

## Elective surgical services need to start planning for summer pressures

GreenSurg Collaborative; Glasbey, James; Beggs, Andrew; Nankivell, Paul

DOI:

[10.1093/bjs/znad033](https://doi.org/10.1093/bjs/znad033)

License:

Creative Commons: Attribution (CC BY)

*Document Version*

Publisher's PDF, also known as Version of record

*Citation for published version (Harvard):*

GreenSurg Collaborative, Glasbey, J, Beggs, A & Nankivell, P 2023, 'Elective surgical services need to start planning for summer pressures', *British Journal of Surgery*, vol. 110, no. 4, pp. 508-510.  
<https://doi.org/10.1093/bjs/znad033>

[Link to publication on Research at Birmingham portal](#)

### General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

### Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact [UBIRA@lists.bham.ac.uk](mailto:UBIRA@lists.bham.ac.uk) providing details and we will remove access to the work immediately and investigate.



# Elective surgical services need to start planning for summer pressures

GreenSurg Collaborative

Correspondence to: James Glasbey, NIHR Global Health Research Unit on Global Surgery, University of Birmingham, Institute of Translational Medicine, Heritage Building, Mindelsohn Way, Birmingham, West Midlands B152TH, UK (e-mail: [j.glasbey@bham.ac.uk](mailto:j.glasbey@bham.ac.uk))

Members of the GreenSurg Collaborative are co-authors of this study and are listed under the heading Collaborators.

Dear Editor

The COVID-19 pandemic exposed the fragility of elective surgical and anaesthesia services, resulting in millions of operations being cancelled across the world<sup>1</sup>. As health systems plan post-COVID recovery of elective surgical services, they should identify potential future external risks to surgical services<sup>2</sup>. Extreme weather events resulting from climate change could present an increasing challenge to healthcare systems<sup>3</sup>; surges in injuries and cardiorespiratory complications during heatwaves could reduce capacity to deliver elective care<sup>4</sup>. The aim of this study was to determine the impact of summer pressures on the delivery of elective surgery in the UK.

The authors conducted a cross-sectional survey of surgeons, anaesthetists, and critical care doctors who worked during the UK heatwave of 16–19 July 2022. A total of 271 responses were received from across 20 specialties in 140 UK hospitals. One in five respondents (50 of 271, 18.5 per cent) reported that the heatwave directly resulted in the cancellation of elective surgery. A further third (96 of 271, 35.1 per cent) anticipated that cancellations were likely in the event of a prolonged heatwave. Factors contributing to heatwave-related cancellations included staff shortages (reported by 35.8 per cent of 271 respondents), unsafe theatre environments (30.3 per cent), and bed shortages (22.1 per cent) (Fig. 1).

Surgical services were poorly prepared for heatwaves. Ambient temperature could not be controlled in 41.0 per cent of operating theatres. Most hospitals (119 of 140, 85.0 per cent) lacked summer pressure plans to maintain elective surgical safety and capacity. Some 96 respondents (35.4 per cent) reported making adaptations to maintain the routine surgical activity during the heatwave (Table S1).

These data demonstrate that even short heatwaves may result in widespread disruption to surgical services. As hospitals tackle post-COVID surgery backlogs<sup>5</sup>, they must consider how to safeguard against further climate change-related disruption to the delivery of surgical services. This should be included in the preparation of summer pressure plans to improve the resilience of elective surgery services.

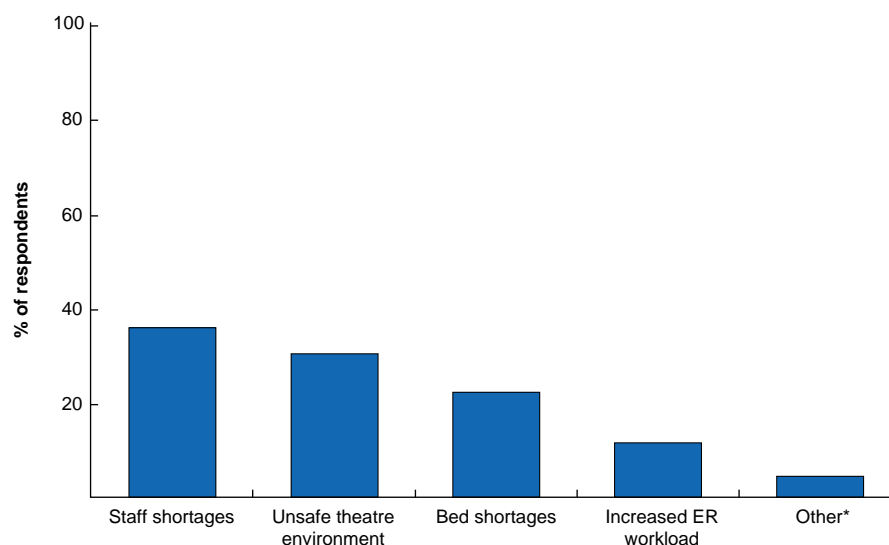
## Collaborators

GreenSurg Collaborative: Maria Picciochi, James C Glasbey, Elizabeth Li, Sivesh K Kamarajah, Dmitri Nepogodiev, Joana FF Simoes, Aneel Bhangu, Arjun Nathan, Nizar S M Ismail, Amer J Durrani, Fanourios Georgiades, Ignatius Liew, Mamun D Dornseifer, Chetan D Parmar, Angelos G Kolias, Efstratia A Baili, Ashwani Kumar Nugur, Erminia Albanese, Marios Ghobrial, Andreas K Demetriades, Joseph P Attwood, Baljit Singh, Ciaran M Barlow, Sheila M Fraser, Manas K Dube, Avinash Aujayeb, Dinesh K Thekkinkattil, Abraham J Botha, Tosin O Akinyemi, W K E Peng, Salah A Hammouche, Muyed K A Mohamed, Mahmoud K A Elmesalmi, Maria G Cannoletta, Kai Yuen Wong, Hassan MT Fawi, Suk F Cheng, Funlayo O Odejinmi, Hugo RM Layard Horsfall, Nikolaos Machairas, Rory C Cuthbert, Shahbaz S Malik, Rory G Callan, Richard J Egan, Nader N Moawad, David W Ferguson, Nathan Grundy, Michelle L Collins, Jonathan BT Herron, Chetan Khatri, Sophia E Lewis, Tariq Alhammali, Andrew J Beamish, Kiran K Singiseti, Joseph Shalhoub, Chung S Chean, Rajesh Sivaprakasam, Sreekar Devarakonda, Miles W Benjamin, Sivesh K Kamarajah, James Ashcroft, Pierfrancesco Lapolla, Christin Henein, Baljit Singh, Cillian T Forde, Mohammad Zain Sohail, Rachael J Clegg, Zoe M Seymour, Stavros V Parasyris, Nikolaos Dimitrokallis, Benjamin J Davies, Waleed F A Fahmy, Obafemi K Wuraola, Athanasios Serlis, Binay Gurung, Andrew J Kelly, Rishi Talwar, Paul S Cullis, Dale J Gracie, Markus P Baker, George WV Cross, Wai Wai Win Mar, Raashad Hasan, Dimitri J Pournaras, Cho Ee Ng, Ashok R Ramasamy, Amir N A Iskandar, James C Glasbey, Haaris A Shiwani, Sujesh Bansal, Stephen F McAleer, Omar Ahmed, Nader N Moawad, Umakanth R Kempanna, John-Joe Reilly, Richard J Davies, Sibtain Anwar, Grant A Harris, Usama Ahmed, Kareem T Elsanhoury, Wen Jie Chin, Nikhil Kumar Ponugoti, Javaria Faiz, Amer J Durrani, Mohit Bhatia, Jonathon RC Sheen, Imran H Yusuf, Ziyang Sheng, Grant D Stewart, Shafquat Zaman, Aloka S Danwaththa Liyanage, Karthikeyan P Iyengar, Ravi Aggarwal, Setthasorn Z Y Ooi, Ayesha Mahmud, Mingzheng Aaron Goh, James M D Wheeler, Nicola J Eardley, Michael El Boghdady, Delvene Soares, Alexander D O'Connor, Ankur D Kariya, Filip Fryderyk Brzeszczyński, Joshua L Moreau, Abdel

Received: January 11, 2023. Accepted: January 22, 2023

© The Author(s) 2023. Published by Oxford University Press on behalf of BJS Society Ltd.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.



**Fig. 1** Factors contributing to heatwave-related cancellations of elective surgery

\*IT problems caused by the heat, patients unwilling to have surgery owing the heatwave. ER, emergency room.

Saed, Isobel Pilkington, Devaraj M Navaratnam, Neil A Ryan, Hooman Soleymani Majd, Lamiese Ismail, Hemina B Shah, Akib M Khan, Paul C Nankivell, Waleed Fayez Ali Fahmy, Robert W Tyler, Leandro Siragusa, Syed S Mannan, Giorgio Bogani, Jibrán Abbasy, Piergiorgio Solli, Nadine Di Donato, Josh R Burke, Abdul Hakeem, Firas Aljanadi, Alexander J Baldwin, Mohamed Bekheit, Peter P Bobak, Matyas Fehervari, Fabio Barra, Mohamed A Thaha, Nadir Syed, James B Olivier, Khaled A K Mohammed, Kate J Williams, Tatiana Martin, Aman S Coonar, Michael W S Ho, Mark W Yao, Alexandros Konstantinos Charalabopoulos, Porfyrios G Korompelis, Kay Anne Mak, Abdelrahman AA Elsayed, Eve R Hawley, Ahmed Y Azzam, Alan JB Kirk, Ahmed E Sherif, Mostafa K.A Hussein, James A Blair, Yirupaiahgari KS Viswanath, Simon J Cole, Dheeraj S Attarde, Anna Y Allan, Ioannis N Gerogiannis, Shiva Dindyal, Muhammad H Siddique, Saidah Sahid, Jonathan J Neville, David N Naumann, Matthew H V Byrne, Sean MA Garcia, Ali Yasen Y Mohamedahmed, Alan A Askari, Joerg M Pollok, Hani J Marcus, Kapil Sahnan, Mohamed A Thaha, Qamar Mustafa, Ruben P Thumbadoo, Angelos G Kolias, Ketan Agarwal, Sean Khedar Ramcharan, Mehran Lashari, Mostafa EA Abdelkarim, Toby M Noton, Bilal H Kirmani, Robert D J Whitham, Sofia Anastasiadou, Rute S S Castelhana, Sanad Saad, Gakul Dr Bhatta, Chetan D Parmar, Antonio Leyte Golpe, Rucira Ooi, Emily C M McKenzie, Kenneth N Linton, Khalid M Bhatti, Shyama S Chadha, Liam N Phelan, Alvaro Bedoya Ronga, Vladislav Kutuzov, Mohammed Jibreel Mohammed, Sharan H Sambhwani, Catrin Sohrabi, Raghavan Vidya, Jaskiran K Gill, Lisa S Rampersad, Bincy Merin Zacharia, Waheeb A K Al-Azzani, Omar Pathmanaban N Pathmanaban, Rachel Sarah Olive, Fahad S Hossain, Jessica Harvey, Naren K Kumaran, Annamaria Minicozzi, Andrew Neil Wheelton, Victoria A Evans, Andrew D Beggs, Omar M Ismail, Chandra Shekhar Biyani, Shaikh S Seraj, Mohammed Deputy, Eltayeb B E Shammeseldin, Wafi Mohammed W M Mohammed, Mohamed Onsa, Yizhe Lim, Ahmad Riyadh Abdulsahab Al-Shaye, Mujahid Gasmelseed Fadlallah, Hash Al-Musawi, Umar B J Yousuf, Safia Zahir Ahmed, Alexandros Laios, Aliabbas Moosa, Zoe Li, Peter J Hutchinson, Abdalla Hassan Abdalla Hassan, Shreya M Kulkarni, Shihab A Chowdhury, Ahmed Y Ammar, Tarig Hassan Ahmed, Raimundas A Lunevicius, Dimitrios Angelou, Edward J

Caruana, Panna K Patel, Stephen J Bromage, Panagiotis Kapsampelis, Khaled M Sarraf, Antonios Nicolaos Athanasiou, Jai Relwani, James E Tomlinson, Amarkumar D Rajgor, Pedram Panahi, Rachael V Collins.

## Funding

This work was supported by a National Institute for Health Research (NIHR) Global Health Research Unit Grant (NIHR 16.136.79). James Glasbey is supported by an NIHR Doctoral Research Fellowship (NIHR300175). The funder had no role in study design or writing of this report. The views expressed are those of the authors and not necessarily those of the National Health Service, the NIHR or the UK Department of Health and Social Care.

## Author contributions

Maria Picciochi, James C Glasbey, Elizabeth Li, Sivesh K Kamarajah, Dmitri Nepogodiev, Joana FF Simoes, Aneel Bhangu conceptualised the study, designed and distributed the study, and provided critical input on the study manuscript. Maria Picciochi was the study lead and wrote the first draft of the manuscript, and James Glasbey and Aneel Bhangu provided senior oversight and editorship. Aneel Bhangu is the overall guarantor. The GreenSurg collaborators completed the assessment for their hospital and reviewed the final manuscript providing critical insight prior to submission.

## Disclosure

The author declares no conflict of interest.

## Supplementary material

Supplementary material is available at *BJS* online.

## Data availability

Anonymised data available upon request of the writing group, and successful completion of a Data Sharing Agreement through an

Application Programming Interface (API) linked to the REDCap data server hosted at Birmingham Clinical Trials Unit at the University of Birmingham.

## References

1. COVIDSurg Collaborative. Projecting COVID-19 disruption to elective surgery. *Lancet* 2022;**399**:233–234
2. COVIDSurg Collaborative. Elective cancer surgery in COVID-19-free surgical pathways during the SARS-CoV-2 pandemic: an international, multicenter, comparative cohort study. *J Clin Oncol* 2021;**39**:66–78
3. Bartington S, Bonsu N, Bloss W, Bryson J, Cavoski A, Dove A et al. Keeping 1.5°C Alive. 2022. Accessed 23 June 2022
4. The Lancet. 2022 Heatwaves: a failure to proactively manage the risks. *Lancet* 2022;**400**:407
5. Nepogodiev D, Acharya R, Chaudhry D, Harris B, Li E, Jolly K et al. Forecasting waiting lists for elective procedures and surgery in England: a modelling study. *medRxiv* 2022. <https://doi.org/10.1101/2022.06.20.22276651> (accessed 23 June 2022)