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Walk-in sampling kiosks for COVID-19 testing: A boon or bane

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The World Health Organization declared COVID-19 “a pandemic” on March 11, 2020[1]. The first case in India was diagnosed on January 30, 2020. This count continues to rise, and the confirmed cases in India on November 19, 2020, were 8 960 098[2]. The diagnosis of COVID-19 is confirmed by reverse transcriptase-polymerase chain reaction (RT-PCR) on the oropharyngeal or nasopharyngeal specimen. Specimen collection requires the health care worker (HCW) to wear complete personal protective equipment (PPE) as recommended by the Ministry of Health and Family Welfare, Government of India. Recommended PPE for medical personnel includes an N-95 face mask, impermeable gown, head cover, goggles, face shield, shoe cover, and gloves.

The first-of-its-kind contact-free walk-in sample kiosk (WISK) for COVID-19 testing was launched in Kerala’s Ernakulam district to ensure the safety of HCW while collecting samples. The individual being tested is seated outside the glass wall. The HCW inside the WISK needs to insert his hands in the rubber gloves attached to the glass wall and collect swab from the person. The cost of manufacturing is about 538.21 USD for a basic structure. Subsequently, another government agency developed an indigenous model of the sampling kiosk called “COVID Sample Collection Kiosk”. It was different from WISK in the sense that the suspected patients have to walk-into the kiosk, and HCW takes a nasal or oral swab from outside through the built-in gloves. It costs about 1 345.53 USD. Suspect cases of COVID-19 do not report for sample collection at a fixed time, instead they report at anytime during the working hours. It is not practically feasible for the HCW to wear PPE throughout the day. Considering that the WISK is an easier and more comfortable method for HCW who usually have to work for a long time.

These WISKs can be installed at all the government sample collection facilities, with the result that this equipment can be promoted in a mass way. Besides, the installation of WISK is a one-time investment, with no recurring cost, barring the maintenance charges. Thus WISKs will save almost 95% of the government’s expenditure on PPE for sample collection, considering that there are few obstacles oppressing the widespread installation of WISKs..

One of the disadvantages of WISK is that the sample collection will be more difficult and time-consuming. The HCWs will require training for the same.

Unfortunately, there are no guidelines for manufacturing WISKs in India, thus compromising quality of the facilities cannot be avoided. Recently a study from Israel simulated the conditions similar to emergency department management of patients experiencing respiratory distress and showed that despite full PPE fluorescent markers were found on the uncovered skin, hair, and shoes of participants[3]. These findings suggest that the current recommendations for personal protective equipment may not entirely prevent exposures.

These WISKs have industrial-grade rubber gloves for taking samples. This will further decrease the sensitivity of the oropharyngeal and nasopharyngeal swabs for RT-PCR, which is already low at the rate of 63% for nasal swabs and 32% for pharyngeal swabs if the sample is taken by standard procedure[4]. A large number of patients will be misclassified as a false negative, and in absolute terms, they may be translated into large numbers.

To conclude, WISKs might be a boon for developing countries, provided governments intervene at the earliest and lay down the standards for WISKs; otherwise, it might turn into bane with the growing pandemic affecting more number of healthcare workers and missing the positive cases.

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Conflict of interest statement

The authors report no conflict of interest.

Authors' contributions

Both the authors contributed equally in conceptualizing, manuscript writing and editing of this article.

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