Impact of the COVID-19 Pandemic on Diabetes Mellitus Care in Portugal

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OBJECTIVES

- The COVID-19 pandemic was declared by the World Health Organization on 11 March 2020.[1] Worldwide, healthcare utilization decreased by about a third between the pre-pandemic and pandemic periods.[2]
- This study aims to evaluate the impact of the COVID-19 pandemic on the healthcare provided to patients with diabetes in Portugal, and its consequences on morbidity and mortality.

METHODS

- The pre-pandemic and pandemic periods were compared using publicly available data on performance and health outcomes indicators of the Portuguese National Health Service (NHS)[3], namely the number of registered users with diabetes mellitus (DM) and ≥1 glycated haemoglobin A1c (HbA1c) measurement over 6 months, and the proportion of diabetics with HbA1c ≤8%.
- Pre-pandemic data were modelled to project hypothetical scenarios without a pandemic using an exponential smoothing algorithm, and then compared with data collected during the pandemic.
- A cohort model was developed to estimate the number of all-cause deaths and years of life lost (YLL) due to the reduction in HbA1c testing and in HbA1c records ≤8% during the COVID-19 pandemic's first two years.
- MS Excel® was used for statistical analyses.

RESULTS

- There was a 14.9% relative reduction in the number of DM patients with a HbA1c measurement, (Fig. 1) and a 16.1% relative reduction in the proportion of patients with DM with controlled disease (HbA1c ≤8%) (Fig. 2) during the first two years of the pandemic.
- The model projections are 379 additional deaths in the Portuguese diabetic population and 4,813 YLL due to the increased proportion of DM patients with uncontrolled disease (Table 1).

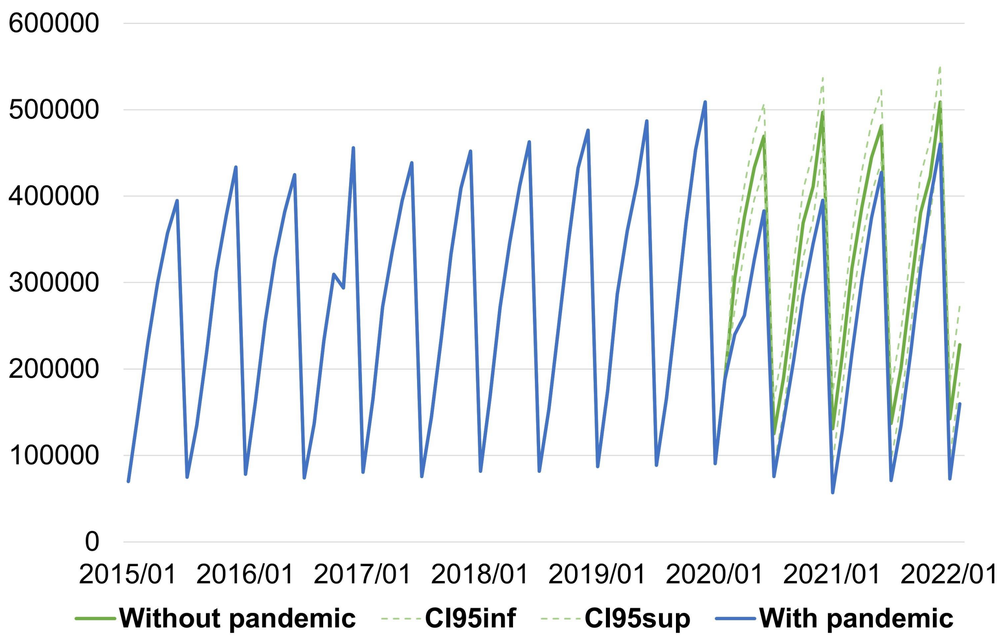

Fig. 1 - Number of patients with DM with at least one HbA1c measurement in the previous 6 months in Portugal.

Abbreviations: CI, confidence interval; DM, Diabetes mellitus; HbA1c, glycated haemoglobin A1c; inf, inferior; sup, superior.

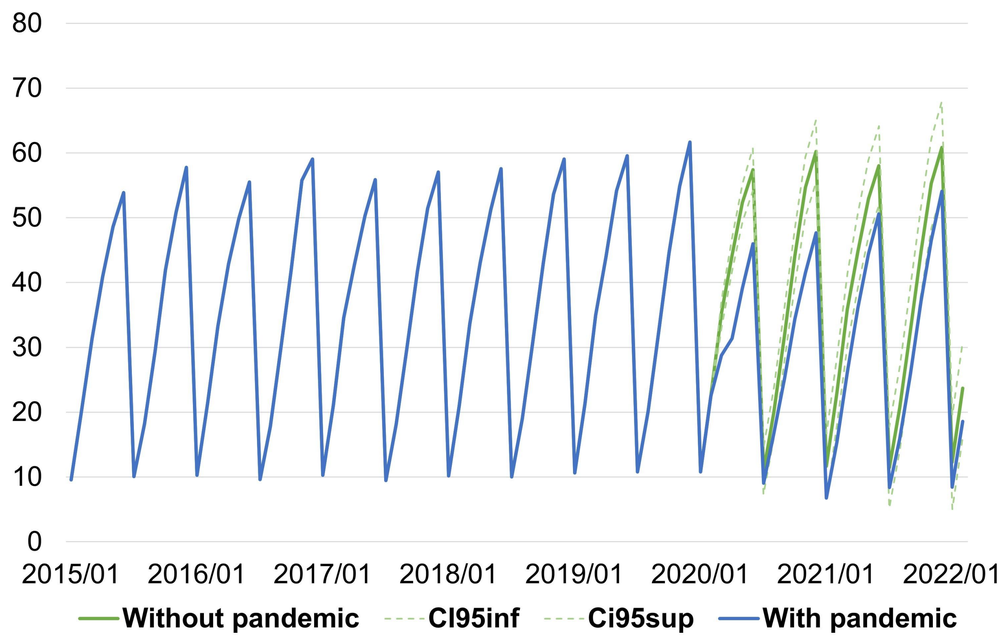

Fig. 2 - Proportion of patients with DM with HbA1c ≤8% in Portugal.

Abbreviations: CI, confidence interval; DM, Diabetes mellitus; HbA1c, glycated haemoglobin A1c; inf, inferior; sup, superior.

Table 1 - Impact of the pandemic on the mortality of patients with diabetes.

	Number of follow-up consultations[a]	Average number of controlled patients with diabetes per six months[b]	Total years of life	All-cause mortality
Scenario A	2,042,690	285,392	28,311	12,673
Scenario B	1,638,019	193,285	23,498	13,052
Difference B – A	-404,671	-92,107	-4,813	+379

Abbreviations: DM, Diabetes mellitus; HbA1c, glycated haemoglobin A1c.
Scenario A: without pandemic; Scenario B: with pandemic. a, From March 2020 to February 2022. b,Controlled DM if last recorded HbA1c ≤8%.

CONCLUSIONS

The disruption in healthcare provision by the Portuguese NHS during the pandemic increased DM morbidity, with a higher proportion of uncontrolled patients, thus contributing to increase mortality. The pandemic's impact on other routine diabetes care processes should be assessed, along with the long-term implications of impaired care.

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