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Educational Forum

Contact tracing of health care workers as a part of health system strengthening: lessons learnt from field experience

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ABSTRACT

Health care workers (HCWs) are the frontline workers working tirelessly during the pandemic of coronavirus disease-2019 (COVID-19). The same HCW, after duty, is exposed to his/ her community which again increases the risk of infection. Hence, with an increased risk of exposure, we cannot afford to lose our frontline workers due to sickness or more. In the absence of any definitive antiviral treatment, unclear modes of transmission, burnout working hours, fatigue, societal stigma related to disease etc., a HCW is exposed to psychological distress and many a time develops an anxiety/panic condition which can increase the chances of work-place error and thus can increase the likelihood of infection. In this article, we have shared our experience with contact tracing among HCWs, what we have learned in the past two years, and proposed a way forward.

Keywords: COVID-19, Contact tracing, Health care workers, PPE, Community, Risk assessment

INTRODUCTION

Contact tracing is the process of identifying, assessing and managing the exposed persons to prevent onward transmission of infection. On systematic application it has shown to be an effective tool for interruption of transmission.[1] It has been used successfully for interrupting various diseases such as SARS in 2003, Ebola in 2014 and for sexually transmitted infection etc.[2] If used and implemented properly, it can serve to reduce the surge of infection and simultaneous overwhelming of health systems. Standardised contact tracing protocols have been recommended by WHO and other health societies.[1,3-5] These are mainly applicable in community and congregated settings.

WHY CONTACT TRACING OF HEALTH CARE WORKERS IS DIFFERENT FROM COMMUNITY CONTACT TRACING

The most important objective of contact tracing in community is to interrupt transmission but the objective of contact tracing for health care workers are different. These, broadly can be divided into three objectives: safeguarding and proper utilisation the health workforce; interrupt the transmission of infection and keeping the essential health service running. Among all the three objectives the first one may be the most important one as safe healthcare workers ensure availability of essential health service. The health workers also serve as an important bridge population for transmission of infection from the hospitals

to the community and contact tracing of them interrupts passing of infection from hospital setting to community. The balance between all the three objectives is always dynamic and many times changes according the prevailing disease situation.

In the process of contact tracing, classification as low risk contact does not mean absence of risk for health workers. Many of them fear spreading infection to their family members because of multiple unidentified exposures. This constant fear and dread at workplace may affect their mental health adversely, which ultimately increases chances of error at workplace leading to more infection among them.

Asymptomatic infections are more common among health care workers because of the environment they work in, which may be full with viral debris. Hence testing for only symptomatic healthcare workers may not work. Repeated panic testing just after exposure without proper risk assessment also brings a sense of false assurance, which may facilitate transmission of undetected infection ultimately culminating in surge of COVID-19 cases among HCWs. There is no standardised risk assessment followed by testing available during contact tracing of Health Care Workers.

Contact tracing followed by repeated facility quarantine among the health care workers because of many inadvertent high risk exposure at work, may affect workforce capacity, mental health of the HCWs due to isolation, monotony and high stress at workplace. This also affects the motivation of the workforce in face of a prolonged protracted response for COVID-19.

OUR EXPERIENCE WITH CONTACT TRACING IN A MULTISPECIALTY TEACHING HOSPITAL

We as a part of contact tracing team of a multispecialty teaching hospital, started contact tracing with the first COVID-19 case of a HCW, a nursing officer who tested positive during post COVID duty quarantine. The next activity of contact tracing was for a patient who visited a non-COVID OPD after giving sample for COVID testing which reported positive. The third case of contact tracing for a patient, who was diagnosed in non COVID area of the hospital and so on. We followed the WHO guideline of contact tracing in context of COVID-19 and Ministry of Health and Family Welfare, Government of India guideline for contact tracing. We were able to isolate the immediate high risk contacts of the COVID-19 case and presumably prevented surge of cases due to those contacts. As gradually the case counts increased with more diagnosis of COVID cases in non COVID areas of the hospital, we faced three critical issues- (a) the isolation of high risk contacts increased with surge of cases over the time, which could not be prevented by contact tracing; (b) more isolation of health care workers leads to critical shortage and over burdening of healthcare workforce in the hospital, which was vital in maintaining essential services; and (c) the availability of personal protective equipments was not uniform across different departments in different period of time.

WHAT WE LEARNT FROM OUR EXPERIENCE

We realised the need to change the narrow objective of isolation of contacts and included active interventions as a part of contact tracing recommendations to prevent future exposure of health care workers. We acknowledged the need for risk stratification for different departments and equitable availability of PPE according to risk. We realised the need for increase in resilience at workplace through critical environmental and behavioural changes to reduce the number of high risk healthcare exposure over time. We realised the need to red flag mental health cues during contact tracing, which may provide important signs of burn out among health care workers. We realised the need for repeated training or re-enforcement of best practices of patient care and workplace interactions even between health care providers, for translating knowledge into practice. There is always a possibility of gaps in theoretical knowledge on COVID-19 infection control and real practice at work place by different cadre of HCWs. There should not be a presumption regarding existence of practically useful knowledge and practice regarding the role of a contact in spreading the highly infectious disease as per the qualification or position held by the person. Hence, during the health manpower development for epidemic/pandemic preparedness, there should be uniform training and periodic re-enforcement/ re-training of all stake holders in an organization.

A WAY FORWARD FOR CONTACT TRACING OF HCWS

In multispecialty health care set up each department serves as a separate mini administrative unit with relatively uniform practices, workforce and patient interactions within it. Hence contact tracing for HCWs should take into account individual department specific work patterns, high risk behavioural practices and plausible sources of infections. Standardised department-based testing protocol for patients should be decided on the basis of risk stratification of the patients admitted under individual departments. e.g. department of nephrology, cardiology, geriatrics medicine, radiation oncology and obstetrics and gynaecology need strict adherence to preventive measures and contact tracing with broadened risk categorization because of the susceptibility of the patients coming to those departments.

The recommended practice of contact tracing is 2 days before to 14 days after the patient starts to show symptoms.[1] This needs modification to do a back tracing of the contacts. This helps in identifying the source of infection in a specific health care setup apart from interrupting the transmission among immediate contacts. The source of infection for the HCWs in many cases might be a practice, which exposes them to infected cases.

Identifying the source reduces chances of future infection and increases the resilience of the health system. The department specific recommendations during contact tracing contribute to health system strengthening. Our experience with contact tracing in department of trauma and emergency helped to understand the risk of underprepared receiving of an emergency patient. The improper patient flow also critically affects the physical distancing in a critical care set up which not only jeopardises the safety of HCWs but also the safety of patients and their attendants. The documentation of contact tracing information and it's analysis reveals many institute specific felt needs in terms of health education, training and counselling among health workers. The micro plan should include includes early identification of a separate room with proper cross ventilation, attached washroom and kitchen inside or near to home will be a safe and sustainable solution for repeated home quarantines. This can also include preparation for listing essential consumables for the duration of quarantine and alternative solutions for maintenance of household chores and dependents in the family. Contact tracing not only helps in isolating the contacts, but may also serve as an opportunity to allay fears, anxieties and unanswered queries for many health care workers who become physically and mentally overburdened in a pandemic as such, by the contact tracers themselves or other identified personnel. Contact tracing can uncover the practical workplace problems such as disadvantage of full PPE during long duration surgical procedures and hence induces changes through translational innovations in equipments, protective gears and procedural replacements (high risk aerosol generating procedures replaceable with low risk non aerosol generating procedures). Post contact tracing follow up needs an equally rigorous activity by a team which may include a psychologist, a medical social worker (MSW), a counsellor and preferably an administrator/ a representative from administration of the organization.

CONCLUSION

Contact tracing should be seen as an opportunity to improve the health system preparedness by finding critical loopholes in environmental or administrative structure of the system. Contact tracing can reveal critical felt need of health education, training regarding infection control and mock drills to manage surge cases among the health care workers. There is a need for preparation of micro plan for each health worker to manage repeated home quarantine, which can mitigate some mental health impact of the same. Contact tracing of HCWs is the only tool to identify, assess the exposure, categorization in low or high risk contact and break the disease transmission at healthcare setup.

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