and identified the special considerations and constraints in fragile, conflict and vulnerable settings. EMRO adapted the global response plan to the region and is working with countries to develop country specific costed plans based on these plans. Given the evolving situation, this plan is currently being revised. The extensive support WHO has provided to countries (40+ technical documents), on-line training, missions and virtual technical advice and guidance, is more than welcomed. The communication team is monitoring rumours and misinformation and adapting messages accordingly. We also informed about the extensive efforts being done by the Dubai Hub that has shipped supplies to the region and beyond; and reported that WHO is working on ways to address market failures in PPEs. The TAC Members discussed the details of these and what is projected in the Region and how address some of the associated issues such provided services for non-Covid patients, imposing stronger measures to prevent transmission, looking at the social impacts, and protect the economy.

## **02 May 2020**

### **COVID-19 Research - Dr Sami Sahni Medical City Baghdad**

A draft of the research programme on the long term of Covid-19 in collaboration with Iraq (Prof Sami Sahni), Saudi Arabia (Dr Salih), Chelsea and Westminster (Dr Michael Pelly) NHS Trust and Central Middlesex Hospital (Dr Majeed Salmasi) was developed. At this stage we are not sure if Covid patients will recover fully or left with a longer-term residual effect. We hope that his collaborative research led by WHO CC will clarify these points.

## **31 May – 3 June 2020**

### **ASPHER Deans and Directors Retreat – Sofia, Bulgaria**

This year's meeting was organised virtually due to the Covid-19 pandemic. The meeting was hosted by Prof. Tzekomir Vodenicharov (Bulgaria) and addressed wide range of issues. Covid-19 was a main item, and the WHO CC did a presentation of its work and its involvement with Public Health Association.



**04 JUN 2020**

**Imperial College President's Awards for Outstanding Assistant Supervisor (recognition)**

WHO CC member Dr Elizabeth Dubois was proudly recognised by ICL for the President's Award for Outstanding Assistant Supervisor for providing world-class education and pastoral care for an ICL student.

**04 June 2020**

**FAMILY PHYSICIANS AND THE COVID-19 PANDEMIC: THE WAY FORWARD**

Joint WHO Europe and WONCA Europe meeting. The virtual meeting covered the key areas of managing primary care during the Covid-19 Pandemic. While many countries decided to exclude covid patients and focus on routine / essential services through virtual and telephone consultation other accepted these patients without taking the proper measures to protect staff and other patients. The discussions were vital to have clarity on the way forward and set up the right guidelines.

**12-14 of June 2019**

**Educational Trip (MPH, MSc, Fellows)**

This is an important educational activity in the Faculty of Medicine calendar for our MPH, MSc Students and WHO Fellows. The aim of the education trip is to give the students, PH trainees and Fellows an insight to the work of international organizations. It will also give them the opportunity to explore job opportunities and shape their career if they are interested in international work. This is a very popular activity and most loved by our students.

- World Health Organization (WHO - HQ)
- International Committee of the Red Cross (HQ)
- International Museum of Red Cross and Red Crescent
- United Nations Palais des Nations (The Assembly Hall, Council Chamber)
- Médecins sans Frontières International (MSF); (Doctors without Borders)
- United Nations High Commissioner for Refugees (UNHCR), and
- GAVI - The Vaccine Alliance

Students experienced informative and engaging talks by experts in the field of public health including immunizations and equitable access to vaccinations; current (and historical) international health and humanitarian efforts in areas of conflict and epidemics; aiding victims of violence or disaster; health advocacy of displaced and excluded persons; safeguard individuals against sexual exploitation, abuse and harassment; evidence-informed policy; health-related environment/disaster/climate change; emergency preparedness; adolescent and at-risk populations; health systems and universal coverage; leadership and innovation. Students were also given insight into employment, international job profiles and the internship process, particularly popular regarding the WHO. A guided tour of The Palais des Nations highlighted the origin of the League of Nations at the end of the First World War and today, the scope and remit of human rights and international law.

**Activity 5**

**Development of national capacity for health research training and development**

Description: Upon the request of WHO, support member states in developing national capabilities and strategies for health research with particular emphasis on universal health coverage (World Health Report 2013), disease prevention, person centred care and

continuity of care; through supporting countries to identify national research priorities and deliver health research training courses.

## **General**

The WHO CC members undertake wide range of research activities in many areas of public health, primary care, health policy, health management, medical education, and clinical effectiveness. Members published many papers (see the list at the end of the report) during the reporting year and presenting in many international conferences their original research findings, its impact on health systems and practice, and shaping health policy.

### **12 June 2019**

#### **WHO Geneva: Meeting WHE (WHO Health Emergencies) Learning and Capacity Development**

Discussion was focused on how to enhance the role of the WHE team's work and use some of the advanced learning methods including eLearning. This collaboration with WHO HQs was progressed through agreement to develop a joint online / virtual training programme on 'Acute Events'. Subsequently several meetings between WHO HQs colleagues and WHO CC staff were held in London and Geneva.

### **3 July 2019**

#### **Research Fellowship: WHO Fellow Dr Gunyoung Lee**

Gunyoung Lee is a senior scientist within the Korean Ministry of Food and Drug Safety. She joined WHO CC on a postgraduate Fellowship to expand her experience and knowledge of Chemical hazards. Her Fellowship is expected to be concluded with some research papers in the topic area.

### **12 Aug 2019**

#### **KSA Healthcare Leadership Academy, Initial Design Meeting continue with the previous meeting on the 15 of July**

The Healthcare Leadership Academy was established in 2017 to support the transformation of the Saudi Healthcare system as well as the Saudi 2030 Vision. A one-year Fellowship in alliance with Imperial College Business School would be fully blended with a mix of face-to-face teaching, e-learning, coaching, projects, and all this would happen whilst the participants undergo different work rotations across the Saudi Healthcare system. The topics and themes are diverse with a mix of leadership related topics like leading high-performance teams but also a range of healthcare themes like population health, improvement science, healthcare economics and more. The WHO CC will support the project in implementation but most importantly in conducting research review of leadership style in health and how leadership (which is at present predominantly medical) could be enhanced.

## **June 2019- June 2020**

The WHO team supervise several PhDs with wide range of research topics in public health. This year five candidates completed their PhDs successfully. Topics covered include:

1. The UK NHS Health Check
2. Health System Performance
3. Women Health
4. The Care of Elderly Population
5. The Quality of University Hospitals.

Two PhD candidates joined the WHO CC early in 2020 and it is expected that a third one will join late in 2020.

## **06-12 Oct 2019**

### **Public Health Law Training Course:**

This one-week course hosted by Austrian American Foundation and Open Medical Institute, Salzburg Austria. It was by the Centre for Public Health Law Research, Temple Law School, USA; Maastricht University and WHO CC Imperial. The one-week course with 32 participants from across Europe was aim at learning the Five Essential Public Health Law Services (5 EPHLS) framework and to apply it to a particular topic in public health law by building a problem set they used throughout a multi-week instructional module (course) in public health law and policy. The WHO contributed three half days sessions based on the accumulative research findings and the experience in reviewing and re-writing public health laws in many countries.

## **06 May 2020**

### **Postgraduate Medical Research Fellowship Programme in Public Health**

WHO Collaborating Centre Postgraduate Medical Research Training Programme is aimed at public health and family medicine specialists or other qualified healthcare professionals. It is an online programme allowing remote access to high calibre research training, and research resources. The training comprises of remote live training sessions on research skills, mentoring sessions tracking progress in research project and guidance in the research project aimed at publication. The training is also enriched with access to carefully tailored sessions on British NHS and how it encourages

## **16 June 2020**

### **Call Dr Maryam Matar Ref Genetic Training Course**

The virtual meeting was about the exploring the ability of the 22 WHO EMRO countries in carrying out WGS (Whole Genome Sequencing) research to detect new Variants of SARS-Cov-2 virus. It seems that only country with a capacity for such research is the UAE within the private sector. This led to project to support the development of such services with advice from Virology colleague at UCL.

**Collaboration with WHO regarding the activities of the WHO Collaborating Centre during the past 12 months (e.g., means of communication, frequency of contact, visits to or from WHO).**

This year we have strengthened further our collaboration with WHO HQs Geneva, WHO EURO and WHO EMRO. We attended many of their meetings (all listed under the activities), we held many virtual and telephone meetings and conferences; worked closely with colleagues on projects; commissioned by WHO to do a specific piece of work; appointed adviser(s) to two advisory groups (on primary care with EURO and EMRO); and we were asked to review documents produced by WHO Expert groups. We did not encounter any difficulties and we are more than grateful for the support given to us by WHO. Since March 2020, Covid 19 took the lion share of our work: Member: WHO Technical Advisory Committee on Covid-19 (WHO EMRO); Member: Supreme Advisory Committee on Covid -19 – Iraq (the committee was created by an order by the Prime Minister); Member: Specialist Technical Advisory Group of Experts (STAGE) on Covid-19.

**Other Covid-19 Related Activities:**

1. Published many papers on Covid-19 (see publications)
2. Covid-19 Webinars: The WHOCC in collaboration with the Arab Public Health Association and WHO EMRO organised 25 global Webinars on Covid-19 topical issues including the virus, public health measures, clinical aspects, treatment, long term, vaccination, social impacts, mental health, workforce etc. These proved to be extremely successful Webinars and attended regularly by wide range of professionals CPD certificate is awarded for each attendance. Different dates, ongoing
3. The WHO CC members were invited to present in many seminars and international conferences ranging from public health measures to health service responses at all settings. We also contributed to many non-Covid related international conferences.
4. Members of the WHO CC were invited on regular basis on TV and Radio programs (news, dedicated programs etc) on many channels around the world
5. The WHO CC website is updated with the latest news and important collaborative works on Covid-19.
6. Supported countries in their efforts in development and implementation of Covid-19 plan (public health measures); developed treatment and management guidelines; and supporting countries in their efforts to obtain vaccines

**Interactions or collaborations with other WHO collaborating centres in the context of the implementation of the above activities (if any).**

1. Collaboration with WHO CC on Primary Care Toronto
2. Collaboration with WHO CC on Primary care in Gent
3. Worked closely with many WHO CC in EMR of the WHO and advised other on the application for designation

**Technical, programmatic, advisory or other support received from WHO during the past 12 months for the implementation of the agreed activities listed above.**

1. Over the last we have received a lot of support from WHO EURO Centre for Primary care, WHO EURO Health System Division (Public Health Service), WHO EMRO Health System Development Division, and WHO HQs Geneva for the project we are undertaking (Quality Governance; Integration of public health and primary care; public health professionals training, etc). We met with DG on two occasions, and we are grtafeul for his kind support and advice.
2. Many colleagues in WHO HQs, WHO EURO and WHO EMRO were either involved in our research and publication or kindly reviewed our work before submission for publication.
3. The WHO CC received generous support from WHO on serving at various advisory groups and Committees

**Publications 2019-2020**

1. The primary care response to COVID-19 in England's National Health Service. A Majeed, EJ Maile, AB Bindman. *Journal of the Royal Society of Medicine* 113 (6), 208-210
2. Prevalence and attributable health burden of chronic respiratory diseases, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. JB Soriano, PJ Kendrick, KR Paulson, V Gupta, EM Abrams, RA Adedoyin, .... *The Lancet Respiratory Medicine* 8 (6), 585-596
3. PILOT STUDY OF ARTIFICIAL INTELLIGENCE SOFTWARE FOR PATIENTS'SELF-REFERRAL TO BREAST CLINIC. A Rao, A Dhahri, E Mokhtari, A Majeed, A Patel. *European Journal of Surgical Oncology* 46 (6), e3
4. Patients' perception of self-referral pathway to NHS secondary care breast clinic. A Rao, Z Sidhu, E Mokhtari, A Majeed, A Patel. *European Journal of Surgical Oncology* 46 (6), e17
5. Protecting the health of doctors during the COVID-19 pandemic. A Majeed, M Molokhia, B Pankhania, K Asanati. *British Journal of General Practice* 70 (695), 268-269
6. Can the UK emulate the South Korean approach to covid-19? A Majeed, Y Seo, K Heo, D Lee. *Brit Med J* 369
7. The ORNATE India Project: United Kingdom–India Research Collaboration to tackle visual impairment due to diabetic retinopathy S Sivaprasad, R Raman, D Conroy, R Wittenberg, R Rajalakshmi, .... *Eye*, 1-8
8. Evaluating the risk of macrovascular events and mortality among people with multiple sclerosis in England. R Palladino, RA Marrie, A Majeed, J Chataway. *JAMA Neurology*
9. Health inequalities: the hidden cost of COVID-19 in NHS hospital trusts? S Coronini-Cronberg, E John Maile, A Majeed. *Journal of the Royal Society of Medicine* 113 (5), 179-184
10. Protecting older people from COVID-19: should the United Kingdom start at age 60? T Osama, B Pankhania, A Majeed. *Journal of the Royal Society of Medicine* 113 (5), 169-170
11. Do variations in primary care practice characteristics explain the effect of a financial incentive scheme on antibiotic prescribing? A longitudinal study of the Quality Premium ... P Anyanwu, K Pouwels, A Walker, M Moore, C Butler, A Majeed, ... *BMJ Open*



12. The impact of socioeconomic deprivation on the uptake of colorectal cancer screening in London. N Lal, HKSI Singh, A Majeed, N Pawa. *Journal of Medical Screening*, 0969141320916206
13. Frequent attendances at emergency departments in England. G Greenfield, M Blair, PP Aylin, S Saxena, A Majeed, M Hoffman, A Bottle. *Emergency Medicine Journal*
14. Association between pre-diabetes and microvascular and macrovascular disease in newly diagnosed type 2 diabetes. R Palladino, AG Tabak, K Khunti, J Valabhji, A Majeed, C Millett, ... *BMJ Open Diabetes Research and Care* 8 (1), e001061
15. Organ donation: the clock is ticking for public awareness. F Mughal, A Majeed. *BMJ* 368
16. The global, regional, and national burden of oesophageal cancer and its attributable risk factors in 195 countries and territories, 1990–2017: a systematic analysis for the ... F Kamangar, D Nasrollahzadeh, S Safiri, SG Sepanlou, C Fitzmaurice, ... *The Lancet Gastroenterology & hepatology*
- Improving workplace health in the NHS. A Majeed, K Asanati. *Brit Med J* 368
17. A pragmatic and scalable strategy using mobile technology to promote sustained lifestyle changes to prevent type 2 diabetes in India and the UK: a randomised controlled trial. A Nanditha, H Thomson, P Susairaj, W Srivanichakorn, N Oliver, ... *Diabetologia* 63 (3), 486-496
18. Global, regional, and national burden of chronic kidney disease, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. B Bikbov, CA Purcell, AS Levey, M Smith, A Abdoli, M Abebe, ... *The Lancet* 395 (10225), 709-733
19. Do variations in primary care practice characteristics explain the effect of a financial incentive scheme on antibiotic prescribing? A longitudinal study of the 20. Quality Premium .... M Moore, P Anyanwu, KB Pouwels, A Majeed, S Tonkin-Crine. *British Journal of General Practice*
21. Estimating the Effect of Healthcare-Associated Infections on Excess Length of Hospital Stay Using Inverse Probability–Weighted Survival Curves. KB Pouwels, S Vansteelandt, R Batra, J Edgeworth, S Wordsworth, ... *Clinical Infectious Diseases*
21. Clinical skills training in UK GP training schemes A Majeed. *Brit Med Journal*
22. Evaluation of the diabetes screening component of a national cardiovascular risk assessment programme in England: a retrospective cohort study. R Palladino, EP Vamos, KCM Chang, K Khunti, A Majeed, C Millett. *Scientific reports* 10 (1), 1-11
23. Burden of injury along the development spectrum: associations between the Socio-demographic Index and disability-adjusted life year estimates from the Global Burden of Disease ... JA Haagsma, SL James, CD Castle, ZV Dingels, JT Fox, EB Hamilton, ... *Injury prevention*
24. Associations of social isolation with anxiety and depression during the early COVID-19 pandemic: a survey of older adults in London, UK. CE Robb, D Jager-Loots, A Celeste, S Ahmadi-Abhari, P Giannakopoulou, .... *Frontiers in Psychiatry* 11, 991
25. A Digital Therapeutic Intervention for Smoking Cessation in Adult Smokers: Randomized Controlled Trial. J Webb, S Peerbux, P Smittenaar, S Siddiqui, Y Sherwani, M Ahmed, ... *medRxiv*

26. Smoking, SARS-CoV-2 and COVID-19: A review of reviews considering implications for public health policy and practice. EJ Grundy, T Suddek, FT Filippidis, A Majeed, S Coronini-Cronberg. *Tobacco induced diseases* 18.
27. A Randomized Controlled Trial of a Digital Therapeutic Intervention for Smoking Cessation. J Webb, S Peerbux, P Smittenaar, S Siddiqui, Y Sherwani, M Ahmed, ... *medRxiv*
28. Risk Reduction Framework for NHS Staff at risk of COVID-19 infection. K Khunti, A de Bono, I Browne, T Greenhalgh, W Hanif, A Majeed, K Patel, ... *Workforce* 20 (17), 44
29. Chloroquine and hydroxychloroquine effectiveness in human subjects during coronavirus: a systematic review. S Rawaf, M Al-Saffar, H Quezada-Yamamoto, M Alshaikh, M Pelly, ... *medRxiv*
30. The global, regional, and national burden of colorectal cancer and its attributable risk factors in 195 countries and territories, 1990–2017: a systematic analysis for the ... S Safiri, SG Sepanlou, KS Ikuta, C Bisignano, H Salimzadeh, A Delavari, ... *The Lancet Gastroenterology & Hepatology* 4 (12), 913-933
31. Global, regional, and national incidence, prevalence, and mortality of HIV, 1980–2017, and forecasts to 2030, for 195 countries and territories: a systematic analysis for the ...TD Frank, A Carter, D Jahagirdar, MH Biehl, D Douwes-Schultz, ... *The lancet HIV* 6 (12), e831-e859
32. Health professions digital education on clinical practice guidelines: a systematic review by Digital Health Education collaboration. LT Car, A Soong, BM Kyaw, KL Chua, N Low-Beer, A Majeed. *BMC medicine* 17 (1), 139
33. Regional variations in trajectories of long-term readmission rates among patients in England with heart failure. A Rao, D Kim, A Darzi, A Majeed, P Aylin, A Bottle. *BMC cardiovascular disorders* 19 (1), 86
34. Sepsis: getting the balance right. P Morgan, A Majeed. *BMJ* 367
35. Cardiovascular morbidity is increased in secondary but not primary adrenal failure. K Ngaosuwan, I Godsland, J Cox, A Majeed, J Quint, D Johnston, ... *Society for Endocrinology BES* 2019 65
36. Patients with more comorbidities have better detection but poorer management of chronic diseases. G Sum, GCH Koh, SW Mercer, YW Lim, A Majeed, B Oldenburg, JT Lee. *European Journal of Public Health* 29 (Supplement\_4), ckz185. 030
37. Patient and health-care factors associated with potentially missed acute deterioration in primary care: a retrospective observational study of linked primary and secondary care ...E Cecil, A Bottle, A Majeed, P Aylin. *The Lancet* 394, S30
38. Association between detection of non-diabetic hyperglycaemia and vascular complications. R Palladino, AG Tabak, K Khunti, J Valabhji, A Majeed, C Millett, ... *European Journal of Public Health* 29 (Supplement\_4), ckz185. 150
39. Depressive symptoms, neuroticism and participation in breast and cervical cancer screening in the UK. CL Niedzwiedz, KA Robb, SV Katikireddi, JP Pell, DJ Smith. *European Journal of Public Health* 29 (Supplement\_4), ckz185. 032
40. Mapping 123 million neonatal, infant and child deaths between 2000 and 2017. R Burstein, NJ Henry, ML Collison, LB Marczak, A Sligar, S Watson, ... *Nature* 574 (7778), 353-358
41. Prescribing trends of gabapentin, pregabalin, and oxycodone: a secondary analysis of primary care prescribing patterns in England. K Green, NC O'Dowd, H Watt, A Majeed, RJ Pinder. *BJGP open* 3 (3)

42. Impact of integrating pharmacists into primary care teams on health systems indicators: a systematic review. B Hayhoe, JA Cespedes, K Foley, A Majeed, J Ruzangi, G Greenfield. *British Journal of General Practice* 69 (687), e665-e674
43. Route to heart failure diagnosis in English primary care: a retrospective cohort study of variation. D Kim, B Hayhoe, P Aylin, A Majeed, MR Cowie, A Bottle. *British Journal of General Practice* 69 (687), e697-e705
44. Developing routinely recorded clinical data from electronic patient records as a national resource to improve neonatal health care: the Medicines for Neonates research programme. N Modi, D Ashby, C Battersby, P Brocklehurst, Z Chivers, K Costeloe, .... *Programme Grants for Applied Research* 7 (6)
45. Association of non-diabetic hyperglycaemia and microvascular and macrovascular complications of type 2 diabetes: a retrospective cohort study. EP Vamos, R Palladino, AG Tabak, J Valabhji, K Khunti, A Majeed, ...*DIABETOLOGIA* 62, S500-S500
46. Primary health care professionals' views of reminders in electronic patient records. EV Cecil, L Dewa, R Ma, A Majeed, P Aylin. *Journal of Epidemiology and Community Health* 73 (Suppl 1), A64
47. The impact of smoking and smoking cessation on disease outcomes in ulcerative colitis: a nationwide population-based study. J Blackwell, S Saxena, C Alexakis, A Bottle, E Cecil, A Majeed, RC Pollok. *Alimentary pharmacology & therapeutics* 50 (5), 556-567
48. The Self-Care Matrix: A unifying framework for self-care. -Selfcare JournalA El-Osta, D Webber, S Gnani, R Banarsee, D Mummery, A Majeed, ...*SelfCare Journal*
49. Impact of mobile health applications on self-management in patients with type 2 diabetes mellitus: protocol of a systematic review. BA Bene, S O'Connor, N Mastellos, A Majeed, KP Fadahunsi, .... *BMJ open* 9 (6), e025714
50. Rethinking primary care user fees: is charging a fee for appointments a solution to NHS underfunding? G Greenfield, B Majeed, B Hayhoe, S Rawaf, A Majeed. *British Journal of General Practice* 69 (683), 280-281
51. Past, present, and future of global health financing: a review of development assistance, government, out-of-pocket, and other private spending on health for 195 countries .... AY Chang, K Cowling, AE Micah, A Chapin, CS Chen, G Ikilezi, N Sadat, ...*The Lancet* 393 (10187), 2233-2260
52. Time spent being sedentary: an emerging risk factor for poor health. D Salman, M Farooqi, A McGregor, A Majeed. *British Journal of General Practice* 69 (683), 278-279
53. Micah AE, Su Y, Global Burden of Disease Health Financing Collaborator Network, Rawaf S, Rawaf DLet al., 2020, Health sector spending and spending on HIV/AIDS, tuberculosis, and malaria, and development assistance for health: progress towards Sustainable Development Goal 3, *The Lancet*, Vol: 396, Pages: 693-724, ISSN: 0140-6736
54. Rawaf S, Allen L, Stigler FL, Kringos D, Quezada Yamamoto H, van Weel C et al., Lessons on the COVID-19 pandemic, for and by primary care professionals worldwide, *European Journal of General Practice*, ISSN: 1381-4788
55. Local Burden of Disease WaSH Collaborators, 2020, Mapping geographical inequalities in access to drinking water and sanitation facilities in low-income and middle-income countries, 2000-17., *The Lancet Global Health*, Vol: 8, Pages: e1162-e1185, ISSN: 2214-109X

56. Local Burden of Disease 2019 Neglected Tropical Diseases Collaborators, 2020, The global distribution of lymphatic filariasis, 2000-18: a geospatial analysis., *The Lancet Global Health*, Vol: 8, Pages: e1186-e1194, ISSN: 2214-109X
57. Lozano R, Fullman N, Mumford JE, et al., 2020, Measuring universal health coverage based on an index of effective coverage of health services in 204 countries and territories, 1990-2019: a systematic analysis for the Global Burden of Disease Study 2019, *The Lancet*, ISSN: 0140-6736
58. James SL, Castle CD, Dingels ZV, et al., 2020, Estimating global injuries morbidity and mortality: methods and data used in the Global Burden of Disease 2017 study, *Injury Prevention*, ISSN: 1353-8047
59. Wiens KE, Lindstedt PA, Blacker BF, et al., 2020, Mapping geographical inequalities in oral rehydration therapy coverage in low-income and middle-income countries, 2000-17, *The Lancet Global Health*, Vol: 8, Pages: e1038-e1060, ISSN: 2214-109X
60. LBD Double Burden of Malnutrition Collaborators, 2020, Author correction: Mapping local patterns of childhood overweight and wasting in low- and middle-income countries between 2000 and 2017., *Nature Methods*, Vol: 26, Pages: 1308-1308, ISSN: 1548-7091
61. Reiner RC, Wiens KE, Deshpande A, et al., 2020, Mapping geographical inequalities in childhood diarrhoeal morbidity and mor-tality in low-income and middle-income countries, 2000-17: analysis for the Global Burden of Disease Study 2017, *The Lancet*, Vol: 395, Pages: 1779-1801, ISSN: 0140-6736
62. Dirac MA, Safiri S, Tsoi D, et al., 2020, The global, regional, and national burden of gastro-oesophageal reflux disease in 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017, *The Lancet Gastroenter-ology & Hepatology*, Vol: 5, Pages: 561-581, ISSN: 2468-1253
63. Chang AY, Cowling K, Micah AE, et al., 2020, Past, present, and future of global health financing: A review of development as-sistance, government, out-of-pocket, and other private spending on health for 195 countries, 1995-2050, *The Lancet*, Vol: 393, Pages: 2233-2260, ISSN: 0140-6736
64. Kamangar F, Nasrollahzadeh D, Safiri S, et al., 2020, The global, regional, and national burden of oesophageal cancer and its at-tributable risk factors in 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017, *The Lancet Gastroenterology & Hepatology*, Vol: 5, Pages: 582-597, ISSN: 2468-1253
65. Tamar K-K, Harumi QY, Ali A, Shible S, Mohamed A, Salman R, Maha ERet al., 2020, Integration of sexual and reproductive health services in the provision of primary health care in the Arab States: status and a way forward., *Sexual and Reproductive HealthCare*, Vol: 28, Pages: 1-12, ISSN: 1877-5756
68. Soriano JB, Kendrick PJ, Paulson KR, et al., 2020, Prevalence and attributable health burden of chronic respiratory diseases, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017, *The Lancet Respiratory Medicine*, Vol: 8, Pages: 585-596, ISSN: 2213-2600
69. Yadgir S, Johnson CO, Aboyans V, et al., 2020, Global, regional, and national burden of calcific aortic valve and degenerative mi-tral valve diseases, 1990-2017, *Circulation*, Vol: 141, Pages: 1670-1680, ISSN: 0009-7322
70. Rawaf S, Al-Saffar M, Quezada Yamamoto H, Alshaikh M, Pelly M, Rawaf D, Dubois E, Majeed Aet al., 2020, Chloroquine and hydroxychloroquine effectiveness in human subjects during coronavirus: a systematic review, Publisher: medRxiv

71. Rawaf S, Quezada Yamamoto H, Rawaf D, 2020, Unlocking towns and cities: COVID-19 exit strategy, *Eastern Mediterranean Health Journal*, Vol: 26, Pages: 499-502, ISSN: 1020-3397
72. LBD Double Burden of Malnutrition Collaborators, 2020, Mapping local patterns of childhood overweight and wasting in low- and middle-income countries between 2000 and 2017, *Nature Medicine*, Vol: 26, Pages: 750-759, ISSN: 1078-8956
73. James SL, Castle CD, Dingels ZV, et al., 2020, Global injury morbidity and mortality from 1990 to 2017: results from the Global Burden of Disease Study 2017, *Injury Prevention*, ISSN: 1353-8047
74. Sepanlou SG, Safiri S, Bisignano C, et al., 2020, The global, regional, and national burden of cirrhosis by cause in 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017, *The Lancet Gastroenterology & Hepatology*, Vol: 5, Pages: 245-266, ISSN: 2468-1253
75. Bikbov B, Purcell CA, Levey AS, et al., 2020, Global, regional, and national burden of chronic kidney disease, 1990–2017: a systematic analysis for the 76. 76. Global Burden of Disease Study 2017, *The Lancet*, Vol: 395, Pages: 709-733, ISSN: 0140-6736
77. Haagsma JA, Olij BF, Majdan M, et al., 2020, Falls in older aged adults in 22 European countries: incidence, mortality and bur-den of disease from 1990 to 2017, *Injury Prevention*, ISSN: 1353-8047
78. Kinyoki DK, Osgood-Zimmerman AE, Pickering BV, et al., 2020, Mapping child growth failure across low- and middle-income countries, *Nature*, Vol: 577, Pages: 231-234, ISSN: 0028-0836
79. Haagsma JA, James SL, Castle CD, et al., 2020, Burden of injury along the development spectrum: associations between the So-cio-demographic Index and disability-adjusted life year estimates from the Global Burden of Disease Study 2017, *Injury Prevention*, ISSN: 1353-8047
80. Alatab S, Sepanlou SG, Ikuta K, et al., 2020, The global, regional, and national burden of inflammatory bowel disease in 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017, *The Lancet Gastroenter-ology & Hepatology*, Vol: 5, Pages: 17-30, ISSN: 2468-1253
81. Nashat N, et al, Quezada Yamamoto H, vn Wheel C, Rawaf Set al., 2020, Primary care healthcare policy implementation in the eastern Mediterranean region; experience of six countries: part ii, *European Journal of General Practice*, Vol: 26, Pages: 1-6, ISSN: 1381-4788
82. Rawaf S, Al-Saffar M, Quezada Yamamoto H, Alshaikh M, Pelly M, Rawaf D, Dubois E, Majeed Aet al., 2020, Chloroquine and hydroxychloroquine effectiveness in human subjects during coronavirus: a systematic review, Publisher: medRxiv
83. Dubois E, McNally L, Andrews L, Dungbo F, Rawaf S, Short E, Wassum Ket al., 2019, Developing and implementing health systems policy to improve the delivery of brief tobacco interventions, *Strengthening health systems for treating tobacco dependence in primary care: building capacity for tobacco control*, WHO Technical Report Series, ISSN: 0512-3054
84. H. Jamil, T. Hamdanm, S. Rawaf, E. Dubois, S Yaso, S. Aljoboori, S. Jamil, B. Arnetz Pregnancy outcome among soldiers and civilians in Iraq and Gulf War 1991. *Arch Epidemiol* (2019) 4:1032. DOI: 10.29011/2577-2252.101032
85. Rawaf S, Quezada Yamamoto H, Rawaf D, 2020, Unlocking towns and cities: COVID-19 exit strategy, *Eastern Mediterranean Health Journal*, Vol:26, ISSN:1020-3397, Pages:499-502



86. Nashat N, et al, Quezada Yamamoto H, et al., 2020, Primary care healthcare policy implementation in the eastern Mediterranean region; experience of six countries: part ii, *European Journal of General Practice*, Vol:26, ISSN:1381-4788, Pages:1-6
87. Rawaf S, Al-Saffar M, Quezada Yamamoto H, Alshaikh M, Pelly M, Rawaf D, Dubois E, Majeed A et al., 2020, Chloroquine and hydroxychloroquine effectiveness in human subjects during coronavirus: a systematic review, Publisher: medRxiv
88. Quezada-Yamamoto H, Dubois E, Mastellos N, Rawaf S et al., 2019, Primary care integration of sexual and reproductive health services for chlamydia testing across WHO-Europe: a systematic review, *BMJ OPEN*, Vol: 9, ISSN: 2044-6055 doi: 10.1136/bmjopen2019-031644
89. Al-Saffar M, Hayhoe B, Harris M, Majeed A, Greenfield G et al., 2020, Children as frequent attenders in primary care: a systematic review, *BJGP Open*, ISSN: 2398-3795
90. Greenfield G, Blair M, Aylin P, Saxena S, Majeed F, Bottle R et al., 2021, Characteristics of frequent paediatric users of emergency departments in England: an observational study using routine national data, *Emergency Medicine Journal*, Vol: 38, Pages: 146-150, ISSN: 1472-0205
91. Woods J-B, Greenfield G, Majeed A, Hayhoe B et al., 2020, Clinical effectiveness and cost effectiveness of individual mental health workers colocated within primary care practices: a systematic literature review, *BMJ Open*, Vol: 10, ISSN: 2044-6055
92. Neves AL, Lawrence-Jones A, Naar L, Greenfield G, Sanderson F, Hyde T, Wingfield D, Cassidy I, Mayer E et al., 2020, Multidisciplinary teams must work together to co-develop inclusive digital primary care for older people, *British Journal of General Practice*, Vol: 70, Pages: 582-582, ISSN: 0960-1643

Open Access Link Cite JOURNAL ARTICLE

93. Han SM, Greenfield G, Majeed F, Hayhoe B et al., 2020, Impact of Remote Consultations on Antibiotic Prescribing in Primary Healthcare: Systematic Review, *Journal of Medical Internet Research*, Vol: 22, ISSN: 1438-8871
94. Greenfield G, Blair M, Aylin P, Saxena S, Majeed F, Hoffman M, Bottle R et al., 2020, Frequent attendances at emergency departments in England, *Emergency Medicine Journal*, Vol: 37, Pages: 597-599, ISSN: 1472-0205
95. Alturkistani A, Qavi A, Anyanwu PE, Greenfield G, Greaves F, Costelloe C et al., 2020, Patient Portal Functionalities and Patient Outcomes Among Patients With Diabetes: Systematic Review (Preprint), *Journal of Medical Internet Research*, ISSN: 1438-8871
96. Alturkistani A, Qavi A, Anyanwu PE, Greenfield G, Greaves F, Costelloe C et al., 2020, Patient portal functionalities and patient outcomes among diabetes patients: a systematic, *Journal of Medical Internet Research*, ISSN: 1438-8871
97. Alturkistani A, Greenfield G, Greaves F, Aliabadi S, Jenkins RH, Costelloe C et al., 2020, Patient portal functionalities and uptake: a systematic review protocol, *JMIR Research Protocols*, Vol: 9, ISSN: 1929-0748
98. Ruzangi J, Blair M, Cecil E, Greenfield G, Bottle R, Hargreaves D, Saxena S et al., 2020, Trends in healthcare use in children aged less than 15 years; a population-based cohort study in England from 2007 to 2017, *BMJ Open*, Vol: 10, ISSN: 2044-6055
99. Pappas Y, Všecká J, Mastellos N, Greenfield G, Randhawa G et al., 2019, Diagnosis and decision-making in telemedicine, *Journal of Patient Experience*, Vol: 6, Pages: 296-304, ISSN: 2374-3735

100. Bitan Y, Parmet Y, Greenfield G, Teng S, Cook RI, Nunnally ME et al., 2019, Making sense of the cognitive task of medication reconciliation using a card sorting task, *Human Factors*, Vol: 61, Pages: 1315-1325, ISSN: 0018-7208
101. Hayhoe B, Acuyo Cespedes J, Foley K, Majeed F, Ruzangi J, Greenfield G et al., 2019, Impact of integrating pharmacists into primary care teams on health systems indicators: a systematic review, *British Journal of General Practice*, Vol: 69, Pages: e665-e674, ISSN: 0960-1643
102. Greenfield G, 2019, Second opinion utilization by healthcare insurance type in a mixed private-public healthcare system: a population-based study, *BMJ Open*, Vol: 9, Pages: 1-10, ISSN: 2044-6055
103. Alturkistani A, Greenfield G, Greaves F, Aliabadi S, Jenkins RH, Costelloe C et al., 2019, Patient portal functionalities and uptake: systematic review protocol (Preprint), Publisher: JMIR Publications
104. Greenfield G, Majeed B, Hayhoe B, Rawaf S, Majeed A et al., 2019, Rethinking primary care user fees: is charging a fee for appointments a solution to NHS underfunding?, *Br J Gen Pract*, Vol: 69, Pages: 280-281
105. Sripa P, Hayhoe B, Garg P, Majeed A, Greenfield G et al., 2019, Impact of GP gatekeeping on quality of care, and health outcomes, use, and expenditure: a systematic review, *British Journal of General Practice*, Vol: 69, Pages: e294-e303, ISSN: 0960-1643
106. Shmueli L, Davidovitch N, Pliskin JS, Hekselman I, Balicer RD, Greenfield G et al., 2019, Reasons, perceived outcomes and characteristics of second-opinion seekers: Are there differences in private vs. public settings?, *BMC Health Services Research*, Vol: 19, ISSN: 1472-6963
107. Hayhoe BWJ, Greenfield G, Majeed A, 2019, Is it getting easier to obtain antibiotics in the UK?, *British Journal of General Practice*, ISSN: 0960-1643
108. Woringer M, Dharmayat KI, Greenfield G, Bottle A, Ray KK et al., 2019, American Heart Association's Cholesterol CarePlan as a smartphone-delivered web app for patients prescribed cholesterol-lowering medication: Protocol for an observational feasibility study, *JMIR Research Protocols*, Vol: 8, ISSN: 1929-0748