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TO ALL SMS MEMBERS/HEADS OF FACILITIES/PROVINCIAL BARGAINING CHAMBER/HIGHER EDUCATION INSTITUTIONS

CIRCULAR H213/2020: TEMPERATURE SCREENING IN HEALTH FACILITIES AND WORKPLACES

1. PURPOSE

Recommendations for employees and patrons COVID-19 screening when entering health facilities and workplaces.

2 BACKGROUND

The use of non-contact thermometers (NCT) for objective temperature measurements when entering health facilities, workplaces and other public areas has been widely used during the COVID-19 epidemic. However, accuracy of the instruments are questionable for various reasons and there is little data to support its use.¹⁻³

There is a need for clarity on the use of NCTs and value thereof to detect fever in workers and patrons, which is further discussed below along with recommendations for a way forward.

NCT's are used to measure surface body temperature⁴ assuming a stable ambient temperature.^{1,4} However, due to the change in case definition, the high proportion of COVID-19 asymptomatic cases, and poor validity and reliability of the instrument, the use of NCTs should be discouraged.

Change in case definition

Early cases of COVID-19 were described as a cluster of pneumonia⁵, and thus the initial case definitions globally included fever and respiratory symptoms⁶. However, with increasing evidence, the case definition changed to include non-respiratory symptoms **and removing fever as a requirement⁵**, since it is a non-specific and an unreliable symptomatic indicator of COVID-19.

Asymptomatic transmission

Reports of asymptomatic transmission account for approximately half of all COVID-19 cases⁷. Given the high proportion of asymptomatic cases, a negative temperature screen does not rule out COVID-19 and may confer a false sense of protection and reassurance, which could lead to a relaxation of safe practices and potential for further outbreaks of cases.²

Validity and reliability

There is disagreement on the anatomical site (forehead or wrist) at which NCTs should be used^{8,9} and the threshold temperature that could be considered a fever when using NCTs⁹. Studies report

varying sensitivity and specificity of NCTs^{1,8-10} when compared to tympanic temperature measurement.

NCT's are user-dependent and rely on specific training in the use of and interpretation of NCTs, regular calibration of the instrument, ambient temperature⁴, distance from patient², anatomical site of measurement^{2,8,9}, preparation of person being evaluated (i.e. headscarf or facial cleansing products may alter measurement)⁴ and strict adherence to manufacturer's guidelines^{3,4} to be accurate.

New evidence on aerosol transmission

Recent evidence shows that viable virus can be found in aerosols, and so airborne transmission of COVID-19 is possible.¹¹⁻¹³ As such, advice to patrons and employees in public spaces and buildings should be focused on masking, improving ventilation, avoiding crowded spaces, limiting numbers of persons in an enclosed space, and regular disinfection of surfaces.¹¹⁻¹³

3 CURRENT POLICY

There is currently **no law in place that requires temperature measurement using a thermometer.**

According to legislation, there is no directive instructing employers to use a thermometer to measure temperature of employees or patrons, but rather to screen for symptoms including fever – the keyword being “symptoms”, which is the subjective experience of the patient, and could thus be screened for verbally. The directive also suggests consultation of the National Department of Health guidelines, which have since removed “fever” from the case definition.⁵

4 RECOMMENDATIONS

- Issue directive to workplaces, hospitals and other public spaces stating that NCTs for screening of employees and patrons are not required – the reasons for this should be clear and understandable in lay terms.
- Broad messaging to the public that NCTs are not a requirement for COVID-19 screening in public spaces.
- Improve building entry regulations as follows:
 - Ensure that the venue is well ventilated;
 - Ensure that a maximum density of people is not exceeded (a limit on the number of people/square metre) and that physical distancing is maintained;
 - Ensure proper mask wearing;
 - Ensure hand sanitisation;
 - Conduct a verbal screen for symptoms and refer anyone who screens positive for further medical examination/testing.

- Continue broad messaging on evidence-based non-pharmaceutical interventions such as social distancing, importance of quarantine and isolation, and identification of COVID-19 symptoms.



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REFERENCES

1. Liu C-C, Chang R-E, Chang W-C. Limitations of Forehead Infrared Body Temperature Detection for Fever Screening for Severe Acute Respiratory Syndrome. *Infect Control Hosp Epidemiol.* 2005 Jan 1;25:1109–11.
2. Aw J. The non-contact handheld cutaneous infra-red thermometer for fever screening during the COVID-19 global emergency. Vol. 104, *The Journal of hospital infection.* 2020. p. 451.
3. Fletcher T, Whittam A, Simpson R, Machin G. Comparison of non-contact infrared skin thermometers. *J Med Eng Technol [Internet].* 2018 Feb 17;42(2):65–71. Available from: <https://doi.org/10.1080/03091902.2017.1409818>
4. U.S. Food and Drug Administration. Non-contact Infrared Thermometers | FDA [Internet]. 2020 [cited 2020 Nov 11]. Available from: <https://www.fda.gov/medical-devices/general-hospital-devices-and-supplies/non-contact-infrared-thermometers>
5. The Centre for Respiratory Diseases and Meningitis, Outbreak Response Unit, Division of Public Health Surveillance and Response Services NI for CD (NICD) of the NHLS, National Department of Health SA. Coronavirus disease 2019 (COVID-19) caused by a Novel Coronavirus Guideline for case-finding, diagnosis, and public health response in South Africa. Vol. 3. 2020.
6. World Health Organization (WHO). Coronavirus (COVID-19) events as they happen [Internet]. 2020 [cited 2020 Jul 28]. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>
7. He X, Lau EHY, Wu P, Deng X, Wang J, Hao X, et al. Temporal dynamics in viral shedding and transmissibility of COVID-19. *Nat Med [Internet].* 2020;26(5):672–5. Available from:

- <https://doi.org/10.1038/s41591-020-0869-5>
8. Chen G, Xie J, Dai G, Zheng P, Hu X, Lu H, et al. Validity of Wrist and Forehead Temperature in Temperature Screening in the General Population During the Outbreak of 2019 Novel Coronavirus: a prospective real-world study. medRxiv [Internet]. 2020 Jan 1;2020.03.02.20030148. Available from:
<http://medrxiv.org/content/early/2020/03/06/2020.03.02.20030148.abstract>
 9. Chen H-Y, Chen A, Chen C. Investigation of the Impact of Infrared Sensors on Core Body Temperature Monitoring by Comparing Measurement Sites. Sensors (Basel) [Internet]. 2020 May 19;20(10):2885. Available from: <https://pubmed.ncbi.nlm.nih.gov/32438729>
 10. Tay MR, Low YL, Zhao X, Cook AR, Lee VJ. Comparison of Infrared Thermal Detection Systems for mass fever screening in a tropical healthcare setting. Public Health. 2015 Nov 1;129(11):1471–8.
 11. Meselson M. Droplets and Aerosols in the Transmission of SARS-CoV-2. N Engl J Med [Internet]. 2020 Apr 15;382(21):2063. Available from:
<https://doi.org/10.1056/NEJMc2009324>
 12. Lancet Respiratory Medicine T. COVID-19 transmission—up in the air. Lancet Respir [Internet]. 2020 [cited 2020 Nov 16]; Available from:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7598535/pdf/main.pdf>
 13. CDC. Scientific Brief: SARS-CoV-2 and Potential Airborne Transmission [Internet]. [cited 2020 Nov 16]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-sars-cov-2.html>