Global impact of COVID-19 and lockdowns on POC HbA1c testing

Through the ups and downs of the COVID-19 pandemic, regions across the globe have witnessed a serious impact on HbA1c testing for diabetes diagnosis and monitoring. With deprioritization of testing in healthcare facilities and the increasing volume of COVID-19 patients requiring treatment, point-of-care testing for diabetes has taken a hit. While the reopening of countries is not uniform, studies suggest that markets may likely see an increase of diabetes populations in worse glycemic control compared to pre-pandemic metrics and also an increase in the volume of patients who require tests such as HbA1c and ACR.

HbA1c testing

As much as 66% in the first 8 weeks of March and April 2020 compared to weekly test volume between January 2019 and February 2020.

Retrospective Cohort Study¹ by Quest Diagnostics in the U.S. reviewed weekly test volumes at a large national lab with HbA1c test data from 1.9 million people with both type 1 and type 2 diabetes.

volume decreased

Up to 70% during early months of the pandemic and was associated with an increase in abnormal HbA1c results.

Retrospective Cohort Study² of 11 institutions in the U.S. and Canada with median monthly volume of 4968 HbA1c tests.



Glycemic control was worse during the early months of 2020 compared to same period in 2019.

Retrospective Cohort Study³ of 300 subjects with type 2 diabetes from a family medicine practice in the LLS

An estimated
60,000
missed
or delayed type 2

diabetes diagnoses.



And up to 70% reduction in HbA1c testing compared to 10-year historical trends.

A Retrospective Cohort Study⁴ in the United Kingdom compared UK-wide incidence, frequency of HbA1c testing, and mortality in people with type 2 diabetes before and after the first national lockdown in March 2020.

To what extent is there change in glycemic control?

HbA1c

increased

in immediate

post-lockdown

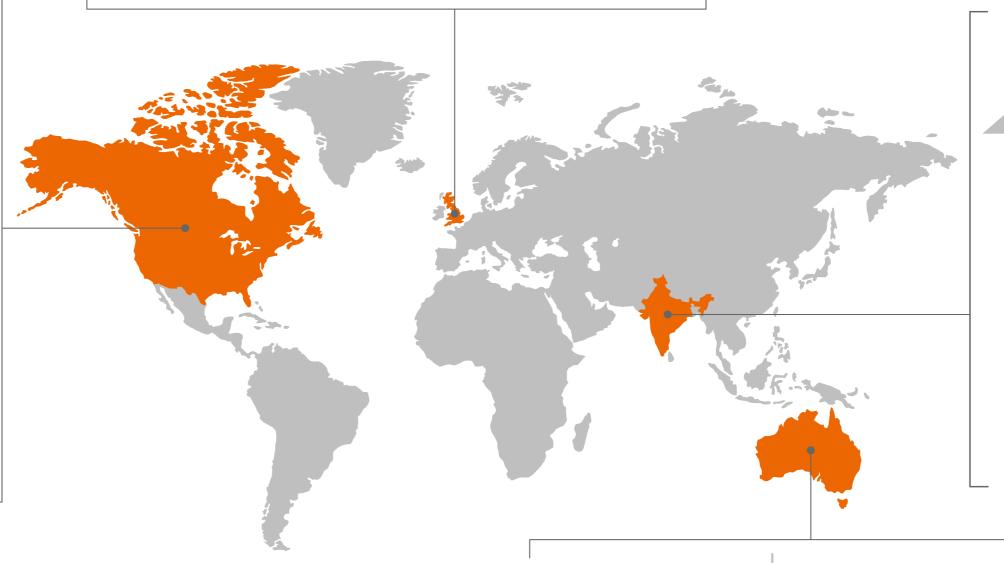
period compared

to pre-lockdown.

Retrospective Cohort Study⁵

in India observed 307 type 2 diabetes subjects from an

outpatient center.



Does COVID-19 affect population-level glycemic control?

4% point increase in people whose HbA1c values were outside targets.

And up to 26% decrease in HbA1c testing volume during early 2020 compared to previous 2 years.

Retrospective Cohort Study⁶ in Australia reviewed 800 general practices that covered 30% of the national population, type 2 diabetes subset.

Limitations: Publications and research on this topic are limited but steadily increasing in number. This communication is not intended to be exhaustive or definitive. Individual observations and studies listed here may have independent limitations.

^{1.} Maren SF, Harvey WK, James BM, et al. Consequences of the COVID-19 pandemic: reduced hemoglobin A1c diabetes monitoring. Population Health Management. 2021;24(1). DOI: 10.1089/pop.2020.0134

^{2.} Anu S, Dina NG, Allison BC, et al. The effect of the Covid-19 shutdown on glycemic testing and control. Clinica Chimica Acta. 2021;519:148-52.

^{3.} Ledford CJW, Roberts C, Whiesnant E, et al. Quantifying worsened glycemic control during the COVID-19 pandemic. Journal of the American Board of Family Medicine. 2021;34:S192. doi: 10.3122/jabfm.2021.S1.200446
4. Mathew JC, Alison KW, Lalantha L, et al. Impact of COVID-19 on diagnoses, monitoring and mortality in people with type diabetes in the UK. The Lancet. 2021;19. https://doi.org/10.1016/ S2213-8587(21)00116-9

^{5.} Jaideep K, Sushil J. Observational study on effect of lock down due to COVID 19 on HBA1c levels in patients with diabetes: experience from Central India. Prim Care Diab. https://doi.org/10.1016/j.pcd.2020.12.003

^{6.} Imai C, Hardie R-A, Thomas J, Wabe N, Georgiou A. The impact of the COVID-19 pandemic on general practice-based HbA1c monitoring in type 2 diabetes. General Practice Snapshot. 2021;5. https://doi.org/10.25949/Q9BE-BJ06