Literature Search Results

Research question or topic: "The Public Health Workforce and COVID-19"
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Completed by: HEE Knowledge Management Team (Katie Nicholas)
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Search results

Public health workforce and COVID-19

Letter: Train and deploy a community level public health workforce to combat covid-19 May 2020, BMJ

We strongly support Pollock and colleagues' views.1 We do not understand why the government did not follow World Health Organization guidelines regarding basic infection controlpractice2 on contact tracing in the early days of the pandemic. We welcome the plan to train 18 000 contact tracers but, in the government's current proposal, the public are in danger of being seen as passive disaster victims; a network of community based responders could become a significant resource to find, isolate, and test each index case and trace contacts to break the chain of covid-19 transmission.

Are We Ready For The Next Pandemic? June 2020, Health Affairs

The author conveys his concerns on whether the world is ready for another pandemic after COVID-19. Topics mentioned include the strengthening of health systems to include detection, containment, and treatment as well as contact tracing and community mobilization, the goal of non-governmental organization Project HOPE to work with local health workers and

communities on preparedness, and the establishment of the Wuhan University HOPE School of Nursing by Project HOPE.

Letter: Comparing hospitalised, community and staff COVID-19 infection rates during the early phase of the evolving COVID-19 epidemic 2020, Journal of Infection

Dear Editor, We note with interest the study of Liu et al.1 Where they used routine laboratory test parameters to derive a potentially useful, independent measure (neutrophil–lymphocyteratio–NLR) of hospital-based mortality for male patients with COVID-19. Indeed, many routinely performed tests can offer useful insights into the status an devolving epidemiology of COVID-19 patients in local patient populations.2 Here, we use our SARS-CoV-2 test-ing data to derive several useful epidemiological parameters, which can be applied simply by any team, to gain greater insight into the characteristics of their COVID-19-infected populations, which may help to target additional interventions and investigations, as appropriate.

Rethinking public health education and public health workforce development in China May 2020, Chinese Journal of Preventative Medicine *Abstract only in English**

During the fighting against COVID-19, both the public health education and public health workforce of China have exposed important challenges. The present review discusses dilemmas and weakness that relate to the position of public health education in the higher education system, public health education system, curriculum system, teaching methods, practice-based teaching, training of highly qualified personnel in public health, public health teachers, remuneration and non-monetary honorable rewards for the public health workforce. Suggestions are also proposed for each of the challenges.

A Bold Response to the COVID-19 Pandemic: Medical Students, National Service, and Public Health May 2020, JAMA: Journal of the American Medical Association

The authors discuss the proposed participation of medical students in national public health service programs designed to address the coronavirus disease (COVID-19) pandemic in the U.S. Topics explored include the impact of the pandemic on the public health workforce of the country, the need provide these students adequate training on infectious disease epidemiology and control, and the assistance that these students can provide to high-risk populations.

NAATP members work to support staff during changes of pandemic May 2020, Alcoholism and Drug Abuse Weekly *Abstract only**

Members of the National Association of Addiction Treatment Providers (NAATP) — treatment programs both inpatient and outpatient — are still open for business. In fact, business is booming, NAATP told ADAW last week. This is good for patients, and good for providers, but at the same time, it's stressful for staff. Employers are working to combat this stress by helping to obtain personal protective equipment (PPE) — masks and gloves — for staff. In addition, they are trying to ramp up with telehealth, provide supports for staff and keep paying attention to the needs of patients. Demand for treatment is increasing, as drinking is going up as well.

COVID-19: Five dimensions of impact 29th April 2020, The Health Foundation

The coronavirus (COVID-19) pandemic has delivered a profound shock to the UK. The measures to control the spread of the virus have reached deep into our lives, affecting people's income, job security and social contacts – factors that are essential to healthy lives. The public health workforce and local government have reshaped their work in an effort to contain the infection and protect the most vulnerable. Yet this is against a backdrop of successive years of real-terms budget reductions. The NHS has been radically mobilised to respond to the acute needs of people infected with the virus, at the same time as delivering scaled-back non-COVID-19 health care. Social care, weakened by years of declining real-terms public funding and rising demand, has been reeling from the impact of the virus, with many users and staff unprotected, fatally vulnerable and poorly accounted for in the official data until now.

Public health must be strengthened for a health post-COVID world 30th April 2020, European Public Health Alliance

Guest article by John Middleton, President and Robert Otok, Director, The Association of Schools of Public Health in the European Region The current COVID-19 pandemic crisis has brought to bear the urgency of a strong and concerted effort to cultivate training, research and capacity in public health in order to develop and maintain a prepared cadre of public health experts and professionals. It makes plain as well the need to emphasize public health approaches and knowledge in other professions, bolstering multi-professional teams and cross-discipline collaboration. ASPHER has therefore issued a Statement on the COVID-19 outbreak emergency calling for "an allocation of resources toward specific emergency training on COVID-19 and for a renewed long-term investment in public health education and training at all levels".

Community Health Workers

COVID-19 Crisis Creates Opportunities for Community-Centered Population Health: Community Health Workers at the Center July 2020, The Journal of Ambulatory Care Management

Dealing with the COVID-19 coronavirus requires a coordinated transnational effort. We propose a 2-stage state-led effort that utilizes community health workers (CHWs). We spell out what is beginning to occur in states to control and suppress COVID-19. In the second stage, we suggest working with these CHWs as a key element in the next evolution of our health care system: community-centered population health.

Prioritising the role of community health workers in the COVID-19 response June 2020, BMJ Global Health

COVID-19 disproportionately affects the poor and vulnerable. Community health workers are poised to play a pivotal role in fighting the pandemic, especially in countries with less resilient health systems. Drawing from practitioner expertise across four WHO regions, this article outlines the targeted actions needed at different stages of the pandemic to achieve the following goals: (1) PROTECT healthcare workers, (2) INTERRUPT the virus, (3) MAINTAIN existing healthcare services while surging their capacity, and (4) SHIELD the most vulnerable from socioeconomic shocks. While decisive action must be taken now to blunt the impact of the pandemic in countries likely to be hit the hardest, many of the investments in the supply chain, compensation, dedicated supervision, continuous training and performance management

necessary for rapid community response in a pandemic are the same as those required to achieve universal healthcare and prevent the next epidemic.

Letter: Community Health Workers And COVID-19...Kangovi S, Mitra N, Grande D, et al. Evidence-Based Community Health Worker Program Addresses Unmet Social Needs And Generates Positive Return On Investment June 2020, Health Affairs *Abstract only**

The authors discuss a report on the impact of the COVID-19 pandemic on the U.S. public health. Topics cited include the Area Deprivation Index for targeting interventions that maximize the return on investment for public health preparedness, efforts to boost capacity to address patients' social determinants of health, and the urge for the U.S. Centers for Medicare and Medicaid Services to reimburse health worker services via the interim final rule in use for other COVID-19 relief regulations.

Community health workers for pandemic response: a rapid evidence synthesis 2020, Medrxiv (Pre-Print database)

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

Introduction: Coronavirus disease (COVID-19), a respiratory illness, first discovered in China in December 2019 has now spread to 213 countries or territories affecting millions across the globe. We received a request from National Health Systems Resource Centre, a public agency in India, for a Rapid Evidence Synthesis (RES) on community health workers (CHWs) for COVID-19 prevention and control. Methods: We searched PubMed, websites of ministries, public agencies, multilateral institutions, COVID-19 resource aggregators and pre-prints (without language restrictions) for articles on the role, challenges and enablers for CHWs in pandemics. Two reviewers screened the records independently with a third reviewer resolving disagreements. One reviewer extracted data in a consensus data extraction form with another reviewer cross-checking it. A framework on CHW performance in primary healthcare not specific to pandemic was used to guide data extraction and narrative analysis. Results: We retrieved 211 records and finally included 36 articles on the role, challenges and enablers for CHWs in pandemics. We found that CHWs play an important role in building awareness, countering stigma and maintaining essential primary healthcare service delivery. It is essential that CHWs are provided adequate Personal Protective Equipment (PPE) and appropriately trained in its usage in the early stages of the pandemic. Wide range of policies and guidance is required to ensure health systems functioning. A clear guidance for prioritizing essential activities, postponing non-essential ones and additional pandemic related activities is crucial. CHWs experience stigmatization, isolation and social exclusion. Psychosocial support, non-performance-based incentives, additional transport allowance, accommodation, child-support, awards and recognition programs have been used in previous pandemics. We also created inventories of resources with guiding notes for quick utility by decision makers on guidelines for health workers (n=24), self-isolation in the community (n=10) and information, education and counselling materials on COVID-19 (n=16). Conclusions: CHWs play a critical role in pandemics like COVID-19. It is important to ensure role clarity, training, supportive supervision, as well as

their work satisfaction, health and well-being. There is a need for more implementation research on CHWs in pandemics like COVID-19.

Comment: National UK programme of community health workers for COVID-19 response April 2020, The Lancet

The coronavirus disease 2019 (COVID-19) pandemic threatens to kill large numbers of people in the UK and to place unprecedented demands on the National Health Service (NHS). In a time of fear, isolation, and growing health inequalities,[10] use of CHWs for the COVID-19 response would boost social coherence and fill gaps that have begun to emerge between health and social care and in-person and virtual access to health care. References 1 WHO Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf Feb 16-24, 2020, 2 M Harris, A Haines, The potential contribution of community health workers to improving health outcomes in UK primary care.

Contribution of paramedics in primary and urgent care: a systematic review 2020, British Journal of General Practice

Background Within the UK, there are now opportunities for paramedics to work across a variety of healthcare settings away from their traditional ambulance service employer, with many opting to move into primary care. Aim To provide an overview of the types of clinical roles paramedics are undertaking in primary and urgent care settings within the UK. Design and setting A systematic review. Method Searches were conducted of MEDLINE, CINAHL, Embase, the National Institute for Health and Care Excellence, the Journal of Paramedic Practice, and the Cochrane Database from January 2004 to March 2019 for papers detailing the role, scope of practice, clinician and patient satisfaction, and costs of paramedics in primary and urgent care settings. Free-text keywords and subject headings focused on two key concepts: paramedic and general practice/primary care. Results In total, 6765 references were screened by title and/or abstract. After full-text review, 24 studies were included. Key findings focused on the description of the clinical role, the clinical work environment, the contribution of paramedics to the primary care workforce, the clinical activities they undertook, patient satisfaction, and education and training for paramedics moving from the ambulance service into primary care. Conclusion Current published research identifies that the role of the paramedic working in primary and urgent care is being advocated and implemented across the UK; however, there is insufficient detail regarding the clinical contribution of paramedics in these clinical settings. More research needs to be done to determine how, why, and in what context paramedics are now working in primary and urgent care, and what their overall contribution is to the primary care workforce.

Public health and community nursing

A call to action for public health nurses during the COVID-19 pandemic May 2020, Public Health Nursing

The authors call on the need to recognize the critical role that public health nurses (PHN) play during infectious disease emergencies, such as the coronavirus disease-201o(COVID-19) pandemic. Topics covered include the factors behind the erosion of the PHN workforce, the negative consequences of the nearly 25 percent reduction in the public health workforce, and the pandemic serving as a catalyst to financial investment in public health nursing.

COVID-19 and district and community nursing May 2020, British Journal of Community Nursing *Abstract only**

The author discusses the impact of the COVID-19 pandemic on the delivery of nursing care in every environment. Topics mentioned include threats presented by non-clinical home setting to personal safety for the community healthcare workforce, confusion and inconsistency in national guidance in relation to personal protective equipment, and an increase in self-care with support for patients from extended families, friends, and neighbours.

What the COVID-19 pandemic tells us about the need to develop resilience in the nursing workforce May 2020, Nursing Management

Most research on resilience in healthcare systems such as the NHS is based on organisational crises, such as nurse shortages, an ageing workforce and financial restrictions. However, nursing can learn lessons from the past to consider how to become more resilient, particularly considering the 2020 COVID-19 pandemic. This article briefly looks at previous pandemics and disasters that have affected healthcare systems, as well as the 2020 COVID-19 pandemic, and considers how nurse leaders can support staff and show organisational resilience during such emergencies. The article also discusses how nurse leaders can develop their own resilience.

Community Pharmacy Staff

Social distancing and the use of PPE by community pharmacy personnel: Does evidence support these measures? May 2020, Research in Social and Administrative Pharmacy

Community pharmacists are one of the most accessible healthcare professionals and are often served as the first point of contact when it comes to minor ailments and health advice. As such, community pharmacists can play a vital role in a country's response to various preventative and public health measures amid the COVID-19 pandemic. Given the essential nature of community pharmacy as a health service, community pharmacies are unlikely to shut down in any foreseeable lockdown scenario. It is therefore important to assess the preventative measure directives for community pharmacies that are in place to safeguard community pharmacy personnel from SARS-CoV-2 in the various parts of the world. Upon reviewing the recommendations of 15 selected countries across five continents (Asia, Europe, Oceania, North America, and Africa) on social distancing and the use of personal protective equipment (PPE) in community pharmacies, we found inconsistencies in the recommended social distance to be practiced within the community pharmacies. There were also varying recommendations on the

use of PPE by the pharmacy personnel. Despite the differences in the recommendations, maintaining recommended social distance and the wearing of appropriate PPE is of utmost importance for healthcare workers, including community pharmacy personnel dealing with day-to-day patient care activities, though full PPE should be worn when dealing with suspected COVID-19 patients.

Of interest

Prevention in the age of information: public education for better health June 2020, IPPR

Tackling preventable illness must remain a top priority for the government in the 2020s. Over half of the disease burden in England is deemed preventable, with one in five deaths attributed to causes that could have been avoided. After many years of improvement, progress has stalled on reducing the number of people suffering from preventable illness. Moreover, compared to other high-income countries, we underperform on this metric. This is not good enough, as the government has recognised in its prevention green paper and the NHS Long Term Plan. This is a welcome shift that begins to recognise the value of prevention in the health sector. Action to reduce the burden of preventable illness will pay off in terms of better health but also for our economy and public services. Prevention leads to longer and healthier lives. But it is also important because improved health drives greater wealth (in particular through higher workforce participation and productivity), makes the NHS and other public services more sustainable, and is a prerequisite of delivering social justice, given the inequalities in health present across our society. Prevention really is better than cure.

Pre-print: Transmission dynamics of COVID-19 and impact on public health Medrxiv, 2020

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not *be used to guide clinical practice.*

In this work we construct a mathematical model for the transmission and spread of coronavirus disease 2019 or COVID-19. Our model features delay terms to account for (a) the time lapse or latency period between contracting the disease and displaying symptoms, and (b) the time lag in testing patients for the virus due to the limited numbers of testing facilities currently available. We find that the delay introduces a significant disparity between the actual and reported time-trajectories of cases in a particular region. Specifically, the reported case histories lag the actual histories by a few days. Hence, to minimize the spread of the disease, lockdowns and similarly drastic social isolation measures need to be imposed some time before the reported figures are approaching their peak values. We then account for the social reality that lockdowns can only be of a limited duration in view of practical considerations. We find that the most effective interval for imposing such a limited-time lockdown is one where the midpoint of the lockdown period coincides with the actual peak of the spread of the disease in the absence of the lockdown. We further show that the true effectivity of imposing a lockdown may be misrepresented and grossly underestimated by the reported case trajectories in the days following the action.

Map roles using the Public Health Skills and Knowledge Framework 18th March 2020, PHE

The Public Health Skills and Knowledge Framework (PHSKF) describes the functions and activities carried out by people working to protect and promote the public's health across the UK. The 13 functions (across areas of technical, context and delivery) are carried out by professionals (the public health workforce) who are fully dedicated to leading and implementing activities that are designed to deliver on public health outcomes in each of the 4 UK nations (England, Wales, Scotland, Northern Ireland). Some workers might carry out functions and activities described in the framework as part of another role. We refer to these workers as the wider workforce.

Faculty of Public Health statement on public health ethics and COVID-19 14th May 2020, Faculty of Public Health

This paper, written by members of theUKFaculty of Public Health's ethics committee, outlines what contributions may be brought from public health ethics perspectives to public debates on responses to Covid-19. It explains some of the questions about values that must be asked, and aims to promote a sustained discourse on how they should be answered.This is for the benefit of engaged public discourse, the public health, and wider health, workforce, and to help support and provide scrutiny in relation to ongoing decision-making.

Workforce planning and strategies for Public Health

Workforce Strategy and Standards document 2018-2021 March 2018, Faculty of Public Health

This strategy has been in development since January 2017. Initial ideas and feedback were sought from the FPH membership through eBulletins, followed by a stakeholder workshop in March 2017 and extensive consultation through various FPH committees, including the Workforce Standing Committee and FPH Board in May 2017.It was then refined, bearing in mind what is feasible for FPH to undertake and deliver, and sent out for further consultation to the wider membership and stakeholders during the summer. After considering all the comments and feedback received, the strategy was finalised and submitted to the Board for approval in November 2017.The strategy will be adapted over time and further iterations will ensure the integration of academic and service capacity building

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Healthy lives, health people: updated on the public health workforce strategy 2016, DH, PHE and Local Government Association (LGA)

Introduction: Following a consultation in 2012, the Department of Health (DH), the Local Government Association (LGA) and Public Health England (PHE) published a public health workforce strategy in May 2013. The strategy contained a number of commitments to be delivered by a range of partner organisations to support and develop the public health workforce. Taken together the commitments in the strategy aim to

• Help us better understand our public health workforce

• Focus on the workforce development role of local authorities
• Give a clearer roadmap for future career pathways and skills development
• Give assurance on the competence and professionalism of all public health specialists
• Improve connections between commissioners of education and training and the end users
• Promote leadership skills
• Embed public health knowledge and capacity across the healthcare workforce

The objective of the strategy is to achieve an even more expert and professional workforce that will be able to deliver innovative, effective and evidence-based interventions, against the Public Health Outcomes Framework, to improve the public's health and reduce health inequalities. We published a progress report on the delivery of the strategy in June 2014,https://www.gov.uk/government/publications/healthy-lives -healthy-people-a-public-workforce-strategy. This review focuses on the progress that has been made since then and sets out next steps. In addition to the work to deliver the commitments in the strategy a great deal of other activity has been undertaken to develop and support the public health workforce including practitioner development schemes, the work of the Standing Group on Public Health , the work of the People in UK Public Health Group and various Making Every Contact Count Programmes. The outcomes of all these workstreams will be reflected in a future strategy to be published in summer 2016.

Wider public health workforce review: 2018 to 2019 March 2019, PHE

Report on the wider public health workforce - across healthcare, social care, emergency services, VCSE, education, employment, criminal justice, housing and planning.

Rethinking the public health workforce 2015, Royal Society of Public Health

Policy recommendations: The findings from 'Understanding the Wider Public Health Workforce' and discussions with various professional and occupation groups show there is a positive ambition to develop the wider public health workforce. The following steps will need to be taken to make the ambition a reality:

• Redefine and communicate who can be involved in supporting the public's health. At system level, Public Health England is currently reviewing the Public Health Skills and Knowledge Framework. This presents an opportunity to include wider workforce occupations in delivering public health.
• Joint working between Local Government Association, Public Health England, Department of Health, Health Education England, public health organisations and employers to drive forward wider workforce planning and capacity building for health and wellbeing.
• Provide education and training to the wider workforce ensuring that they are equipped with the requisite skills, competencies and confidence to deliver public health across a variety of settings.
• Ensure engagement at system level about the important role of the wider workforce in the new models of integrated health and wellbeing.
• Increase public awareness about the role of the wider workforce in public health by developing a brand identity to gain acceptance, acknowledgement and celebration of their work and also increase the prominence of the wider workforce in local communities.

• Agree the services that can be commissioned and delivered by the early adopters of the wider workforce. These could include behaviour change programmes, point of care testing and social prescribing.
• Begin the dialogue with other interested occupations that have the capacity and appetite to be part of the wider public health workforce including postal workers, librarians and leisure staff.
• Support ongoing evaluation and innovation of practice across the wider workforce in collaboration with the What Works for Wellbeing Centre and local academia

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Measuring safe staff levels in the community: the 'DominiC' Workforce management tool
February 2014, British Journal of Community Nursing *Abstract only**

There is significant need to establish and predict what numbers of district nursing staff are needed to provide quality patient care. This is the first in a series of articles sharing the evidence-based and tested solutions being used in clinical practice across the UK to inform caseload and workforce planning. Stockport NHS Foundation Trust's electronic workload management tool 'DominiC' is explored in this article. The tool promotes continuity of patient care, efficient resource allocation and the benchmarking of care. It predicts future service demands and measures these against the staff resources available. Lessons learned from the process of developing and implementing DominiC are shared to help inform clinicians and managers looking for similar workforce planning solutions.

Primary and community care workforce planning and development September 2006, Journal of Advanced Nursing *Abstract only**

Aim. This article reports a study that provided primary and community care managers with information, allowing them to: (a) evaluate the size and mix of their workforce; and (b) develop knowledgeable and skilled teams to meet the demands of growing and changing services. Background. Primary and community care services are growing in the United Kingdom, but workforce planning and development, despite their wide-ranging cost and quality implications, have not received the same attention. Indeed, most primary and community care workforce planning and development issues are universal. Demand 1–1 side workforce planning is concerned not only with the number, but also with staff mix; but how these autonomous and isolated practitioners spend their time is unique. The other side of the equation, workforce supply, raises many recruitment and retention challenges for managers in many countries. Any country's main workforce planning methods apply equally well to primary care, but each is flawed. A second, main problem is that the methods lead to fragmented services, whereas modern workforce planning methods should be multidisciplinary. Consequently, it has never been more important for managers to have data and algorithms to develop appropriate care teams. Method. A large and versatile workforce database, profiling 304 English primary care trusts using demographic, socio-economic, mortality, morbidity, staffing and performance workforce-related variables, compiled in 2002 and updated yearly, is described. Data were supplemented with a systematic literature review leading to a 340-item annotated bibliography; and qualitative interviews with managers. Results. Workforce size and mix are historical and irrational at best. Moreover, the number of variables that influence staffing is growing, thereby complicating workforce planning. Conclusion. Evaluating and adjusting the size and mix of teams using empirically determined community demand and performance variables based on the area's socio-economic characteristics is feasible.

Public health workforce and emergency preparedness/ pandemic preparedness (not specific to COVID-19)

Middle East Respiratory Syndrome (MERS)

Strengthening epidemiologic investigation of infectious diseases in Korea: lessons from the Middle East Respiratory Syndrome outbreak January 2015, Epidemiology and Health

The recent outbreak of Middle East Respiratory Syndrome (MERS) coronavirus infection in Korea resulted in large socioeconomic losses. This provoked the Korean government and the general public to recognize the importance of having a well-established system against infectious diseases. Although epidemiologic investigation is one of the most important aspects of prevention, it has been pointed out that much needs to be improved in Korea. We review here the current status of the Korean epidemiologic service and suggest possible supplementation measures. We examine the current national preventive infrastructure, including human resources such as Epidemic Intelligence Service officers, its governmental management, and related policies. In addition, we describe the practical application of these resources to the recent MERS outbreak and the progress in preventive measures. The spread of MERS demonstrated that the general readiness for emerging infectious diseases in Korea is considerably low. We believe that it is essential to increase society's investment in disease prevention. Fostering public health personnel, legislating management policies, and establishing research centers for emerging infectious diseases are potential solutions. Evaluating international preventive systems, developing cooperative measures, and initiating improvements are necessary. We evaluated the Korean epidemiologic investigation system and the public preventive measures against infectious diseases in light of the recent MERS outbreak. We suggest that governmental authorities in Korea enforce preventive policies, foster the development of highly qualified personnel, and increase investment in the public health domain of infectious disease prevention.

Sever Acute Respiratory Syndrome (SARS)

Evaluating the effectiveness of an emergency preparedness training programme for public health staff in China May 2008, Public Health

Background: The severe acute respiratory syndrome (SARS) crisis of 2003 provided a new urgency in China in terms of preparing public health staff to respond effectively to public health emergencies. Although the Chinese Government has already carried out a series of emergency education and training programmes to improve public health staff's capability of emergency preparedness, it remains unclear if these training programmes are effective and feasible. The purpose of this research was to evaluate an emergency preparedness training programme and to develop a participatory training approach for emergency response. Methods: Seventy-six public health staff completed the emergency preparedness training programme. The effectiveness of the training was evaluated by questionnaire before training, immediately after training and 12 months after training (follow-up). Additionally, semi-structured interviews were conducted throughout the training period. Results: The emergency preparedness training improved the knowledge levels and increased attitudinal and behavioural intention scores for emergency preparedness (P<0.01). The results at follow-up showed that the knowledge levels and attitudinal/behavioural intention scores of participants decreased slightly (P>0.05) compared with levels immediately after training (P<0.01). However, there was a significant

increase compared with before training (*P*<0.01). Moreover, more than 80% of participants reported that the training process and resources were scientific and feasible. Conclusions: The emergency preparedness training programme met its aims and objectives satisfactorily, and resulted in positive shifts in knowledge and attitudinal/behavioural intentions for public health staff. This suggests that this emergency training strategy was effective and feasible in improving the capability of emergency preparedness.

Influenza (H1N1)

The epidemiology and surveillance response to pandemic influenza A (H1N1) among local health departments in the San Francisco Bay Area January 2013, BMC Public Health

Background: Public health surveillance and epidemiologic investigations are critical public health functions for identifying threats to the health of a community. Very little is known about how these functions are conducted at the local level. The purpose of the Epidemiology Networks in Action (EpiNet) Study was to describe the epidemiology and surveillance response to the 2009 pandemic influenza A (H1N1) by city and county health departments in the San Francisco Bay Area in California. The study also documented lessons learned from the response in order to strengthen future public health preparedness and response planning efforts in the region.Methods: In order to characterize the epidemiology and surveillance response, we conducted key informant interviews with public health professionals from twelve local health departments in the San Francisco Bay Area. In order to contextualize aspects of organizational response and performance, we recruited two types of key informants: public health professionals who were involved with the epidemiology and surveillance response for each jurisdiction, as well as the health officer or his/her designee responsible for H1N1 response activities. Information about the organization, data sources for situation awareness, decision-making, and issues related to surge capacity, continuity of operations, and sustainability were collected during the key informant interviews. Content and interpretive analyses were conducted using ATLAS.ti software.Results: The study found that disease investigations were important in the first months of the pandemic, often requiring additional staff support and sometimes forcing other public health activities to be put on hold. We also found that while the Incident Command System (ICS) was used by all participating agencies to manage the response, the manner in which it was implemented and utilized varied. Each local health department (LHD) in the study collected epidemiologic data from a variety of sources, but only case reports (including hospitalized and fatal cases) and laboratory testing data were used by all organizations. While almost every LHD attempted to collect school absenteeism data, many respondents reported problems in collecting and analyzing these data. Laboratory capacity to test influenza specimens often aided an LHD's ability to conduct disease investigations and implement control measures, but the ability to test specimens varied across the region and even well-equipped laboratories exceeded their capacity. As a whole, the health jurisdictions in the region communicated regularly about key decision-making (continued on next page) (continued from previous page) related to the response, and prior regional collaboration on pandemic influenza planning helped to prepare the region for the novel H1N1 influenza pandemic. The study did find, however, that many respondents (including the majority of epidemiologists interviewed) desired an increase in regional communication about epidemiology and surveillance issues.Conclusion: The study collected information about the epidemiology and surveillance response among LHDs in the San Francisco Bay Area that has implications for public health preparedness and emergency response training, public health best practices, regional public health collaboration, and a perceived need for information sharing.

Perception of epidemiological competencies by public health students in Mexico and Colombia during the influenza A (H1N1) epidemic October 2011, Revista Panamericana de Salud Publica *Abstract only in English**

Objective. Learn about the perception of public health students in Mexico and Colombia regarding the management of the influenza A (H1N1) epidemic to determine which curriculum contents in epidemiological education can be improved. Methods. Survey administered to graduate students during the epidemic, from June to August 2009. The 30 epidemiological competencies for "intermediate epidemiologists" of the Council of State and Territorial Epidemiologists were evaluated. The results were described through stratification by covariables, and the less developed competencies were identified through exploratory factor analysis. Results. A total of 154 students participated, 55.8% of whom were in Mexico. Significant differences in the student profile from each country were observed, which partially explains the perception of response to the epidemic. The first factor, which explains 21.5% of the variance, had lower scores in the factor analysis. This factor was associated with competencies related to the links between health personnel and the community, in which knowledge of the social sciences and communication skills are relevant. Conclusions. The students perceived that the response to the epidemic could have been better. It is suggested that public health human resources education include subjects related to the impact of culture on behavior and thinking, recognition of the prejudices of experts, effective community-level communication, and the ability to adapt to new situations. The "natural experiment" of the epidemic facilitated the identification of areas of opportunity to improve the teaching of epidemiology to health personnel.

Other

The Local Health Department Mandate and Capacity for Community Engagement in Emergency Preparedness: A National View Over Time July 2018, Journal of Public Health Management and Practice *Abstract only**

Context: Local health departments (LHDs) perform the highly valued, yet time- and staff-intensive work of community engagement in public health emergency preparedness (CE-PHEP) when the Great Recession has had lingering effects on their organizational capacity. Objective: Track the extent to which LHDs still embrace collaborative, whole community approaches to PHEP in a historically low resource environment. Design: National survey in 2015 of LHDs using a self-administered online questionnaire regarding LHD practices and resources for CE-PHEP first fielded in 2012 ("The Community Engagement for Public Health Emergency Preparedness Survey"). Differences in 2015 survey responses were reviewed, and comparisons made between 2012 and 2015 responses. Setting: Randomized sample of 811 LHDs drawn from 2565 LHDs that were invited to participate in the 2010 National Profile of LHDs and participated in the 2012 CE-PHEP survey. Sample selection was stratified by geographic location and size of population served. Participants: Emergency preparedness coordinators reporting on the LHDs they serve. Main Outcome Measure: Community engagement in public health emergency preparedness intensity as measured by a scoring system that valued specific practices on the basis of the community capacity and public participation they represented. Results: Survey response was 30%; 243 LHDs participated. The CE-PHEP activities and intensity scores remained unchanged from 2012 to 2015. Local health departments that

reported having an explicit CE-PHEP policy and experienced CE-PHEP staff member--2 of the top 3 predictors of CE-PHEP intensity--have dropped between 2012 and 2015. The numbers of LHDs with a CE-PHEP budget, also an important predictor of intensity, have not increased in a statistically significant way during that same period. Conclusions: Local health departments appear to be in a CE-PHEP holding pattern, presumably pushed forward by the doctrinal focus on partner-centered preparedness but held back by capacity issues, in particular, limited staff and partner support. Local health departments operating in low-resource environments are encouraged to formalize their CE-PHEP policy to advance performance in this arena.

Epidemic forecasts as a tool for public health: interpretation and (re)calibration February 2018, Australian and New Zealand Journal of Public Health

Abstract: Objective: Recent studies have used Bayesian methods to predict timing of influenza epidemics many weeks in advance, but there is no documented evaluation of how such forecasts might support the day-to-day operations of public health staff. Methods: During the 2015 influenza season in Melbourne, Australia, weekly forecasts were presented at Health Department surveillance unit meetings, where they were evaluated and updated in light of expert opinion to improve their accuracy and usefulness. Results: Predictive capacity of the model was substantially limited by delays in reporting and processing arising from an unprecedented number of notifications, disproportionate to seasonal intensity. Adjustment of the predictive algorithm to account for these delays and increased reporting propensity improved both current situational awareness and forecasting accuracy. Conclusions: Collaborative engagement with public health practitioners in model development improved understanding of the context and limitations of emerging surveillance data. Incorporation of these insights in a quantitative model resulted in more robust estimates of disease activity for public health use. Implications for public health: In addition to predicting future disease trends, forecasting methods can quantify the impact of delays in data availability and variable reporting practice on the accuracy of current epidemic assessment. Such evidence supports investment in systems capacity.

A Strategy to Enhance Student Experiences in Public Health Emergency Preparedness and Response April 2017, Nursing Administration Quarterly

Development of the public health nursing workforce is crucial to advancing our nation's health. Many organizations, including the American Association of Colleges of Nursing, Centers for Disease Control and Prevention, and the US Department of Health and Human Services, have identified the need for strengthening academia's connection to public health and tailoring experiences to enhance workforce competency. The Oklahoma Medical Reserve Corps (OKMRC) Nursing Student Summer Externship was developed as a strategy to provide nursing students with strengthened knowledge and skills in disaster response through a structured summer volunteer- experience with nurse educators within the OKMRC. The Medical Reserve Corps is a national organization with more than 200000 volunteers dedicated to strengthening public health, improving emergency response capabilities, and building community resiliency. In the summer of 2015, the OKMRC offered a 10-week public health emergency preparedness

and response externship pilot program to 8 nursing students. In the summer of 2016, the program expanded to include 3 Oklahoma baccalaureate nursing programs. Students completed trainings and participated in activities designed to provide a broad base of knowledge, an awareness of the local disaster plans, and leadership skills to assist their communities with preparedness and disaster response.

A National Survey on Health Department Capacity for Community Engagement in Emergency Preparedness March 2015, Journal of Public Health Management *Abstract only**

Context: Limited systematic knowledge exists about how public health practitioners and policy makers can best strengthen community engagement in public health emergency preparedness ("CE-PHEP"), a top priority for US national health security. Objectives: To investigate local health department (LHD) adoption of federally recommended participatory approaches to PHEP and to identify LHD organizational characteristics associated with more intense CE-PHEP. Design: National survey in 2012 of LHDs using a self-administered Web-based questionnaire regarding LHD practices and resources for CE-PHEP ("The Community Engagement for Public Health Emergency Preparedness Survey"). Differences in survey responses were examined, and a multivariate analysis was used to test whether LHD organizational characteristics were associated with differences in CE-PHEP intensity. Setting: A randomized sample of 754 LHDs drawn from the 2565 LHDs that had been invited to participate in the 2010 National Profile of LHDs. Sample selection was stratified by the size of population served and geographic location. Participants: Emergency preparedness coordinators reporting on their respective LHDs. Main Outcome Measure: CE-PHEP intensity as measured with a scoring system that rated specific CE-PHEP practices by LHD according to the relative degrees of public participation and community capacity they represented. Results: Survey response rate was 61%. The most common reported CE-PHEP activity was disseminating personal preparedness materials (90%); the least common was convening public forums on PHEP planning (22%). LHD characteristics most strongly associated with more intense CE-PHEP were having a formal CE-PHEP policy, allocating funds for CE-PHEP, having strong support from community-based organizations, and employing a coordinator with prior CE experience. Conclusions: Promising ways to engage community partners more fully in the PHEP enterprise are institutionalizing CE-PHEP objectives, employing sufficient and skilled staff, leveraging current community-based organization support, and aligning budgets with the value of CE-PHEP to US national health security.

How to characterize the public health workforce based on essential public health operations? environmental public health workers in the Netherlands as an example January 2015, BMC Public Health

Background: Public health workforce planning and policy development require adequate data on the public health workforce and the services provided. If existing data sources do not contain the necessary information, or apply to part of the workforce only, primary data collection is required. The aim of this study was to develop a strategy to enumerate and characterize the public health workforce and the provision of essential public health operations (EPHOs), and apply this to the environmental public health workforce in the Netherlands as an example.Methods: We specified WHO's EPHOs for environmental public health and developed an online questionnaire to assess individual involvement in these. Recruitment was a two-layered process. Through organisations with potential involvement in environmental public health, we invited environmental public health workers (n = 472) to participate in a national

survey. Existing benchmark data and a group of national environmental public health experts provided opportunities for partial validity checks.Results: The questionnaire was well accepted and available benchmark data on physicians supported the results of this study regarding the medical part of the workforce. Experts on environmental public health recognized the present results on the provision of EPHOs as a reasonable reflection of the actual situation in practice. All EPHOs were provided by an experienced, highly educated and multidisciplinary workforce. 27 % of the total full-time equivalents (FTEs) was spent on EPHO 'assuring governance for health'. Only 4 % was spent on 'health protection'. The total FTEs were estimated as 0.66 /100,000 inhabitants.Conclusions: Characterisation of the public health workforce is feasible by identification of relevant organisations and individual workers on the basis of EPHOs, and obtaining information from those individuals by questionnaire. Critical factors include the operationalization of the EPHOS into the field of study, the selection and recruitment of eligible organisations and the response rate within organisations.. When existing professional registries are incomplete or do not exist, this strategy may provide a start to enumerate the quantity and quality of the public health within or across countries.

The Public Health Workforce and Willingness to Respond to Emergencies: A 50-State Analysis of Potentially Influential Laws March 2014, Journal of Law, Medicine and Ethics *Abstract only**

The article provides analyses of various state laws in America which reportedly have the potential to influence the public health workforce's participation in emergency responses as of 2014. The roles that American state public health laws play in public health emergency planning, response, and recovery are assessed. An H1N1 influenza pandemic and natural disasters such as Hurricanes

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The Common Ground Preparedness Framework: A Comprehensive Description of Public Health Emergency Preparedness April 2020, American Journal of Public Health

Currently, public health emergency preparedness (PHEP) is not well defined. Discussions about public health preparedness often make little progress, for lack of a shared understanding of the topic. We present a concise yet comprehensive framework describing PHEP activities. The framework, which was refined for 3 years by state and local health departments, uses terms easily recognized by the public health workforce within an information flow consistent with the National Incident Management System. To assess the framework's completeness, strengths, and weaknesses, we compare it to 4 other frameworks: the RAND Corporation's PREPARE Pandemic Influenza Quality Improvement Toolkit, the National Response Framework's Public Health and Medical Services Functional Areas, the National Health Security Strategy Capabilities List, and the Centers for Disease Control and Prevention's PHEP Capabilities.

Linking public health agencies and hospitals for improved emergency preparedness: North Carolina's public health epidemiologist program January 2012, BMC Public Health

Background: In 2003, 11 public health epidemiologists were placed in North Carolina's largest hospitals to enhance communication between public health agencies and healthcare systems for improved emergency preparedness. We describe the specific services public health epidemiologists provide to local health departments, the North Carolina Division of Public Health, and the hospitals in which they are based, and assess the value of these services to stakeholders.Methods: We surveyed and/or interviewed public health epidemiologists, communicable disease nurses based at local health departments, North Carolina Division of Public Health staff, and public health epidemiologists' hospital supervisors to 1) elicit the services provided by public health epidemiologists in daily practice and during emergencies and 2) examine the value of these services. Interviews were transcribed and imported into ATLAS.ti for coding and analysis. Descriptive analyses were performed on quantitative survey data.Results: Public health epidemiologists conduct syndromic surveillance of community-acquired infections and potential bioterrorism events, assist local health departments and the North Carolina Division of Public Health with public health investigations, educate clinicians on diseases of public health importance, and enhance communication between hospitals and public health agencies. Stakeholders place on a high value on the unique services provided by public health epidemiologists.Conclusions: Public health epidemiologists effectively link public health agencies and hospitals to enhance syndromic surveillance, communicable disease management, and public health emergency preparedness and response. This comprehensive description of the program and its value to stakeholders, both in routine daily practice and in responding to a major public health emergency, can inform other states that may wish to establish a similar program as part of their larger public health emergency preparedness and response system.

Determinants of emergency response willingness in the local public health workforce by jurisdictional and scenario patterns: a cross-sectional survey January 2012, BMC Public Health

Background: The all-hazards willingness to respond (WTR) of local public health personnel is critical to emergency preparedness. This study applied a threat-and efficacy-centered framework to characterize these workers' scenario and jurisdictional response willingness patterns toward a range of naturally-occurring and terrorism-related emergency scenarios.Methods: Eight geographically diverse local health department (LHD) clusters (four urban and four rural) across the U.S. were recruited and administered an online survey about response willingness and related attitudes/beliefs toward four different public health emergency scenarios between April 2009 and June 2010 (66% response rate). Responses were dichotomized and analyzed using generalized linear multilevel mixed model analyses that also account for within-cluster and within-LHD correlations.Results: Comparisons of rural to urban LHD workers showed statistically significant odds ratios (ORs) for WTR context across scenarios ranging from 1.5 to 2.4. When employees over 40 years old were compared to their younger counterparts, the ORs of WTR ranged from 1.27 to 1.58, and when females were compared to males, the ORs of WTR ranged from 0.57 to 0.61. Across the eight clusters, the percentage of workers indicating they would be unwilling to respond regardless of severity ranged from 14-28% for a weather event; 9-27% for pandemic influenza; 30-56% for a radiological 'dirty' bomb event; and 22-48% for an inhalational anthrax bioterrorism event. Efficacy was consistently identified as an important independent predictor of WTR.Conclusions: Response willingness deficits in the local public health workforce pose a threat to all-hazards response capacity and health security. Local public health agencies and their stakeholders may incorporate key findings, including identified scenario-based willingness gaps and the

importance of efficacy, as targets of preparedness curriculum development efforts and policies for enhancing response willingness. Reasons for an increased willingness in rural cohorts compared to urban cohorts should be further investigated in order to understand and develop methods for improving their overall response.

Public Health Emergency Preparedness Exercises: Lessons Learned November 2010, Public Health Reports

The Harvard School of Public Health Center for Public Health Preparedness exercise program has two aims: (1) educating the public health workforce on key public health system emergency preparedness issues, and (2) identifying specific systems-level challenges in the public health response to large-scale events. Rigorous evaluation of 38 public health emergency preparedness (PHEP) exercises employing realistic scenarios and reliable and accurate outcome measures has demonstrated the usefulness of PHEP exercises in clarifying public health workers' roles and responsibilities, facilitating knowledge transfer among these individuals and organizations, and identifying specific public health systems-level challenges.

Improving emergency preparedness capability of rural public health personnel in China June 2010, Public Health

Objectives: Since the outbreaks of severe acute respiratory syndrome and avian influenza, improving the emergency preparedness capability of rural public health personnel has become a new priority in building the infrastructure needed to address public health emergencies. The Chinese Government has carried out a series of emergency preparedness education and training programmes to improve the emergency preparedness capability of rural public health personnel nationwide. The purpose of this study was to evaluate and develop a participatory emergency preparedness training programme for rural public health personnel. Study design: The research emphasizes the major components of instructional design, including assessing, designing, delivering and evaluating training. The approach is an integrated system with results from one phase influencing the next, so that a series of steps are followed when developing, implementing and evaluating emergency preparedness training. Methods: The 226 participants were rural public health personnel from 84 different rural centres for disease control and prevention in China. The programme was evaluated by anonymous questionnaires and semi-structured interviews held prior to training, immediately post-training and 12-months after training (follow-up). Results: The emergency preparedness training resulted in positive shifts in knowledge and skills for rural public health personnel. At follow-up, the knowledge and skill scores of participants declined slightly compared with the post-test levels ($P > 0.05$). However, there was a significant increase compared with the pre-test levels ($P < 0.01$). Moreover, more than 90% of participants reported that this training provided a valuable learning experience and reinforced the importance of emergency preparedness. Conclusions: The emergency preparedness training programme was effective and feasible in improving the performance of rural public health personnel on emergency response. Further studies are needed to test the efficacy of the training approach for competency improvement.

Public health preparedness of post-Katrina and Rita shelter health staff November 2009, Prehospital and Disaster Medicine *Abstract only**

Introduction: During 2005, Hurricanes Katrina and Rita struck the US Gulf Coast, displacing approximately two million people. With >250,000 evacuees in shelters, volunteers from the American Red Cross (ARC) and other nongovernmental and faith-based organizations provided services. The objective of this study was to evaluate the composition, pre-deployment training, and recognition of scenarios with outbreak potential by shelter health staff.Methods: A rapid assessment using a 36-item questionnaire was conducted through in-person interviews with shelter health staff immediately following Hurricanes Katrina and Rita. Data were collected by sampling at shelters located throughout five ARC regions in Texas. The survey focused on: (1) public health capacity; (2) level of public health awareness among staff; (3) public health training prior to deployment; and (4) interest in technical support for public health concerns. In addition, health staff volunteers were asked to manage 11 clinical scenarios with possible public health implications.Results: Forty-three health staff at 24 shelters were interviewed. Nurses comprised the majority of shelter health volunteers and were present in 93% of shelters; however, there were no public health providers present as staff in any shelter. Less than one-third of shelter health staff had public health training, and only 55% had received public health information specific to managing the health needs of evacuees. Only 37% of the shelters had a systematic method for screening the healthcare needs of evacuees upon arrival. Although specific clinical scenarios involving case clusters were referred appropriately, 60% of the time, 75% of all clinical scenarios with epidemic potential did not elicit proper notification of public health authorities by shelter health staff. In contrast, clinical scenarios requiring medical attention were correctly referred >90% of the time. Greater access and support from health and public health experts was endorsed by 93% of respondents.Conclusions: Public health training for sheltering operations must be enhanced and should be a required component of pre-deployment instruction. Development of a standardized shelter intake health screening instrument may facilitate assessment of needs and appropriate resource allocation. Shelter health staff did not recognize or report the majority of cases with epidemic potential to public health authorities. Direct technical support to shelter health staff for public health concerns could bridge existing gaps and assist surveillance efforts.

Education and training of hospital workers: who are essential personnel during a disaster? May 2009, Prehospital and Disaster Medicine *Abstract only**

Hospital plans often vary when it comes to the specific functional roles that are included in emergency and incident management positions. Bioterrorism coordinators and emergency managers for 31 hospitals in a seven-county region outside of a major metropolitan area, with urban, suburban, and rural demographics were surveyed to determine which specific functional roles were considered "essential" to their hospital's emergency operations plans. Furthermore, they were asked to estimate the percentage of their "essential" staff trained to perform the functional roles delineated in the hospital's plan. Responses were entered into a database and descriptive statistical computations were performed. Only three categories of hospital personnel were reported to be "essential" by all hospitals to their emergency preparedness plans:

emergency department physicians, nurse, and support staff. Training for overall "essential" staff ranged by hospital 73.6-83.3%. Some hospitals reported that these staff members have received no training in their anticipated role based on the hospital emergency response plan. Allied health professionals and emergency medical technicians/paramedics (that are employed by hospitals) had the least amount of training on their role in the hospital preparedness and response plan, 33.3% and 22.2% respectively. Without improved guidance on benchmarks for preparedness from regulators and professional organizations, hospitals will continue to lack the capacity to effectively respond to disasters and public health emergencies.

Developing disaster preparedness competence: an experiential learning exercise for multiprofessional education January 2008, Teaching and learning in medicine *Abstract only**

BACKGROUND: The hurricane disasters of 2005 and the threat of pandemic infectious diseases compel medical educators to develop emergency preparedness training for medical students and other health care professional students. DESCRIPTION: This article describes an experiential exercise for learning a number of the general core competencies in the 2003 AAMC report titled 'Training Future Physicians about Weapons of Mass Destruction.' A modified tabletop exercise for medical and veterinary students, which was developed and implemented in 2005, is described. The exercise focused on Highly Pathogenic Avian Influenza (HPAI), an emerging infectious disease scenario that raised the possibility of biological attack. The students were assigned roles in small groups, such as community physicians, hospital personnel, public health officials, veterinarians, school nurses, and emergency managers. Fifteen faculty members were recruited from these various areas of expertise. Pre- and posttesting of medical students showed significant gains in knowledge. The authors describe the scenario, small-group role playing, study questions, injects, Web sites and readings, and evaluation tools. CONCLUSIONS: This experiential exercise is an effective, inexpensive, and easily adapted tool for promoting multiple competencies in mass health emergency preparedness for a variety of health care students including medical, veterinary, public health, and nursing students.

Rapid vaccine distribution in nontraditional settings: lessons learned from Project VIVA June 2007, Journal of Community Health Nursing *Abstract only**

With growing fear of a worldwide influenza pandemic, programs that can rapidly vaccinate a broad range of persons are urgently needed. Vaccination rates are low among disadvantaged and hard-to-reach populations living within urban communities, and delivering vaccines to these groups may prove challenging. Project VIVA1 (Venue-Intensive Vaccination for Adults), staffed by teams of nurses and outreach workers, aimed to deliver vaccines rapidly within disadvantaged neighborhoods in New York City. Project VIVA nurses offered free influenza vaccine door-to-door and on street corners over 10 days in October, 2005. A total of 1,648 people were vaccinated, exceeding expectation. Careful selection and training of project staff, community involvement in project development, community outreach, and prioritizing street-based distribution may be key factors in an effective rapid vaccination program. In conclusion, this project may be replicated in other communities and utilized for annual vaccination campaigns and in the event of a pandemic.

Outbreak investigations: community participation and role of community and public health nurses May 2006, Public Health Nursing *Abstract only**

Community and public health nurses (C/PHNs) may play a vital role in the investigation of disease outbreaks. C/PHNs possess skills in conducting interviews on sensitive subjects and in collaborating with communities. C/PHNs maintain key links to community providers, symptomatic clients, their families and associates, as well as community institutions where outbreaks occur. This combination of skills makes C/PHNs ideally suited to perform outbreak investigations. There are, however, pressing questions about whether C/PHNs are adequately prepared to contribute to investigation outcomes, to foster participation of affected communities, and to fully apply nursing skills to outbreak investigations to stop the spread of disease. Using one case study, the authors explore investigation outcomes, community participation issues, educational preparation, and public health funding and workforce policies required to achieve these ends successfully. One model of community participation in the steps of outbreak investigation and several Quad Council domains and competencies are proposed for use in practice. Questions regarding the use of emergency preparedness funding and employment of C/PHNs in epidemiology roles are raised.

Using blended learning in training the public health workforce in emergency preparedness March 2006, Public Health Reports

Events such as the 2001 terrorist attacks in New York City and Washington DC, the subsequent U.S. anthrax exposures, the 2003 Severe Acute Respiratory Syndrome (SARS) epidemic, the 2004 tsunami in Sri Lanka, and Hurricane Katrina in 2005 that devastated the Gulf Coast speak to the critical need to prepare and train a front-line workforce that includes public health personnel, medical care professionals, firstresponders, and a volunteer corps.[1] There are an estimated 500,000 people comprising the U.S. public health workforce who work at local, state, and federal agencies and public health schools. Further, it is estimated that three million people in the health care system (from hospitals to voluntary health organizations) contribute to the U.S. public health infrastructure.[1] Such a sizeable and diverse workforce, coupled with the new and constantly changing demands on public health practitioners, raises concern that the United States lacks the capacity to educate and prepare its professionals for future challenges.[2] The U.S. Department of Health and Human Services 1997 report, *The Public Health Workforce: An Agenda for the 21st Century*, recognizes this gap in education, stating that "compelling and urgent programmatic forces are making enhanced training and education opportunities for public health professionals a necessity."[2] The report further argues that distance learning may begin to bridge this gap by providing a systematic process for connecting learners with valuable resources despite being separated by time and place.

Development of a training curriculum for public health preparedness November 2005, Journal of Public Health Management *Abstract only**

We describe the development of a 2-day training curriculum in emergency public health to improve the competency of public health personnel to prepare for, and respond to, both natural and human-caused disaster hazards. The training is conducted in a face-to-face setting and content is mapped to recognized emergency preparedness competencies for public health

workers. The training materials are uniquely structured to the specific hazards, demographics, resources, and local emergency response agencies for each jurisdiction. This training program incorporates a series of challenging interactive scenarios that reinforce decision making in a public health emergency. Pretesting and posttesting are used to evaluate knowledge gained by participants. This interactive approach aligns with the principles of adult learning, and training evaluations indicate that this method is an effective integration of process and content.

Emergency preparedness in Georgia: an assessment of public health training needs September 2005, American Journal of Health Education *Athens log in required**

In order to maintain a strong front against both terrorist and natural threats, it is incumbent upon the public health system to employ workers who possess the skills and knowledge required to protect the health of the nation. The aim of this study is to contribute to an understanding of the learning needs of the public health workforce as the needs relate to bioterrorism and emerging health threats. The findings of a competency-based needs assessment conducted for public health workers in the state of Georgia will be presented. Specifically, this study uses data collected from Georgia public health workers to: 1) identify the bioterrorism and emerging health threat competencies that are regarded as 'important' and 'very important' to job responsibilities; and 2) the corresponding self-reported current levels of ability for those competencies. The findings show a gap between the job responsibilities and the related abilities of Georgia's public health workforce. Although there is significant variability in the extent of these differences, it is apparent that the gap persists across all competencies.

Emergency preparedness in Geor

Opportunities for community health workers to contribute to global efforts to end tuberculosis March 2020, Global Public Health

Tuberculosis (TB) has emerged as the leading infectious cause of death globally. New paradigms are needed to reduce TB rates and mortality. Programs harnessing the potential of community health workers (CHWs) to enhance TB prevention and care have shown great promise. In this perspective article, we review the history of CHW-based efforts to prevent and treat TB, present evidence illustrating the effectiveness of CHWs across the entire cascade of TB care, and outline additional opportunities for CHWs to address challenges particular to the TB pandemic. Despite many promising studies, knowledge gaps persist and we suggest an agenda for future research on the role of CHWs in TB prevention and care.

Redesigning Primary Care to Tackle the Global Epidemic of Noncommunicable Disease March 2015, American Journal of Public Health

Noncommunicable diseases (NCDs) have become the major contributors to death and disability worldwide. Nearly 80% of the deaths in 2010 occurred in low- and middle-income countries, which have experienced rapid population aging, urbanization, rise in smoking, and changes in diet and activity. Yet the health systems of low- and middle-income countries, historically oriented to infectious disease and often severely underfunded, are poorly prepared for the challenge of caring for people with cardiovascular disease, diabetes, cancer, and chronic respiratory disease. We have discussed how primary care can be redesigned to tackle the challenge of NCDs in resource-constrained countries. We suggest that four changes will be required: integration of services, innovative service delivery, a focus on patients and communities, and adoption of new technologies for communication. INSETS: Brazil's Family Health Teams Promote One-Stop, Integrated Care...;Lay Worker-Led Community-Based Training for Chronic Disease...;M-Health for Diabetes Self-Management in Honduras.

Response of public health workers to various emergencies January 2009, AAOHN

In recent years, emergency preparedness has continued to be a major focus for many health care providers. This study measured public health workers' opinions on disaster preparedness, assessed workers' likelihood of reporting to various types of disasters, and evaluated conditions that will encourage workers to report to work. A focus group and literature search were conducted to inform a survey that would assess attitudes about disasters. Frequencies were calculated on survey responses. Most respondents believed other employees could perform their jobs during a disaster; however, fewer than two thirds thought their coworkers would report to work under such circumstances. Fewer than three fourths of respondents would report to work during an emergency involving a known chemical, an unknown biological, a radiological, a biological incurable, or an unknown chemical agent. These results indicate training gaps that should be addressed in future training sessions at the two health departments surveyed.

The role of public health nursing in emergency preparedness and responsev September 2005, Nursing Clinical of North America

Public health services are vital to homeland security and defense, and nurses make up the majority of public health care workers. This article identifies issues in preparing for bioterrorism and describes the role of public health nurses in bioterrorism preparedness. Copyright © 2005 by Elsevier Science (USA).

Effectiveness of an emergency preparedness training program for public health nurses in New York City July 2004, Family and Community Health *Abstract only**

A public health workforce that is competent to respond to emergencies is extremely important. We report on the impact of a training program designed to prepare public health nurses to respond appropriately to emergencies. The program focused on the basic public health emergency preparedness competencies and the emergency response role of public health workers employed by the New York City School Department of Health and Mental Hygiene

School Health Program. The evaluation methods included pre/post-testing followed by a repeat post-test one month after the program. The program resulted in positive shifts in both knowledge and emergency response attitudes.

Public health worker competencies for emergency response May 2002, Journal of Public Health Management and Practice

Emergency preparedness is an expectation of public health organizations and an expectation of individual public health practitioners. Organizational performance standards for public health agencies have been developed during the last several years, providing a foundation for the development of competency statements to guide individual practice in public health program areas, like emergency response. This article provides results from a project that developed emergency preparedness and response competencies for individual public health workers. Documentation of the qualitative research methods used, which include competency validation with the practice community, can be applied to competency development in other areas of public health practice.

Appendix

Sources and Databases Searched

Google, NHS Evidence, Public Health England, Royal Society of Public Health and the Local Government Association (LGA) were searched. The pre-print database Medrxiv was searched and Healthcare Databases Advanced Search (HDAS) was used to search the following: Medline; CINAHL; Embase. Google Scholar was used to citation match and find further relevant papers.

Search Strategies

Key words and phrases included: “public health”; “health protection workforce”; “community health worker*”; “support worker*”; “emergency preparedness”; “pandemic planning”; “epidemic planning”; “workforce planning”

For more detail on the full list of phrases, and search methodologies, please see the strategies below.

HDAS

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ategy%20Public%20H

Medrxiv “public health” and workforce OR staff (medrxiv) 11/6/20 Workforce (medrxiv) 11/6/20 “community health worker” (medrxiv) 11/6/20

Google "public health workforce" site: gov.uk (11/6/20) “public health workforce” AND (COVID-19 OR coronavirus) (11/6/20)

NHS Evidence “public health workforce” December 2019- present (11/6/20)

Searching the literature retrieved the information provided. We recommend checking the relevance and critically appraising the information contained within when applying to your own decisions, as we cannot accept responsibility for actions taken based on it. Every effort has been made to ensure that the information supplied is accurate, current and complete, however for various reasons it may not represent the entire body of information available.

*Help accessing articles or papers

Where a report/ journal article or resource is freely available the link or PDF has been provided. If an NHS OpenAthens account is required this has been indicated. If you do not have an OpenAthens account you can self-register here. If you need help accessing an article, or have any other questions, contact the Knowledge Management team for support (see below).

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