PDF version

Report

Maha Aljuaid,[1] Ahmad Deeb,[1] Nabiha Tashkandi,[1] Reem Al Rowaithy[1] and Muneera Al Shammary [1]

[1]King Saud bin Abdulaziz University for Health Sciences, King Abdullah International Medical Research Center, Nursing Department, King Abdulaziz Medical City, Ministry of National Guard Health Affairs, Riyadh, Saudi Arabia. (Correspondence to: Maha Aljuaid: mahawij@gmail.com).

Abstract

Background: The COVID-19 pandemic spread rapidly globally, making the WHO to declare it a public health emergency of international concern. The ability of health institutions to screen and test for COVID-19 has been critical in detecting, preventing, and managing the spread of the disease.

Aims: This report documents lessons from the ambulatory care nursing for COVID-19 contact tracing at a tertiary care hospital.

Methods: In March 2020, a multidisciplinary team consisting of staff of the Primary Healthcare Services, Ambulatory Care Center, Infection Prevention and Control Department, and Nursing Services at the Ministry of National Guard Health Affairs in Riyadh, Saudi Arabia, worked collaboratively to establish 2 dedicated COVID-19 contact tracing clinics away from hospital premises, one clinic established for the public and another for hospital staff. Surveillance system was established to detect and contain as many cases as possible. This report highlights the process of establishing and maintaining the structure and managing workflow of the contact tracing clinics. We calculated the number of nasopharyngeal swabs and the daily average number of patient visits for both clinics between March 2020 and March 2021.

Results: Over the one-year period, the clinics served 79 146 visitors with an average of 52 visits for staff, 159 visits for adults, and 16 visits for children per day. The 2 clinics conducted 73 924 polymerase chain reaction tests. There was zero transmission of COVID-19 infection to staff working at both clinics.

Conclusion: Despite the challenge of setting up contact tracing clinics, the decision to use separate geographic locations contributed to reducing the risk of infection exposure among staff of the clinics. Effective implementation of contact tracing interventions relies on interdepartmental cooperation and effective communication to contain the risk of viral spread.

Keyword: COVID-19, nursing, contact tracing, surveillance, public health, preparedness, infection prevention, Saudi Arabia

Citation: Aljuaid M; Deeb A; Tashkandi N; Al Rowaithy R; Al Shammary M. Nurses' experiences of managing COVID-19 contact tracing clinics in a tertiary care hospital. East Mediterr Health J. 2023;29(3):217–223. https://doi.org/10.26719/emhj.23.024
Received: 21/06/22; accepted: 05/11/22

Copyright © Authors 2023; Licensee: World Health Organization. EMHJ is an open access journal. This paper is available under the Creative Commons Attribution Non-Commercial ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; https://creativecommons.org/licenses/by-nc-sa/3.0/igo).

Background

In December 2019, there was a report of pneumonia with unknown cause from Wuhan, China, which was later confirmed to be COVID-19 caused by SARS-CoV-2 virus. The infection spread rapidly worldwide, making the WHO to declare a public health emergency of international concern (1). By 17 August 2021, the number of confirmed cases had reached 208 795 101 globally with 4 386 178 deaths (2). The ability to screen and test for COVID-19 cases has been critical in detecting, preventing, and managing the spread of the disease.

The WHO COVID-19 strategy published in April 2020 confirmed human-to-human transmission

of SARS-CoV-2 virus and indicated that the risk of transmission is amplified in healthcare facilities. Early epidemiologic investigations suggested the need to use surveillance and case definition to characterize the transmission features of SARS-CoV-2 virus, to understand the spread and severity of the viral infection, and to inform control measures (3).

Saudi Arabia had reported its first case of COVID-19 infection in March 2020, with 540 244 confirmed cases and 8439 deaths as of 17 August 2021 (4). As soon as the pandemic was declared by WHO, even before registering the first case in Saudi Arabia, the Ministry of National Guard Health Affairs (MNGHA) swiftly began implementing measures to control and prevent the spread of SARS-CoV-2 infection. MNGHA realized the urgent need to maximize the use of available resources, minimize the risk of exposure, and contain the transmission of COVID-19 among staff and patients.

Nurses constitute the highest percentage of frontline healthcare professionals, and their role has evolved beyond direct patient care during the COVID-19 pandemic. They now play a paramount role in infection control at the workplace and are thus in an excellent position to facilitate triage, screening and contact tracing for COVID-19 isolation and treatment (5).

This paper highlights lessons from the ambulatory care nursing for COVID-19 contact tracing clinics at MNGHA in Riyadh, Saudi Arabia.

Methods

This paper presents a narrative description of nurses' experiences in managing COVID-19 contact tracing activities. We discuss preparations by the multidisciplinary COVID-19 surveillance team, contact tracing clinic structure, and commissioning of contact tracing clinics at MNGHA, Riyadh. We describe the contact tracing activities for confirmed or suspected COVID-19 exposure, and present the daily statistics of the number of nasopharyngeal swabs and the average number of patient visits to the COVID-19 contact tracing clinics for March 2020 to March 2021.

Constitution of the contact tracing team

In March 2020, a multidisciplinary team consisting of staff of the Primary Healthcare Services, Ambulatory Care Center, Infection Prevention and Control (IPC) Department, and Nursing Services at MNGHA, Riyadh, worked collaboratively to establish 2 dedicated contact tracing clinics, one for the public (adult and pediatric) and another for hospital staff. A comprehensive

surveillance system was established to detect and contain as many cases as possible.

Establishment of a contact tracing clinic

To prevent and contain the spread of the virus, we moved COVID-19 screening and testing services outside the hospital premises and used the Medical Simulation Center at King Saud bin Abdulaziz University for Health Sciences (KASU-HS) as an outpatient clinic because of its capacity to accommodate many visitors. The large space was needed to facilitate physical distancing and other precautionary measures. In September 2020, however, we moved the contact tracing clinics to a dedicated primary healthcare centre because of the resumption of the simulation centre's educational activities.

In May 2020, MNGHA faced a surge in COVID-19 cases and a decision was made to increase the clinic's staffing, including family physicians and registered nurses, to meet the extremely high demand. More nurses were re-assigned from other clinics in response to the increasing demand for services and increasing clinic staff workload (Table 1).

Following the development of the national COVID-19 safety guide for healthcare professionals and the COVID-19 interim practical guidelines (6), the clinics were organized into sections to meet the testing protocol requirements. The facilities were divided into screening rooms, medical examination rooms, swab rooms, satellite pharmacy, and 2 types of dedicated waiting areas. One waiting room was provided for symptomatic patients who presented with respiratory-like symptoms. The second waiting room was for asymptomatic patients who had unprotected exposure to a confirmed COVID-19 case.

The waiting area for symptomatic patients had enough space for physical distancing and was equipped with high-efficiency particulate air (HEPA) filters. The reception and registration desks were located outside the clinics, at the entrance corridor, to allow for physical distancing and reduce crowding.

Both clinics had trained medical and nursing staff who managed emerging respiratory pathogens such as COVID-19 and were equipped with emergency equipment such as the automated external defibrillators, HEPA filters, enough supply of personal protective equipment (PPE), and nasopharyngeal swab kits.

MNGHA proactively established a taskforce consisting of Nursing Services, IPC, and Quality and Safety Department staff as part of the emerging pathogen preparedness committee to mitigate any anticipated supply shortages. The committee worked closely with the procurement and purchasing and nursing products teams to facilitate adequate supply of COVID-19 related equipment to all targeted clinical areas. Daily status update reports on PPE were shared with all unit leaders to enhance resource utilization.

Contact tracing activities

The public health contact tracing clinic and the employee flu clinic started operating on 22 March 2020. The employee flu clinic was set up for MNGHA staff with suspected COVID-19 exposure or confirmed COVID-19 cases who were still symptomatic despite completing a 14-day quarantine period, or those who required medical clearance to return to work after COVID-19 infection. All staff members had their temperature monitored at the beginning of each shift. Staff who presented with fever or acute respiratory illness symptoms were referred to an employee health clinic. All suspected and confirmed cases were immediately isolated in the hospital or quarantine facilities to prevent infection transmission. Aggressive contact tracing was initiated to track movement history for positive cases over the last 14 days before symptoms of onset. Any contact confirmed with COVID-19 or who had acute respiratory symptoms was referred to the employee flu clinic for testing. Staff with unprotected exposure to a confirmed case were placed under mandatory quarantine for 14 days beginning from the date of exposure, to promote contact tracing and manage employee-related COVID-19 exposure.

Exposure to COVID-19 infection among healthcare workers was a significant challenge to sustaining the workforce. It created panic and fear among healthcare workers. To overcome the challenge, the IPC Department and Nursing Services created a clinical pathway to manage COVID-19-positive staff. MNGHA established a nursing wellness programme, because of the relationship between nurses' and patients' well-being. The Well Resilient Nurse Wellbeing Programme was initiated to promote staff well-being and prevent staff anxiety, stress and burnout. The employee health clinic increased the number of weekly sessions for the wellness clinic from 1 to 3 per week and created a hotline for psychological support for nursing staff.

The public health contact tracing clinic used a collaborative care model for its operations. The public health department would send the contact tracing list to the nursing staff for registration and screening. A family physician would then examine the patients, and a request for swabbing would be initiated. The nurse would collect the swab sample from the patient's nose and throat; educate the patient about COVID-19 precaution measures such as remaining in home isolation while waiting for the swab result. Patients were also educated about the importance of hand hygiene, compliance with wearing face masks, and avoiding sharing items.

The two clinics were strengthened by trained nurses, infection control practitioners, and support services, such as housekeeping, staff, security, and patient relations officers. The working shifts were approved initially to be 9 hours, from 08:00 to 17:00 for 7 days a week. However, due to the increased demand and the surge of COVID-19 cases, operating hours were extended to 12, from 08:00 to 20:00.

Visitors were screened for acute respiratory illness in the screening room, then, they were guided to the examination rooms to be assessed by the physicians. Next, the nurse collected nasopharyngeal swab samples. Then, all nasopharyngeal swab samples were transported in an insolation box to the virology laboratory for processing (Figure 1).

Nurses assigned to these clinics underwent competency training on donning and doffing PPE, N95 fit testing, nasopharyngeal swab safety, and how to operate, maintain and store powered air purifying respirator (PAPR). A staffing plan was arranged to ensure that the clinics had the required human capacity to service the expected surge in cases.

Results

Over 12 months, the contact tracing clinics served 79 146 clients, of which 18 989 visited the staff flu clinic, and 54 770 adults and 5387 children visited the COVID-19 public contact tracing clinic. On average there were 52 visits to the staff flu clinic daily, and 159 adult and 16 children visits to the public contact tracing clinic. However, the number of visits varied over the year depending on the case surge (Figure 2). For example, in April 2020, Saudi Arabia reported 20 373 COVID-19 cases, of which we received 3597 cases in our contact tracing clinics. Saudi Arabia continued to report an increase in COVID-19 cases, from 22 311 in May to 59 767 in June 2020.

There was an increase in the number of visits to both clinics, from 5212 in May to 14054 in June 2020. Although the number of reported cases declined in July, Saudi Arabia reported 37 043 cases and this was reflected in the number of visits to the clinics; 7344 (Figure 2).

The staff flu clinic conducted 16 189 COVID-19 PCR tests and the public contact tracing clinic conducted 52348 tests for adults and 5387 for children.

Due to the screening outside the hospital facility, which helped in containment of COVID-19

spread, we recorded zero transmission of infection among staff working at the contact tracing clinics.

Discussion

Containing and preventing the spread of SARS-CoV-2 infection is a priority for mitigating the risk of viral spread at healthcare facilities. Therefore, early screening and testing are essential for infection prevention. This study highlights our experience in establishing and managing COVID-19 contact tracing clinics at a tertiary care hospital in Riyadh, Saudi Arabia.

The decision to establish a contact tracing clinic outside the hospital facility was challenging, however, the outcome outweighs the risks of conventional operation using the ambulatory flu clinic. Our results showed zero transmission of COVID-19 infection among staff working at the contact tracing clinics. The decision to move contact tracing away from the hospital premises during the COVID-19 pandemic was partly based on experiences with the MERS-CoV outbreak in 2015 (7-9). Other studies have shown that setting up segregated COVID-19 screening clinics at a dedicated geographic location is effective (10-12) and an efficient containment strategy in a pandemic situation.

The number of COVID-19 cases was directly proportional to the number of visits for screening, indicating that the structure of the contact tracing clinics was flexible to meet the fluctuation in the number of cases; we were able to increase the capacity of the clinics to meet the increased demand for screening. Similarly, Pradhan et al. indicated a steady increase in COVID-19 cases and the number screened at their COVID-19 screening centre. Therefore, adopting a flexible care model to accommodate the case surges is critical when setting up contract tracing clinics.

Despite the challenges, our experiences in implementing a collaborative care model showed that multi-departmental teamwork and a high level of care coordination led to successful disaster preparedness. Other studies have recommended the involvement of multidisciplinary expertise to facilitate a smooth transition of care processes to meet needs and sustain stakeholder involvement (13). Implementing a collaborative care model allows health authorities to foster teamwork among relevant departments (14). Effective implementation of contact tracing interventions during the pandemic requires interdepartmental cooperation and effective communication to contain the risks.

Our results have some strengths and weaknesses. This is one of the few studies in an ambulatory care setting that highlights the experience of establishing and managing contact

tracing activities. It presents data from the pediatric and adult populations and includes analysis of healthcare workers and public visitors. The main limitation of the study is that it did not consider the clinical profile of visitors in the analysis.

The results show that contact tracing is an efficient strategy for containing virus spread and flexible enough to accommodate increasing resource demands. Hospitals must, however, keep up with emerging surveillance technologies (15) such as thermal scanning cameras, rapid screening tests and mobile applications, and adhere to all other precautionary measures.

Conclusion

Implementing this collaborative care model taught us various lessons. It highlights the need for early preparedness to effectively manage pandemics. It helped re-direct the focus of the leadership towards strengthening teamwork and communication and ensuring the delivery of safe, highly coordinated care even during the crisis. Although setting up the clinics away from the hospital facility was challenging, the decision to use dedicated clinics helped reduce the risk of exposing ambulatory care visitors and staff to COVID-19 infection.

Acknowledgement

The authors would like to acknowledge all those who contributed to the smooth operation of the contact tracing clinics, including the Simulation Centre, Medical Services, Operations, Primary Healthcare Services, Infection Prevention and Control Department, Ambulatory Care Center, Nursing Services, Quality and Safety Department, Information Technology Department, Laboratory and Pathology Services, Patient Services Department, Support Services, and Environmental Services at the King Saud bin Abdulaziz University for Health Science.

This study was approved by the Institutional Review Board at King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia.

Funding: None

Competing interests: None declared.

Expériences du personnel infirmier dans la gestion des services de

recherche des contacts de COVID-19 dans un hôpital de soins tertiaires

Résumé

Contexte : La pandémie de COVID-19 s'est rapidement propagée dans le monde entier et l'OMS l'a déclarée urgence de santé publique de portée internationale. La capacité des établissements de santé à dépister et à tester la COVID-19 a été essentielle pour détecter, prévenir et gérer la propagation de la maladie.

Objectifs : Le présent rapport documente les enseignements tirés en matière de soins infirmiers ambulatoires pour la recherche de contacts de COVID-19 dans un hôpital de soins tertiaires.

Méthodes : En mars 2020, une équipe multidisciplinaire composée de personnels des services de soins de santé primaires, du centre de soins ambulatoires, du département de lutte anti-infectieuse et des services infirmiers des Affaires sanitaires du ministère de la Garde nationale à Riyadh (Arabie saoudite), ont travaillé en collaboration pour mettre en place deux services dédiés à la recherche des contacts COVID-19 en dehors des locaux hospitaliers – un service établi pour le public et un autre pour les personnels hospitaliers. Un système de surveillance a été mis sur pied pour détecter et confiner autant de cas que possible. Le présent rapport met en évidence le processus d'établissement et de maintien de la structure et de la gestion des flux de travail des services de recherche des contacts. Nous avons calculé le nombre d'écouvillons nasopharyngés et le nombre quotidien moyen de visites de patients dans les deux services entre mars 2020 et mars 2021.

Résultats : Au cours de cette période d'un an, les services ont accueilli 79 146 visiteurs, avec une moyenne de 52 visites pour le personnel, 159 visites pour les adultes et 16 pour les enfants par jour. Les deux services ont effectué 73 924 tests de réaction en chaîne par polymérase. Il n'y a eu aucune transmission d'infection COVID-19 au personnel travaillant dans les deux services.

Conclusion : Malgré le défi que représente la mise en place de services de recherche de contacts, la décision d'utiliser des lieux géographiques distincts a contribué à réduire le risque d'exposition à l'infection parmi le personnel desdits services. La mise en œuvre efficace des interventions de recherche des contacts repose sur la coopération interservices et une communication effective pour contenir le risque de propagation du virus.

WHO EMRO | Nurses' experiences of managing COVID-19 contact tracing clinics in a tertiary care hospita

تجارب كادر التمريض في إدارة تتبُّع مخالطي مرضى كوفيد -19 في أحد مستشفيات الرعاية التخصصية

مها الجعيد، أحمد ديب، نبيهة طاشقندي، ريم الرويثي، منيرة الشمري

الخلاصة

الخلفية: انتشرت جائحة كوفيد -19 بسرعة على الصعيد العالمي، وأعلنت منظمة الصحة العالمية أنها طارئة صحية عامة تسبب قلقًا دوليًّا. وكانت قدرة المؤسسات الصحية على تحرِّي الإصابة بمرض كوفيد -19 وإجراء الاختبارات المتعلقة به حاسمةً في اكتشافه والوقاية منه والتعامل مع انتشاره.

الأهداف: هدفت هذه الدراسة الى توثيِّق الدروس المستفادة من تقديم خدمات التمريض في إطار الرعاية الإسعافية، بهدف تتبُّع مخالطي مرضى كوفيد -19 في أحد مستشفيات الرعاية التخصصية.

طرق البحث: في مارس / آذار 2020، تعاون فريق متعدد التخصصات يتألف من مجموعة من موظفي خدمات الرعاية الصحية الأولية، ومركز الرعاية الإسعافية، وقسم الوقاية من العدوى ومكافحتها، وخدمات التمريض في مجمع الشؤون الصحية التابع لوزارة الحرس الوطني في الرياض، بالمملكة العربية السعودية، على إنشاء عيادتين متخصصتين لتتبُّع مخالطي مرضى كوفيد -19 بمنأى عن مباني المستشفى، حيث أُنشئت عيادة للجمهور، وعيادة أخرى لموظفي المستشفى. وأُنشئَ نظام ترصُّد لاكتشاف أكبر عدد ممكن من الحالات واحتوائها. ويُسلِّط هذا التقرير الضوء على عملية إنشاء هيكل عيادات تتبُّع المخالطين والحفاظ عليها، وإدارة تدفُّق العمل فيها. وقد حسبنا عدد المسحات الأنفية البلعومية ومتوسط عدد زيارات المرضى اليومية لكلتا العيادتين في الفترة بين مارس / آذار 2020 ومارس / آذار 2021.

النتائج: خلال مدة السنة الواحدة، قدمت العيادتان خدماتهما إلى 79146 زائرًا بمتوسط 52 زيارة للموظفين، و 159 زيارة للبالغين، و 16 زيارة للأطفال يوميًّا. وأجرت العيادتان 73924 اختبارًا لتفاعل البوليميراز المتسلسل. ولم يحدث أي انتقال للعدوى بمرض كوفيد -19 إلى العاملين في كلتا العيادتين.

الاستنتاجات: رغم التحدي المتمثل في إنشاء عيادتين لتتبُّع المخالطين، فإن قرار استخدام موقعين جغرافيين منفصلين أسهم في الحد من خطر تعرُّض موظفي العيادتين للإصابة. ويعتمد التنفيذ الفعال لتدخلات تتبُّع المخالطين على التعاون بين الإدارات

10 / 12

.□□□□□□□□ □□□□□□□ □□□□ □□□□□□□□ □□□□□□□□□ □□□□□□□□□

References

1. World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19. Geneva: World Health Organization, 11 March 2020. https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020.

2. Worldometers. Coronavirus cases. https://www.worldometers.info/coronavirus/.

3. World Health Organization. COVID-19 strategy update. Geneva: World Health Organization. https://www.who.int/publications/m/item/covid-19-strategy-update.

4. Worldometers. Coronavirus Cases in Saudi Arabia. https://www.worldometers.info/coronavirus/country/saudi-arabia/.

5. Buheji M, Buhaid N. Nursing human factor during COVID-19 pandemic. International Journal of Nursing Science 2020;10(1):12–24.

6. Saudi Patient Safety Center. COVID-19 Safety Guide for Healthcare Professionals. Riyadh: Saudi Patient Safety Center. https://spsc.gov.sa/English/PublishingImages/Pages/COVID-19/COVID-19%20Safety%20Guide%20for%20Healthcare%20Workers%20version%203.0.pdf.

7. Oraby T, Tyshenko MG, Balkhy HH, Tasnif Y, Quiroz-Gaspar A, Mohamed Z, Araya A, Elsaadany S, Al-Mazroa E, Alhelail MA et al. Analysis of the healthcare MERS-CoV outbreak in King Abdulaziz Medical Center, Riyadh, Saudi Arabia, June-August 2015 using a SEIR ward transmission model. Int J Environ Res Public Health 2020;17(8):2936.

8. Alabdali A, Almakhalas K, Alhusain F, Albaiz S, Almutairi K, Aljerian N. The middle east respiratory syndrome coronavirus (MERS-CoV) outbreak at King Abdul-Aziz Medical City, Riyadh from emergency medical services perspective. Prehosp Disaster Med 2020;35(4):457–461.

9. Amer H, Alqahtani AS, Alzoman H, Aljerian N, Memish ZA. Unusual presentation of Middle East respiratory syndrome coronavirus leading to a large outbreak in Riyadh during 2017. American Journal of Infection Control 2018;46(9):1022–1025.

10. Jiang H, Liu JW, Ren N, He R, Li MQ, Dong QC. Emergency management in fever clinic during the outbreak of COVID-19: an experience from Zhuhai. Epidemiology and Infection 2020;148:e174.

11. Kim SI, Lee JY. Walk-through screening center for COVID-19: an accessible and efficient screening system in a pandemic situation. J Korean Med Sci 2020;35(15):e154.

12. Pradhan SK, Sahu DP, Sahoo DP, Singh AK, Patro BK, Mohanty S. Experience from a COVID-19 screening centre of a tertiary care institution: A retrospective hospital-based study. J Family Med Prim Care. 2021;10(8):2933–2939. DOI: 10.4103/jfmpc.jfmpc_2339_20.

13. Archbald-Pannone LR, Harris DA, Albero K, Steele RL, Pannone AF, Mutter JB. COVID-19 collaborative model for an Aacademic hospital and long-term care facilities. J Am Med Dir Assoc 2020;21(7):939–942.

14. Carlo AD, Barnett BS, Unützer J. Harnessing collaborative care to meet mental health demands in the Era of COVID-19. JAMA Psychiatry 2021;78(4):355–356.

15. Budd J, Miller BS, Manning EM, Lampos V, Zhuang M, Edelstein M, Rees G, Emery VC, Stevens MM, Keegan N et al. Digital technologies in the public-health response to COVID-19.

Nat Med 2020;26(8):1183–1192.

Thursday 11th of July 2024 05:34:47 AM