Timing to implement hot and cold sites in primary care BNSSG COV23

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Research Question[s]

What is the best timing to move to hot and cold sites in primary care? i.e., should this be before the number of cases rise over the next week, or delay until a certain number of cases have been reached?

Population: patients who require an appointment in primary care
Intervention: hot and cold primary care sites
Comparison: usual primary care
Outcomes: primary care resilience, e.g., staff sickness

Three further questions were considered in parallel. For primary care hot (suspected covid face to face) hubs and cold sites (non covid face to face primary care) to manage the covid response, is there any evidence, in the UK and abroad, of:

1. models that have been used to achieve this
2. scale (in terms of population size)
3. effectiveness in treating people and in minimising spread of contagion

Verdict

Limited evidence is available on the timing of this intervention, or on this intervention in general. One Canadian study suggests opening separate clinics when emergency department volume exceeds its six-month average by 10%. This study covered the Kingston, Frontenac, Lennox and Addington (KFL&A) public health region of Ontario, Canada and was moderately successful in reducing emergency department volume. No published models were identified.

What does the evidence say?

Number of included studies/reviews (number of participants)

Only one partially relevant study was found. Articles and opinion pieces were identified but these were either not directly relevant to the hot/cold sites or did not provide evidence.

Main findings

There is little evidence on the timing or justification of switch to hot and cold sites. The closest is a time series analysis of the impact of opening influenza assessment clinics on emergency department volume during the H1N1 pandemic in Canada; a 10% rise in ED volume above its six-month average was the rule used to trigger opening these clinics[1]. This study covered the Kingston, Frontenac, Lennox and Addington (KFL&A) public health region of Ontario, Canada (population ~209,000) and was moderately successful in reducing emergency department volume. There is otherwise no published evidence. A number of news articles have been published on the experience of hot and cold sites and of “fever clinics” but these did not provide evidence of their success or on how best to time their introduction. [2-5]

The NIHR Peninsula Applied Research Collaboration (PenARC) released a report on the rapid reorganisation of general practice during Covid-19[6]. They discussed the use of hot and cold hubs, as well as alternatives such as "in-car" assessments but did not provide evidence on their adoption or timing. A published report on shifting the balance of care discusses the aim of keeping patients out of hospitals, which is a similar goal to splitting GP care into hot and cold sites [7]. Other approaches have been considered, such as "isolation rooms" but there is as yet no evidence.[8] Such literature could be extrapolated to the hot and cold question, although timing would remain difficult to address.

Potential for modelling

Modelling was considered possible, but the only example was the Canadian time series which was not specifically targeted to our question[1]. Based on reports, published opinion, and discussions between authors, we considered the development of a simple model to guide decision making. The model assumes a switch to hot/cold site GP care is desirable on the grounds of reducing infection of staff and patients and reducing burden on EDs. The model furthermore assumes the primary barrier is logistical - hot and cold sites must be spread geographically over the CCG to prevent patients/staff from having to travel great distances to receive care. Under these assumptions, the key elements to model are: the number of daily covid cases requiring face-to-face care at GP practice; the number of non-covid daily face-to-face cases; the number of GP practices; and the capacity of each of the GP practices. An exponential growth model would be applied to the number of daily covid face-to-face cases. The optimal point for adopting the hot/cold split is when the GP practices required for hot (i.e. covid-related) visits can be spread geographically over the CCG.

Strength of the evidence

Very weak and limited.

Summary of searches

Full details of the searches are provided in the tables below. We searched for suggested terms “hot hub”, “cold hub”, “hot site”, and “cold site” but also expanded to the alternative terms “streamed services model”, “fever clinic”, and “public health preparedness clinic”. Searches on KSR found 40 hits but no relevant evidence. Searches on Medline found 108 hits and 5 papers for full text screening; none of these provided evidence on timing (or justification) for adopting a streamed services model. One paper (Hall 2013) investigated the impact of establishing influenza assessment

clinics during the H1N1 pandemic on emergency department wait times in Canada. Time series analyses were used to explore ED volume and the success of IACs in reducing pressure. The deployment of IACs was triggered by a rise of 10% in ED volume above the six-month running average. Searches of Rayyan "COVID-19 Open Research Dataset" found 39 hits with mentions of general practice or primary care, but none were relevant.

Date question received: 4 April 2020
Date searches conducted: 4-6 April 2020
Date answer completed: 7 April 2020

References

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Disclaimer

This report has not been peer-reviewed; it should not replace individual clinical judgement and the sources cited should be checked. The views expressed in this report represent the views of the authors and not necessarily those of the University of Bristol, the NHS, the NIHR, or the Department of Health and Social Care. The views are not a substitute for professional medical advice.

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Search for SRs and Primary studies

Source	Search strategy	Number of Hits	Relevant evidence identified
KSR Evidence	Used term "covid" in “All text”	31	No relevant evidence
	Use the terms ("general practice" OR "primary care") AND ("pandemic" OR "epidemic") in "All text"	9	No relevant evidence
	Searches for "hot site", "cold site", "hot hub", or "cold hub" in “All text”	0	No relevant evidence
	Term “fever clinic” in “All text”	0	No relevant evidence
	Term “public health preparedness clinic”	0	No relevant evidence
	Term "coronavirus" in “All text”	0	No relevant evidence
Medline	((((((covid[Title]) OR coronavirus[Title]) OR sars-cov[Title])) OR ((epidemic[Title]) OR pandemic[Title]))) AND ((primary care[Title]) OR general practice[Title]) Abstracts were screened if available. Otherwise, full text links were followed and skim-read.	81	There were several reviews of primary care management strategies during the 2009 H1N1 influenza pandemic. None discussed hot/cold site separation. Relevant papers are discussed in turn below. • Helen Salisbury: Is general practice prepared for a pandemic? BMJ. 2020 Mar 9;368:m944. doi: 10.1136/bmj.m944. Salisbury H.[9] Opinion on general practice during Covid-19 but does not provide evidence on hot and cold sites or on their timing. • Covid-19: how coronavirus will change the face of general practice forever. Thornton J. PMID: 32229477 DOI: 10.1136/bmj.m1279 [10] Mentions the use of hot hubs but no evidence on timing or justifying their adoption.

			• Primary care physicians and pandemic influenza: an appraisal of the 1918 experience and an assessment of contemporary planning. J Public Health Manag Pract. 2008 Jul-Aug;14(4):379-86. doi: 10.1097/01.PHH.0000324567.10652.db.Lauer J, Kastner J, Nutsch A. [11] Mentioned alternative care sites to separate pandemic-related cases but not relevant to hot/cold sites and not relevant to timing. • General practice and pandemic influenza: a framework for planning and comparison of plans in five countries. PLoS One. 2008 May 28;3(5):e2269. doi: 10.1371/journal.pone.0002269. Patel MS, Phillips CB, Pearce C, Kljakovic M, Dugdale P, Glasgow N. [12] Noted that "some plans articulated a surge in demand for influenza care as a threat to general practice's survival, and proposed assessment and treatment clinics as a way of protecting them". No supporting evidence or anything relevant to timing was provided. The referenced plans (from 2005 and 2006) were no longer available online. • Australian general practice and pandemic influenza: models of clinical practice in an established pandemic. Med J Aust. 2007 Apr 2;186(7):355-8. Phillips CB, Patel MS,

			Glasgow N, Pearce C, Dugdale P, Davies A, Hall S, Kljakovic M. [13] Talked about a "streamed services model" where general practices were split into influenza-specific sites or other sites. However, no evidence on the appropriate timing to introduce this separation. A further search (below) for papers describing the "streamed services model" found no relevant evidence.
	(("public health preparedness clinic") OR "fever clinic")) AND (((((sars-cov*[Title]) OR covid*[Title]) OR coronavirus[Title]) OR epidemic[Title]) OR pandemic[Title])	25	• Influenza assessment centres: a case study of pandemic preparedness to alleviate excess emergency department volume. CJEM. 2013 Jul;15(4):198-205. Hall GG, Perry AG, vanDijk A, Moore KM.[1] Authors investigated Influenza Assessment Centres as a means to reduce emergency department volume and wait times. They used time series analyses to determine time to close the IACs. Suggests optimal timing should be driven by pressure on emergency department visits, rather than total cases needing contact at GP practices. This is likely most relevant evidence for timing of switch to cold and hot sites.
	((((((covid[Title]) OR coronavirus[Title]) OR sars-cov[Title])) OR ((epidemic[Title]) OR pandemic[Title]))) AND (((((("hot hub") OR "cold hub") OR "hot site") OR "cold site"))))	0	No relevant evidence
	"streamed services model"	2	No relevant evidence
Rayyan "COVID-19 Open Research Dataset"	Screened articles with "general practice" or "primary care" in their title using RStudio software. Screened the titles themselves and followed links to any that appeared relevant.	39	Noted overlap with studies identified on Medline above. Five links were followed to full text but no relevant evidence found.

Search details

Initial project screen:

Source	Link	Relevant Evidence Identified
CEBM, University of Oxford	https://www.cebm.net/covid-19/	No relevant evidence.
Evidence aid	https://www.evidenceaid.org/coronavirus-resources/	No relevant evidence.
Cochrane Methodology Review Group	Infection control and prevention: https://www.cochranelibrary.com/collections/doi/SC000040/full Evidence relative to critical care: https://www.cochranelibrary.com/collections/doi/SC000039/full	No relevant evidence on either repository.
Department of Health and Social Care Reviews Facility	http://eppi.ioe.ac.uk/COVID19_MAP/covid_map_v3.html	No relevant evidence.
UCSF COVID19 papers	https://ucsf.app.box.com/s/2laxq0v00zg2ope9jppsqtnv1mtxd52z	Schwartz CID letter on Traffic Control Bundling (TCB) was closest but related to hot/cold sites within hospitals and had no relevance to timing.
PHE Knowledge and Library Services	https://phelibrary.koha-ptfs.co.uk/coronavirusinformation/	No relevant evidence
WHO Global Research COVID19 database	https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov	No relevant evidence
CDC COVID19 guidance	https://www.cdc.gov/coronavirus/2019-ncov/hcp/index.html	No relevant evidence

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KSR Evidence			
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Rayyan "COVID-19 Open Research Dataset"			