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Short Communication

The impact of COVID-19 on national screening programmes in England

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ABSTRACT

Objectives: This study aimed to review the trends in adult national screening programme performance in England before and during the COVID-19 pandemic and consider the future implications.**Study design:** This was a quantitative, longitudinal study.**Methods:** Publicly available data on quarterly uptake of the five adult screening programmes in England were obtained from Public Health England. Trends from 2017 to 2021 were reviewed and discussed.**Results:** From 2019 to 2020 Q4, there were substantial reductions in performance in four of the five national screening programmes that were not in keeping with recent trends.**Conclusion:** The reductions in screening performance coincide with the arrival of the COVID-19 pandemic in England and may be explained by the temporary suspension of national screening programmes, and the inability or unwillingness of invitees to partake in screening once the programmes had been restored. Because of the delay in publication of the analysed data, further COVID-19 lockdowns in recent months make it probable that the current true screening performance figures are substantially lower than those presented in this article. The impact on screening programme performance is likely to be detrimental to patient outcomes, meaning remedial action is urgently required.

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The UK's National Health Service (NHS) provides five national screening programmes for adults: abdominal aortic aneurysm (AAA), diabetic eye, bowel cancer, breast cancer and cervical cancer.¹ The COVID-19 pandemic arrived in England in January 2020 and triggered the first national lockdown on 23 March 2020. This resulted in all programmes being significantly impacted and facing substantial alterations to their processes and delivery. For example, whilst home faecal occult blood testing for bowel cancer screening could safely continue, the capacity of second-line colonoscopy was significantly reduced. As the country moves towards a new postpandemic normalcy, it is essential that the consequences on health service delivery and patient outcomes are recognised, understood and remedied. As such, we aimed to track performance trends in NHS screening programmes in England before and during the COVID-19 pandemic. Publicly available data from Public Health England were obtained from the five national screening programmes,² and

performance trends from Q1 2017–2018 to Q3 2020–2021 (incorporating all available data), including the arrival of the pandemic in England (end of Q4 2019–2020), were analysed (see [Table 1](#)).

From 2019 to 2020 Q4 onwards, there were substantial reductions in performance metrics across four of the five national screening programmes (see [Appendix](#) for full results):

- AAA screening coverage (initial screen): quarterly performances before 2019–2020 Q4 ranged from 15.5% to 23.9% but declined to 14.8% in 2020 Q4 and 8.8% and 14.9% in 2021 Q2 and Q3, respectively (no data available for 2021 Q1);
- 2020–2021 Q2 (8.8%) and Q3 (23.7%) performances were 34.3 and 38.0 percentage points lower than the average corresponding quarterly performances since 2017–2018;
- Diabetic eye screening uptake (routine digital screening): 2017–2020 quarterly performances ranged from 82.0% to 82.7%

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Table 1
Trends in adult national screening programme performance in England prior to and during the COVID-19 pandemic.

Year and quarter		Abdominal aortic aneurysm screening (initial screen)	Diabetic eye screening uptake	Bowel cancer screening uptake	Breast screening uptake	Cervical screening coverage	
						<50 years	≥50 years
2017–2018	Q1	23.90%	82.70%	58.00%	67.20%	69.70%	77.10%
	Q2	20.00%	82.50%	56.10%	67.10%	69.10%	76.70%
	Q3	18.20%	82.30%	53.70%	66.80%	68.60%	76.30%
	Q4	15.50%	82.00%	58.70%	67.30%	69.40%	76.30%
2018–2019	Q1	23.20%	82.30%	58.90%	67.90%	69.60%	76.40%
	Q2	19.40%	82.30%	59.40%	67.40%	69.10%	76.20%
	Q3	19.00%	82.40%	58.20%	67.70%	69.10%	76.10%
	Q4	16.40%	82.60%	61.70%	67.80%	70.20%	76.40%
2019–2020	Q1	23.10%	82.20%	62.10%	67.80%	71.00%	76.70%
	Q2	19.60%	82.50%	67.50%	67.10%	70.80%	76.60%
	Q3	18.60%	82.30%	64.50%	65.80%	70.70%	76.40%
	Q4	14.80%	81.50%	55.40%	55.10%	70.90%	76.40%
2020–2021	Q1	–	76.30%	–	–	69.40%	75.80%
	Q2	8.80%	73.80%	68.70%	–	68.30%	75.30%
	Q3	14.90%	70.60%	69.00%	–	68.10%	75.00%
	Q4	–	–	–	–	–	–

Note: some data points were unavailable at time of analysis.

but declined to 76.3%, 73.8% and 70.6% in 2021 Q1, Q2 and Q3, respectively;

- Breast cancer screening uptake: quarterly performances before 2019–2020 Q4 ranged from 65.8% to 67.9% but declined to 55.1% in 2020 Q4 (no data available for 2020–2021 Q1–Q3);
- Cervical cancer screening coverage: 2019–2020 quarterly performances in those aged <50 years ranged from 70.7% to 71.0% but declined to 69.4%, 68.3% and 68.1% in 2020–2021 Q1, Q2 and Q3, respectively; 2019–2020 quarterly performance in those aged >50 years ranged from 76.4% to 76.7% but declined to 75.8%, 75.3% and 75.0% in 2020–2021 Q1, Q2 and Q3, respectively.
- Bowel cancer screening uptake: uptake fell slightly in 2019–2020 Q4; however, 2020–2021 Q1 data are unavailable, and by 2020–2021, Q2 and Q3 performance had normalised.

The observed reductions in screening performance may be explained by the temporary suspension of national screening programmes during the early stages of the pandemic in England,³ and the inability or unwillingness of invitees to partake in screening once the programmes had been restored (such as because of shielding requirements in the extremely clinically vulnerable, fear of contagion and anxiety around overburdening the NHS⁴). Substantial reductions in performance were observed across the four screening programmes that require in-person attendance and contact with a clinician, whereas no meaningful reduction was noted in the sole screening programme that involves the use of home testing kits in the initial stage (bowel cancer screening), suggesting invitee reluctance to attend in-person screening plays a significant role in the observed results.

Although the most recent data available at the time of writing refers to 2020–2021 Q3, England has experienced numerous additional months of COVID-19 lockdowns since this quarter. Although national screening programmes were not repeatedly suspended during subsequent lockdowns, it is likely that invitees were unable or unwilling to attend screening during these periods for the same reasons as mentioned previously. It is therefore probable that the current true screening performance figures are substantially lower than those presented in this article.

Although barriers exist to achieving accurate estimations, it is likely that the potential impact on both health service delivery and patient outcomes is highly significant. For example, although 7,261,382 of the 10,238,440 (70.9%) women aged 25–49 years eligible for cervical screening were adequately screened in the

preceding 3.5 years from 2019 to 2020 Q4,⁵ this figure had declined to 6,978,050 of the eligible 10,246,920 (68.1%) women in 2020–2021 Q3,⁶ generating more than 250,000 outstanding cervical screens in this age group alone. In 2019–2020, 1.0% of adequate cervical screening samples in women aged 25–64 years necessitated immediate referral for colonoscopy (without testing for High Risk Human papillomavirus (HR-HPV)).⁷ A similar proportion of those outstanding cervical screens would reflect around 2500 unidentified women who may require colonoscopy for the management of severe dyskaryosis, invasive carcinoma or glandular neoplasia.

The national screening programmes are vital cornerstones to the landscape of public health services in England. Although the methodology deployed in this article is a relatively crude approach to estimating the impacts of the pandemic, it is clear that COVID-19 has had substantial impacts on screening performances in England and that remedial action is urgently required. As such, increased capacity to deliver additional screening appointments is needed to work through the backlog of outstanding patients who are eligible to attend, which will require supplementary resources, funding and trained personnel. In addition, clear and persuasive health promotion communication is required from primary care and public health professionals that targets eligible patients, highlights the benefits of screening and addresses reservations around screening performance, which formed a substantial multifactorial barrier even before the pandemic.⁸

Author statements

Ethical approval

Not sought as only publicly available data were used.

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Competing interests

JRM is an Editor for Public Health, however has had no involvement in the decision making surrounding acceptance of this manuscript.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.puhe.2021.07.022>.

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