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Fahey BA, Farrell R, Fitzgerald C, Kinsella J, Larkin JO*, Lennon P, Maguire PJ*, Mccormick P, Mehigan BJ, Mohan H, Nugent T, O'Sullivan H, Ravi N, Reynolds JV*, Rogers A, Shokuhi P, Smith J, Smith LA, Timon C (***St. James's Hospital***); Bashir Y, Bass G, Connelly T, Earley H, Elliott JA*, Gillis A, Kavanagh D, Neary P, O'riordan J, Reynolds IS, Rice D, Ridgway P, Umair M, Whelan M (***Tallaght Hospital***); Carroll P, Collins C, Corless K, Finnegan L, Fowler A, Hogan A, Kerin M, Lowery A*, McAnena P, McKevitt K*, Nizami K, Ryan É, Samy A (***University Hospital Galway***); Coffey JC, Cunningham R, Devine M, Nally D*, Peirce C, Tormey S (***University Hospital Limerick***); Hardy N, Neary P, O'Malley S*, Ryan M (***University Hospital Waterford/University College Cork***).

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Maggiore/Bellaria Carlo Alberto Pizzardi Ausl Bologna); Barmasse R, Mochet S*, Morelli L, Usai A (***Ospedale Regionale Umberto Parini***); Bianco F*, Incollingo P (***Ospedale S. Leonardo - Asl Napoli 3 Sud, Castellammare Di Stabia***); Mancini S, Marino Cosentino L*, Sagnotta A* (***Ospedale San Filippo Neri***); Fruscio R*, Grassi T, Nespoli LC, Tamini N* (***Ospedale San Gerardo***); Anastasi A, Bartalucci B, Bellacci A, Canonico G*, Capezzuoli L, Di Martino C, Ipponi P, Linari C, Montelatici M, Nelli T, Spagni G, Tirloni L, Vitali A (***Ospedale San Giovanni Di Dio***); Abate E, Casati M*, Casiraghi T, Laface L, Schiavo M (***Ospedale Vittorio Emanuele Iii - Carate Brianza***); Arminio A, Cotoia A, Lizzi V*, Vovola F (***Ospedali Riuniti Azienda Ospedaliera Universitaria Foggia***); Vergari R* (***Ospedali Riuniti Di Ancona***); D'Ugo S*, Depalma N, Spampinato MG (***P.o."Vito Fazzi"***); Bartolucci P, Brachini G, Bruzzaniti P, Chiappini A, Chiarella V, Ciccarone F, Cicerchia PM, Cirillo B, De Toma G, Di bartolomeo A, Fiori E, Fonsi GB, Franco G, Frati A, Giugliano M, Iannone I, La Torre F, Lapolla P*, Leonardo C, Marruzzo G, Meneghini S, Mingoli A, Ribuffo D, Salvati M, Santoro A, Sapienza P, Scafa AK, Simonelli L, Zambon M (***Policlinico Umberto I Sapienza University Of Rome***); Capolupo GT*, Carannante F, Caricato M*, Mascianà G, Mazzotta E (***Policlinico Universitario Campus Bio Medico Of Rome***); Gattolin A, Migliore M, Rimonda R, Sasia D*, Travaglio E (***Regina Montis Regalis Hospital, Mondovì***); Cervellera M, Gori A, Sartarelli L, Tonini V* (***S.orsola-Malpighi Hospital***); Giacometti M*, Zonta S (***Ospedale San Biagio, ASL VCO***); Chessa A*, Fiorini A, Norcini C (***San Giovanni Di Dio***); Colletti G, Confalonieri M, Costanzi A*, Frattaruolo C, Mari G, Monteleone M (***San Leopoldo Mandic***); Bandiera A, Bocciolone L, Bonavina G, Candiani M*, De Nardi P*, Gagliardi F, Medone M, Mortini P*, Negri G*, Ottolina J, Parise P, Piloni M, Sileri P, Vignali A (***San Raffaele Scientific Institute, Milan***); Belvedere A, Bernante P, Bertoglio P, Boussedra S, Brunocilla E, Cipriani R, Cisternino G, De Crescenzo E, De Iaco P*, Dondi G, Frio F*, Jovine E, Mineo Bianchi F, Neri J, Parlanti D, Perrone AM, Pezzuto AP, Pignatti M*, Pinto V, Poggioli G, Ravaioli M, Rottoli M*, Schiavina R, Serenari M*, Serra M, Solli P*, Taffurelli M*, Tanzanu M, Tesei M, Violante T, Zanotti S (***Sant'orsola Hospital, Alma Mater Studiorum University Of Bologna, Italy***); Borghi F, Cianflocca D, Di Maria Grimaldi S, Donati D, Gelarda E, Geretto P, Giraudo G, Giuffrida MC, Marano A*, Palagi S, Pellegrino L, Peluso C, Testa V* (***Santa Croce E Carle Hospital, Cuneo***); Agresta F*, Prando D*, Zese M* (***Santa Maria Degli Angeli Hospital Ulss5 - Adria***); Aquila F, Gambacciani C, Lippa L, Pieri F, Santonocito OS* (***Spedali Riuniti Di Livorno***); Armatura G*, Bertelli G, Frena A, Marinello P, Notte F, Patauner S, Scotton G* (***St. Moritz Hospital***); Fulginiti SF, Gallo G*, Sammarco G, Vescio G (***University 'Magna Graecia' Of Catanzaro***); Balercia P, Catarzi L, Consorti G* (***University Hospital Umberto I Ancona***); Di Marzo F* (***Valtiberina***); Fontana T* (***Vittorio Emanuele***).

Japan: Daiko H*, Ishikawa M, Ishiyama K, Iwata S, Kanematsu K, Kanemitsu Y*, Kato T*,

Kawai A*, Kobayashi E, Kobayashi Kato M, Moritani K, Nakatani F, Oguma J, Tanase Y, Uno M (***National Cancer Center Hospital***).

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Sloothaak D, Van Duijvendijk P* (***Gelre Ziekenhuis***); Posma-Bouman L* (***Slingeland Ziekenhuis***); Derksen T, Franken J, Oosterling S* (***Spaarne Gasthuis***); De Bree R* (***University Medical Center Utrecht***); Konsten J*, Van Heinsbergen M (***Viecuri Medisch Centrum***).

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Sousa S, Teixeira J (***Centro Hospitalar Universitário Do Algarve - Unidade De Faro***); Amorim E, Baptista VH, Cunha MF*, Dias B, Fazenda A, Melo Neves JP, Policarpo F, Sampaio da Nóvoa Gomes Miguel II, Veiga D (***Centro Hospitalar Universitario Do Algarve - Unidade De Portimão***); Andrade AK, Bandovas JP, Borges N*, Branquinho A, Chumbinho B, Correia J, Fidalgo H, Figueiredo de Barros I, Frade S, Gomes J, Maciel J, Pina S, Rodrigues A, Silva N*, Silveira Nunes I, Sousa R (***Centro Hospitalar Universitário Lisboa Central***); Ascensão J, Azevedo P, Costeira B, Cunha C, Garrido R*, Gomes H, Lourenço I, Mendinhos G*, Miranda P, Nobre Pinto A, Peralta Ferreira M, Ribeiro J, Rio Rodrigues L, Sousa Fernandes M (***Hospital Beatriz Angelo***); Azevedo J* (***Hospital Da Horta, E.p.e.***); Galvão D, Soares AC, Vieira A*, Vieira B (***Hospital De Santo Espirito Da Ilha Terceira***); Patrício B, Santos PMDD*, Vieira Paiva Lopes AC (***Hospital De Torres Vedras - Centro Hospitalar Do Oeste***); Cunha R, Faustino A, Freitas A, Martins AB, Mendes JR*, Parreira R, Rosa J, Teves M (***Hospital Do Divino Espírito Santo***); Abreu da Silva A*, Claro M, Costa Santos D, Deus AC, Grilo JV (***Hospital Do Litoral Alentejano***); Borges F*, Corte Real J, Henriques S, Lima MJ, Matos Costa P (***Hospital Garcia De Orta***); Brito da Silva F, Caiado A*, Fonseca F (***Instituto Português De Oncologia De Lisboa Francisco Gentil***); Ângelo M, Baiao JM, Martins Jordão D*, Vieira Caroço T (***Ipo Coimbra***); Messias J, Millan A, Salgado I, Santos P* (***Ipo Lisboa***); Baía C, Canotilho R, Correia AM, Ferreira Pinto AP, Peyroteo M, Videira JF* (***Ipo Porto***).

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Alkarak S, Alqannas M*, Alyami M*, Alzamanan M, Cortés Guiral D*, Elawad A (***King Khalid Hospital***); AlAamer O, Alriyees L, Alselaim N* (***King Saud Bin Abdulaziz University For Health Sciences, King Abdullah International Medical Research Center, Ministry Of National Guard, Health Affairs, General Surgery Department.***); Abdulkareem A, Ajlan A, Akkour K, Al-Habib A, Al-Khayal K, Alatar A, Alburakan A, Alhalal H, Alhassan B, Alhassan N, Alobeed O, Alsaif A, Alsaif F, Alshammari S, Alshaygy I, Barry M, Bin Nasser A*, Bin Traiki T, Bokhari A, Elwatidy S, Helmi H, Madkhali A, Nouh T*, Rabah PD, Zubaidi A (***King Saud University***).

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Spain: Castaño-Leon AM*, Delgado Fernandez J, Eiriz Fernandez C, Espino Segura-Illa M, Esteban Sinovas O, Garcia Perez D, Gomez P, Jimenez-Roldan L, Lagares A, Moreno-Gomez L, Paredes I, Pérez Núñez A, Sánchez Aniceto G*, Santas M (***12 De Octubre***

University Hospital); Fernández Rodríguez P, Paniagua García Señorans M*, Sanchez-Santos R, Vigorita V (***Álvaro Cunqueiro Hospital***); Acrich E, Baena Sanfeliu E, Barrios O, Golda T*, Santanach C, Serrano-Navidad M, Sorribas Grifell M, Vives RV (***Bellvitge University Hospital***); Escolà D, Jiménez A* (***Comarcal Alt Penedés***); Cayetano Paniagua L, Gómez Fernández L* (***Consorci Sanitari De Terrassa***); Artigues E, Bernal-Sprekelsen JC*, Catalá Bauset JC (***Consorcio Hospital General Universitario***); Collera P, Diaz Del Gobbo R, Farre Font R, Flores Clotet R, Gómez Díaz CJ*, Guàrdia N, Guariglia CA, Osorio A, Sanchez Jimenez R, Sanchon L, Soto Montesinos C (***Fundació Althaia - Xarxa Assistencial Universitària De Manresa***); Albi Martin B, García Villayzán JE* (***Fundación Jimenez Diaz University Hospital***); Alonso-Lamberti L, Assaf M, Baeza Pintado N, Carabias A, García-Quijada J, Huertas Fernandez MA, Jimenez Miramón J, Jimenez V*, Jover JM, Landeo Agüero SA, Leon R, Martín Salamanca MB*, Pérez Simón V, Ponce S, Rodriguez JL, Salazar A, Valle Rubio A (***Getafe University Hospital***); Aguado H* (***Hellín Hospital***); Aldecoa Ansorregui I, Bravo Infante R, De Lacy FB, Di Somma A*, Díaz-Feijoo B*, Enseñat Nora J*, Fabregas N, Ferrés A, Gil Ibañez B, Gonzalez Sanchez JJ*, Gracia I, Hoyos Castro JA, Lacy AM*, Langdon C, Momblán D, Morales X, Oleaga L, Otero A, Pedrosa L, Poblete Carrizo J, Reyes Figueroa LA, Roldan Ramos P, Rumia-Arboix J, Tercero-Uribe AI, Topczewski TE, Torales J, Torne A, Torné R, Turrado-Rodriguez V*, Valero R, Valverde S (***Hospital Clinic Barcelona***); Anula R, Cano-Valderrama O, Del Campo Martín M, Díez-Valladares L, Domínguez I, Dziakova J, García Alonso M, García Romero E, Gómez Latorre L, Muguerza JM*, Pizarro MJ, Saez Carlin P, Sánchez del Pueblo C, Sánchez-Pernaute A, Sanz Ortega G, Sanz-Lopez R, Torres A (***Hospital Clínico De Madrid***); Garcés-Albir M*, Lopez F*, Martín-Arévalo J, Moro-Valdezate D*, Pla-Marti V (***Hospital Clínico Universitario De Valencia***); Beltrán de Heredia J, De Andrés Asenjo B*, Gómez Sanz T, Jezieniecki C, Nuñez Del Barrio H, Ortiz de Solórzano Aurusa FJ, Romero de Diego A, Ruiz Soriano M, Trujillo Díaz J, Vazquez fernandez A (***Hospital Clínico Universitario De Valladolid***); Lora-Cumplido P, Sosa MV* (***Hospital De Cabueñes***); Gonzalez-Gonzalez E, Minaya Bravo AM* (***Hospital Del Henares***); Alonso de la Fuente N, Cazador Labat M, Cecchini L, Espinosa CA*, Jimenez Toscano M*, López Campillo A, Mancebo G, Martorell P, Munarriz M (***Hospital Del Mar***); Grau-Talens EJ, Martin-Perez B* (***Hospital Don Benito-Villanueva***); Benavides Buleje JA, Carrasco Prats M*, Fernández PV, Fernández-López A*, García Escudero D*, García Porcel VJ, Garcia Soria V*, Giménez Francés C*, González Valverde FM, Gurrea E, López-Morales P, Marco Garrido A, Martínez Alonso JA, Medina E, Muñoz Camarena JM, Parra Baños PA, Peña Ros E, Ramirez Faraco M, Ruiz-Marín M*, Sanchez Rodriguez C, Valero Soriano M (***Hospital General Reina Sofía***); Estaire Gómez M*, Fernández Camuñas Á, Garcia Santos EP, Jimenez Higuera E, Martínez-Pinedo C, Muñoz-Atienza V, Padilla-Valverde D*, Picón Rodríguez R, Redondo

Calvo FJ, Sánchez-García S, Sanchez-Pelaez D (***Hospital General Universitario De Ciudad Real***); Colombari RC, Del valle E, Fernández M, Lozano Lominchar P*, Martín L, Rey Valcarcel C, Steiner MA, Tudela M, Zorrilla Ortúzar J (***Hospital General Universitario Gregorio Marañón***); Alcaide Matas F, García Pérez JM, Troncoso Pereira P* (***Hospital Mateu Orfila***); Mora-Guzmán I* (***Hospital Santa Bárbara***); Abellán M, Achalandabaso Boira M*, Jorba R, Memba Ikuga R, Olona C, Sales Mallafré R (***Hospital Universitari De Tarragona Joan Xxiii***); Cavallé Busquets P, Gavalda Pellice MGP*, Salinas Peña J (***Hospital Universitari Sant Joan***); Aragon Achig EJ*, Barbier L, Caja Vivancos P*, Gainza A, García Gutierrez JJ, Mallabiabarrena Ormaechea G*, Marín H, Martin Playa P*, Melchor Corcóstegui I, Prieto Calvo M, Rodriguez Fraga A, Villalabeitia Ateca I* (***Hospital Universitario Cruces***); De Andres Olabarria U, Durán Ballesteros M, Fernández Pablos FJ, Ibáñez-Aguirre FJ, Sanz Larrainzar A, Ugarte-Sierra B* (***Hospital Universitario De Galdakao***); De la Hoz Rodríguez Á, Di Martino M*, García Septiem J*, Martin-Perez E, Muñoz de Nova JL (***Hospital Universitario De La Princesa***); Calvo Espino P*, Guillamot Ruano P (***Hospital Universitario De Móstoles***); Colao García L, Díaz Pérez D*, Esteban Agustí E, Galindo Jara P, Gutierrez Samaniego M*, Hernandez Bartolome MA*, Serrano González J (***Hospital Universitario De Torrejón De Ardoz***); Alonso Poza A, Diéguez B, García-Conde M, Hernández-García M, Losada M* (***Hospital Universitario Del Sureste***); Chiesa-Estomba CM, González García JÁ, Larruscain E, Sistiaga-Suárez JA* (***Hospital Universitario Donostia***); Alvarez E, Chavarrias N, Frías L, García Pineda V, Gegúndez Simón A, Gortázar S, Gracia M, Guevara J, Hernández Gutierrez A, Loayza A, María Dolores DT, Martí C, Melendez M, Moreno-Palacios E, Perez Y, Prieto Nieto MI, Ramos-Martín P, Rubio-Perez I*, Saavedra J, Sanchez-Mendez JI, Siegrist Ridruejo J, Urbieta A, Zapardiel I* (***Hospital Universitario La Paz***); Cantalejo diaz M, De Miguel Ardevines MDC, Duque-Mallén V*, Gascon Ferrer I, González-Nicolás Trébol MT, Gracia-Roche C, Herrero Lopez M, Jariod Ferrer UM*, Lanzon A, Martinez German A, Matute M, Redondo C, Sánchez Fuentes N, Sánchez-Rubio M, Santero-Ramirez MS, Saudí S, Simón Sanz MV, Uson-Bouthelier T (***Hospital Universitario Miguel Servet***); Blazquez Martin A, Diez Alonso M*, García Rico E, Garcia-Loarte Gomez E, Garcia-Moreno Nisa F, Gutierrez Calvo A, Hernandez P, Lasa I, Mendoza-Moreno F, Morales Palacios N*, Ovejero Merino E, Vera Mansilla C (***Hospital Universitario Principe De Asturias***); Acebes García F, Bailón M, Bueno Cañones AD, Choolani Bhojwani E, Marcos-Santos P, Miguel T, Pacheco Sánchez D, Pérez-Saborido B, Sanchez Gonzalez J, Tejero-Pintor FJ* (***Hospital Universitario Río Hortega***); Alconchel F*, Conesa A, Gil Martínez J*, Gutiérrez Fernández AI, Lopez Abad A, Nicolás-López T*, Ramirez Romero P, Roca Calvo MJ, Rodrigues K*, Ruiz Manzanera JJ, Soriano AI (***Hospital Universitario Virgen De La Arrixaca***); Cano A, Capitan-Morales L, Cintas Catena J, Gomez-Rosado J*, Oliva Mompean F, Pérez Sánchez MA, Río Lafuente

FD, Torres Arcos C, Valdes-Hernandez J (***Hospital Universitario Virgen Macarena***); Cholewa H, Domingo S*, Frasson M, Lago V*, Marina Martin T*, Martínez Chicote C, Sancho-Muriel J* (***Hospital Universitario Y Politécnico La Fe***); Landaluce-olavarria A*, Lecumberri D (***Hospital Urduliz***); Abad Gurumeta A, Abad-Motos A, Martínez-Hurtado E, Ripollés-Melchor J*, Ruiz Escobar A (***Infanta Leonor University Hospital***); Cuadrado-García A*, Garcia-Sancho Tellez L*, Heras Aznar J*, Maté P, Ortega Vázquez I*, Picardo AL, Rojo López JA, Sanchez Cabezudo Noguera F*, Serralta de Colsa D* (***Infanta Sofía University Hospital***); Anchuelo Latorre J, Cagigas Fernandez C, Caiña Ruiz R, Gomez Ruiz M, Hernanz F, Jimeno Fraile J*, Martínez-Pérez P, Poch C, Santarrufina Martinez S*, Valbuena Jabares V (***Marqués De Valdecilla University Hospital***); Moliner-Sánchez C, Pingarron-Martin L, Rey-Biel J, Ruiz Martin I (***Rey Juan Carlos University Hospital***); Blas Laina JL, Cros B, Escartin J*, Garcia Egea J, Nogués A, Talal El-Abur I, Yánez C (***Royo Villanova***); Cagigal Ortega EP, Cervera I, Díaz Peña P, Elena GDCR, Enjuto D*, Fernández Bernabé P, Garcés García R, Gonzalez J, Hernández I, Herrera-Merino N, Marqueta De Salas M, Martinez Pascual P, Perez Gonzalez M*, Ramos Bonilla A, Rodríguez Gómez L (***Severo Ochoa University Hospital***); Bescós C*, Blanco-Colino R, Brana I, Caimari B, De Pablo García-Cuenca A, Duran-Valles F, Espin-Basany E*, Giralt López de Sagredo J, Pamias J, Pellino G, Prat N, Pujol Pina R, Saez barba M (***Vall D'hebron University Hospital***).

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Ergün S*, OZcelık MF, Sanli AN, Uludağ SS*, Velidedeoglu M*, Zengin AK (***Istanbul Universty - Cerrahpaşa Medical Faculty***); Bozkurt MA, Kara Y*, Kocataş A (***Kanuni Sultan Suleyman Training And Research Hospital***); Cimenoglu B, Demirhan R, Saracoglu K* (***Kartal Dr. Lutfi Kirdar Training And Research Hospital***); Azamat İF, Balik E*, Buğra D, Giray B, Kulle CB, Taskiran C*, Vatansever D (***Koç University Medical School***); Gözal K, Güler SA, Köken H, Tatar OC*, Utkan NZ, Yıldırım A, Yüksel E (***Kocaeli University Teaching Hospital***); Akin E, Altintoprak F*, Bayhan Z, Cakmak G, Çapoğlu R, Çelebi F, Demir H, Dikicier E, Firat N, Gönüllü E, Kamburoğlu MB, Kocer B, Küçük IF, Mantoglu B (***Sakarya University Faculty Of Medicine***); Çolak E*, Kucuk GO, Uyanik MS (***Samsun Training And Research Hospital***); Göksoy B* (***Sehit Prof.dr. İlhan Varank Training And Research Hospital***); Bozkurt E, Citgez B, Mihmanli M, Tanal M*, Yetkin G (***Sisli Hamidiye Etfal Training And Research Hospital***); Akalin M, Arican C, Avci EK, Aydin C, Demirli Atıcı S*, Emiroglu M, Kaya T*, Kebabçı E, Kilinc G, Kirmizi Y, Öğücü H, Salimoğlu S, Sert İ, Tugmen C, Tuncer K, Uslu G, Yeşilyurt D (***University Of Health Sciences Tepecik Training And Research Hospital***); Karaman E*, Kolusarı A (***Van Yuzuncu Yil University, Medical Faculty***); Yildiz A* (***Yildirim Beyazit University Yenimahalle Training And Research Hospital***).

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Neal N* **(*Churchill Hospital*);** Clifford R, Eardley N, Krishnan E, Manu N, Martin E, Roy Mahapatra S, Serevina OL, Smith C, Vimalachandran D* (***Countess Of Chester Hospital***); Bordenave M*, Houston R, Putnam G, Robson A*, Tustin H (***Cumberland Infirmary***); Emslie K*, Labib PL*, Marchbank A, Miller D, Minto G, Natale J, Nwinee H, Panahi P, Rogers L* (***Derriford Hospital***); Abubakar A*, Akhter Rahman MM, Chan E, Ko KYK, O'Brien H, Sasapu K*, Woodun H (***Diana Princess Of Wales Hospital Grimsby***); Inglis R, Ng HJ* (***Dumfries And Galloway Royal Infirmary***); De Gea Rico A, Ghazali N*, Lambert J, Markose G, Math S, Sarantitis I, Shrestha D, Sultana A*, Taggarsi M, Timbrell S, Vaz OP, Vitone L* (***East Lancashire Hospitals Nhs Trust***); Day A*, Dent H, Fahim M, Waheed S* (***East Surrey Hospital***); Hunt A, Laskar N* (***East Sussex Healthcare (Conquest Hospital And Eastbourne District General Hospital)***); Gupta A*, Steinke J, Thrumurthy S (***Epsom & St Helier University Hospitals Nhs Trust***); Massie E, McGivern K, Rutherford D, Wilson M* (***Forth Valley Royal Hospital***); Hardie J, Kazzaz S* (***Frimley Health Nhs Ft - Frimley Park***); Handa S, Kaushal M, Kler A, Patel P*, Redfern J, Tezas S (***Furness General Hospital***); Aawsaj Y, Amonkar S, Barry C, Blackwell L, Blake D, Carter J, Emerson H, Fisher A*, Katory M, Korompelis P, McCormick W, Mustafa A, Pearce L, Ratnavelu N*, Reehal R (***Gateshead Health Nhs Foundation Trust***); Kretzmer L*, Lalou L, Manku B, Parwaiz I, Stafford J (***George Eliot Hospital***); Abdelkarim M, Asqalan A, Gala T, Ibrahim S, Maw A*, Mithany R, Morgan R*, Sundaram Venkatesan G (***Glan Clwyd Hospital***); Ang K, Caruana EJ*, Chowdhry MF, Mohammad A, Nakas A, Rathinam S (***Glenfield Hospital***); Boal M*, Brown O, Dwerryhouse S*, Higgs S, Vallance A (***Gloucestershire Royal Hospital***); Boyd E, Irvine V, Kirk A* (***Golden Jubilee National Hospital***); Bakolas G, Boulton A, Chandock A*, Khan T, Kumar M* (***Good Hope Hospital***); Agoston P, Billè A, Challacombe B*, Fraser S, Harrison-Phipps K, King J, Mehra G, Mills L, Najdy M, Nath R, Okiror L, Pilling J, Rizzo V, Routledge T, Sayasneh A*, Stroman L*, Wali A (***Guy's Hospital***); Fehervari M*, Fotopoulou C*, Habib N, Hamrang-Yousefi S, Jawad Z, Jiao L, Pai M, Ploski J, Rajagopal P, Saso S, Sodergren M, Spalding D (***Hammersmith Hospital***); Laws S* (***Hampshire Hospitals Nhs Trust***); Hardie C, McNaught C* (***Harrogate District Hospital***); Alam R, Budacan A, Cahill J, Kalkat M*, Karandikar S*, Kenyon L, Naumann D, Patel A (***Heartlands Hospital***); Ayorinde J, Chase T, Cuming T, Ghanbari A, Humphreys L, Tayeh S* (***Homerton University Hospital***); Aboelkassem Ibrahim A, Bichoo R, Cao H, Chai AKW, Choudhury J, Evans C, Fitzjohn H, Ikram H, Langstroth M, Loubani M*, McMillan A, Nazir S, Qadri SSA, Robinson A, Ross E, Sehgal T, Wilkins A (***Hull University Teaching Hospitals Nhs Trust***); Dixon J*, Dunning J, Freystaetter K, Jha M, Lester S*, Madhavan A, Thulasiraman SV, Viswanath Y* (***James Cook University Hospital***); Curl-Roper T, Delimpalta C, Liao CCL*, Velchuru V, Westwood E (***James Paget Univeristy Nhs Foundation Trust Hospital***); Belcher E*, Bond-Smith G*, Chidambaram S, Di Chiara F,

Fasanmade K, Fraser L, Fu H, Ganau M*, Gore S, Graystone J, Jeyaretna D, Khatkar H, Lami M, Maher M, Mastoridis S, Mihai R, Piper R*, Prabhu S, Risk OBF, Selbong U, Shah K, Smillie R, Soleymani majd H, Sravanam S, Stavroulias D, Tebala GD, Vatish M*, Verberne C, Wallwork K, Winter S* (***John Radcliffe Hospital***); Bhatti MI, Boyd-Carson H, Elsey E, Gemmill E, Herrod P*, Jibreel M, Lenzi E, Saafan T, Sapre D, Sian T, Watson N (***King's Mill Hospital***); Athanasiou A*, Bourke G, Bradshaw L, Brunelli A*, Burke J, Coe P*, Costigan F, Elkadi H, Ho M*, Johnstone J, Kanatas A, Kantola V, Kaufmann A, Laios A, Lam S, MacInnes E*, Munot S, Nahm C, Otify M, Pompili C, Smith I, Theophilou G*, Toogood G, Wade R*, Ward D, West C (***Leeds Teaching Hospitals Trust***); Annamalai S, Ashmore C, Boddy A, Hossain T*, Kourdouli A (***Leicester Royal Infirmary***); Gvaramadze A, Jibril A, Prusty L, Thekkinkattil D* (***Lincoln County Hospital***); Harky A, Shackcloth M* (***Liverpool Heart And Chest Hospital***); Askari A, Chan C*, Cirocchi N, Kudchadkar S, Patel K, Sagar J*, Shaw S, Talwar R* (***Luton And Dunstable University Hospital***); Abdalla M, Edmondson R, Ismail O, Jones D, Newton K, Stylianides N* (***Manchester Royal Infirmary***); Aderombi A, Andaleeb U, Bajomo O, Beatson K, Garrett W*, Mehmood M, Ng V (***Medway Hospital***); Al-Habsi R, Divya GS, Keeler B* (***Milton Keynes University Hospital***); Al-Sarireh B*, Egan R, Harries R*, Henry A, Kittur M*, Li Z, Parkins K, Soliman F, Spencer N, Thompson D (***Morriston Hospital Swansea***); Burgess C*, Gemmell C, Grieco C, Hollyman M*, Hunt L*, Morrison J*, Ojha S, Ryan N (***Musgrove Park Hospital***); Abbadessa F, Barnard S, Chan C, Dawe N, Hammond J, Mahmoud Ali F, McPherson I, Mellor C, Moir J, Pandanaboyana S*, Powell J, Rai B*, Rogers A*, Roy C, Sachdeva A, Saleh C, Tingle S, Williams T (***Newcastle Upon Tyne Hospitals Nhs Foundation Trust.***); Manickavasagam J*, McDonald C*, McGrath N, McSorley N, Ragupathy K*, Ramsay L, Solth A (***Ninewells Hospital***); Kakisi O, Seebah K, Shaikh I*, Sreedharan L, Youssef M* (***Norfolk And Norwich University Hospital***); Shah J* (***North Manchester General Hospital***); Ameerally P (***Northampton General Hospital***); McLarty N, Mills S*, Shenfine A (***Northumbria Nhs Hospital Trust***); Sahnan K (***Northwick Park Hospital***); Abu J, Addae-Boateng E, Bratt D, Brock L, Burnside N*, Cadwell-Sneath S, Gajjar K*, Gan C, Grundy C, Hallam K, Hassell K, Hawari M, Joshi A, Khout H, Konstantinidi K, Lee RXN, Nunns D, Schiemer R, Walton T*, Weaver H, Whisker L*, Williamson K (***Nottingham City Hospital***); McVeigh J, Myatt R*, Williams MA (***Nuffield Orthopaedic Centre***); Kaur R, Leung E*, Sundar S* (***Pan-Birmingham Gynaecological Cancer Centre***); Michel M, Patil S, Ravindran S, Sarveswaran J*, Scott L (***Pinderfields Hospital***); Edmond M, King E* (***Poole Hospital***); Almond M*, Bhangu A*, Breik O, Cato LD, Desai A*, Ford S*, Griffiths E*, Idle M, Kamal M, Kisiel A, Kulkarni R, Mak JKC, Martin T, Nankivell P*, Parente A, Parmar S, Pathanki AM, Phelan L, Praveen P, Saeed S, Sharma N, Singh J*, Tirotta F, Vijayan D (***Queen Elizabeth Hospital Birmingham***); Geddes A, McCaul J*, McMahon J (***Queen Elizabeth University***

Hospital); Khan AH, Khan F, Mansuri A, Mukherjee S*, Patel M, Sarigul M, Singh S, Tan KL, Woodham A (***Queen's Hospital Romford***); Adiamah A, Brewer H, Chowdhury A*, Evans J, Humes D*, Jackman J, Koh A, Lewis-Lloyd C, Oyende O, Reilly J, Worku D (***Queens Medical Centre***); Cool P, Cribb G, Shepherd K* (***Robert Jones And Agnes Hunt Orthopaedic Hospital***); Bisset C, Moug S* (***Royal Alexandra Hospital***); Elson N, Faulkner G*, Saleh P, Underwood C (***Royal Bolton Hospital***); Brixton G, Findlay L, Klatte T*, Majkowska A, Manson J*, Potter R (***Royal Bournemouth Hospital***); Bhalla A*, Chia Z, Daliya P, Goyal A*, Grimley E, Hamad A, Kumar A*, Malcolm FL, Theophilidou E (***Royal Derby Hospital***); Bowden J, Campain N, Daniels I, Evans C, Fowler G, John J, Massey L, McDermott F*, McGrath J*, McLennan A, Ng M, Pascoe J, Rajaretnam N (***Royal Devon And Exeter Hospital***); Bulathsinhala S, Davidson B, Fusai G, Hidalgo Salinas C, Machairas N, Pissanou T, Pollok JM*, Raptis DA, Soggiu F, Tzerbinis H, Xyda SE (***Royal Free Hospital***); Beamish A, Davies E, Foulkes R*, Magowan D, Nassa H, Ooi R, Price C, Smith L, Solari F, Tang A, Williams G* (***Royal Gwent Hospital***); Al-Tamimi Y, Bacon A, Beasley N, Chew D, Crank M, Ilenkovan N, Macdonald M, Narice B, Rominiyi O, Thompson A, Varley I* (***Royal Hallamshire Hospital***); Drake T*, Harrison E*, Linder G, Mayes J, McGregor R, Skipworth R*, Zamvar V* (***Royal Infirmary Of Edinburgh***); Davies E*, Hawkin P, Raymond T, Ryska O (***Royal Lancaster Infirmary***); Baron R*, Dunne D, Gahunia S, Halloran C, Howes N*, McKinney R, McNicol F*, Russ J, Szatmary P, Tan JR, Thomas A, Whelan P (***Royal Liverpool University Hospital***); Anzak A, Banerjee A, Fuwa O, Hughes F*, Jayasinghe JD, Knowles C, Kocher H*, Leal Silva I, Ledesma FS, Minicozzi A*, Navaratne L, Rahman R, Ramamoorthy R, Sohrabi C, Thaha M*, Thakur B*, Venn M, Yip V* (***Royal London Hospital***); Baumber R, Parry J* (***Royal National Orthopaedic Hospital***); Evans S, Jeys L, Morris G, Parry M*, Stevenson J (***Royal Orthopaedic Hospital***); Ahmadi N, Aresu G, Barrett-Brown ZM, Coonar AS*, Durio Yates H, Gearon D, Hogan J, King M, Peryt A, Pradeep IS, Smith C (***Royal Papworth Hospital***); Adishesh M*, Atherton R*, Baxter K, Brocklehurst M, Chaudhury M, Krishnamohan N*, McAleer J, Owens G, Parkin E*, Patkar P, Phang I* (***Royal Preston Hospital***); Aladeojebi A, Ali M, Barmayehvar B, Gaunt A*, Gowda M, Halliday E, Kitchen M*, Mansour F, Thomas M*, Zakai D* (***Royal Stoke University Hospital***); Abbassi-Ghadi N, Assalaarachchi H, Currie A, Flavin M, Frampton A*, Hague M, Hammer C, Hopper J, Horsnell J*, Humphries S, Kamocka A, Madhuri TK*, Preston S, Singh P*, Stebbing J, Tailor A, Walker D* (***Royal Surrey County Hospital***); Aljanadi F, Jones M*, Mhandu P, O'Donnell C, Turkington R* (***Royal Victoria Hospital, Belfast***); Al-Ishaq Z, Bhasin S, Bodla AS, Burahee A, Crichton A, Fossett R, Pigadas N*, Rahman E, Snee D, Vidya R, Yassin N* (***Royal Wolverhampton Nhs Trust***); Colombo F, Fountain D, Hasan MT, Karabatsou K*, Laurente R, Pathmanaban O* (***Salford Royal Hospital***); Al-mukhtar A, Brown S*, Edwards J*, Giblin A, Kelty C, Lee M, Lye G, Newman

T, Sharkey A, Steele C, Sureshkumar Shah N, Whitehall E (***Sheffield Teaching Hospital Nhs Foundation Trust***); Athwal R*, Baker A, Jones L, Konstantinou C, Ramcharan S*, Singh S, Vatish J, Wilkin R (***South Warwickshire Nhs Foundation Trust***); Ethunandan M, Sekhon GK, Shields H, Singh R*, Wensley F (***Southampton General Hospital***); Lawday S, Lyons A* (***Southmead Hospital***); Abbott T, Anwar S, Ghufoor K*, Sohrabi C (***St Bartholomew's Hospital (Non-Cardiac Unit)***); Chung E, Hagger R, Hainsworth A, Karim A, Owen H, Ramwell A, Williams K* (***St George's Hospital***); Baker C, Davies A, Gossage J, Kelly M*, Knight W (***St Thomas' Hospital***); Hall J (***Stepping Hill Hospital***); Harris G, James G, Kang C, Lin DJ, Rajgor AD, Royle T*, Scurrah R, Steel B, Watson LJ (***Sunderland Royal Hospital***); Choi D, Hutchison R, Jain A, Luoma V, Marcus H*, May R, Menon A, Pramodana B, Webber L (***The National Hospital For Neurology And Neurosurgery***); Aneke IA, Asaad P, Brown B, Collis J, Duff S*, Khan A, Moura F, Wadham B, Warburton H (***The University Hospital Of South Manchester***); Elmoslemany T, Jenkinson M*, Millward C, Zakaria R (***The Walton Centre Nhs Foundation Trust***); Mccluney S, Parmar C*, Shah S (***The Whittington Hospital***); Allison J, Babar MS, Collard B, Goodrum S, Lau K, Patel A, Scott R*, Thomas E, Whitmore H (***Torbay And South Devon Nhs Trust***); Balasubramaniam D*, Jayasankar B*, Kapoor S, Ramachandran A (***Tunbridge Wells Hospital***); Elhamshary A, Imam SMB, Kapriniotis K, Kasivisvanathan V*, Lindsay J, Rakhshani-Moghadam S (***University College London Hospital At Westmoreland Street***); Beech N, Chand M*, Green L, Kalavrezos N*, Kiconco H, McEwen R, Schilling C, Sinha D (***University College London Hospital***); Pereca J*, Singh J (***University Hospital Ayr***); Chopra S, Egbeare D*, Thomas R (***University Hospital Llandough***); Combellack T*, Jones SEF*, Kornaszewska M, Mohammed M, Sharma A, Tahhan G, Valtzoglou V, Williams J (***University Hospital Of Wales***); Eskander P, Gash K*, Gourbault L, Hanna M, Maccabe T, Newton C*, Olivier J, Rozwadowski S, Teh E, West D* (***University Hospitals Bristol NHS Foundation Trust***); Al-omishy H, Baig M, Bates H, Di Taranto G, Dickson K, Dunne N, Gill C, Howe D*, Jeevan D*, Khajuria A, Martin-Ucar A*, McEvoy K, Naredla P, Ng V, Robertson S*, Sait M, Sarma DR, Shanbhag S*, Shortland T, Simmonds S, Skillman J, Tewari N*, Walton G (***University Hospitals Coventry And Warwickshire Nhs Trusts***); Akhtar MA*, Brunt A, McIntyre J, Milne K, Rashid MM, Sgrò A, Stewart KE, Turnbull A (***Victoria Hospital Kirkcaldy***); Aguilar Gonzalez M*, Talukder S* (***West Suffolk Hospital***); Boyle C, Fernando D, Gallagher K, Laird A*, Tham D (***Western General Hospital***); Bath M, Patki P*, Sohrabi C, Tanabalan C (***Whipps Cross University Hospital***); Arif T, Magee C*, Nambirajan T*, Powell S*, Vinayagam R* (***Wirral University Teaching Hospital***); Flindall I, Hanson A, Mahendran V (***Worcestershire Royal Hospital***); Green S, Lim M, MacDonald L, Miu V, Onos L, Sheridan K, Young R* (***York Teaching Hospitals Nhs Trust***); Alam F, Griffiths O, Houlden C, Jones R*, Kolli VS, Lala AK, Leeson S, Peevor R, Seymour Z* (***Ysbyty Gwynedd***).

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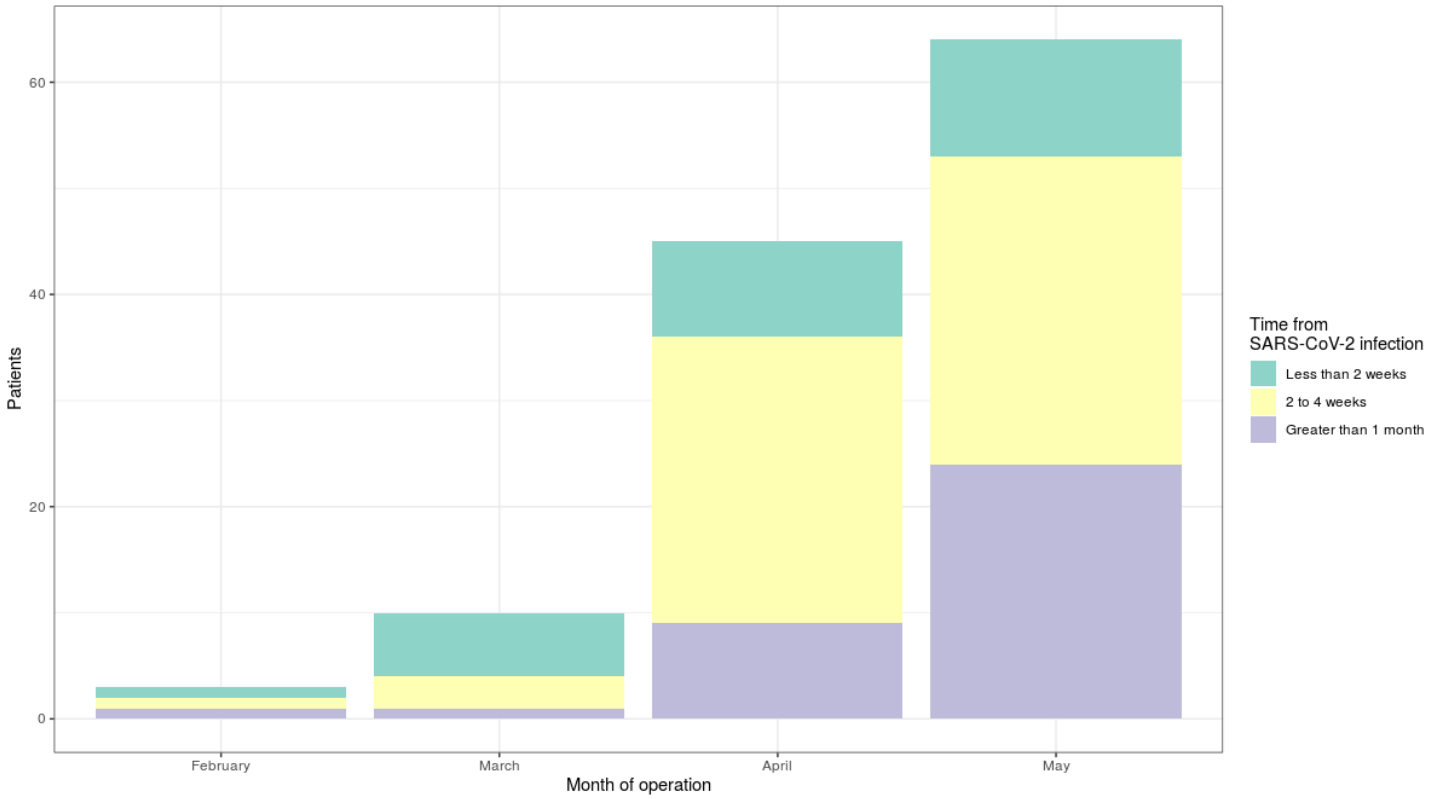
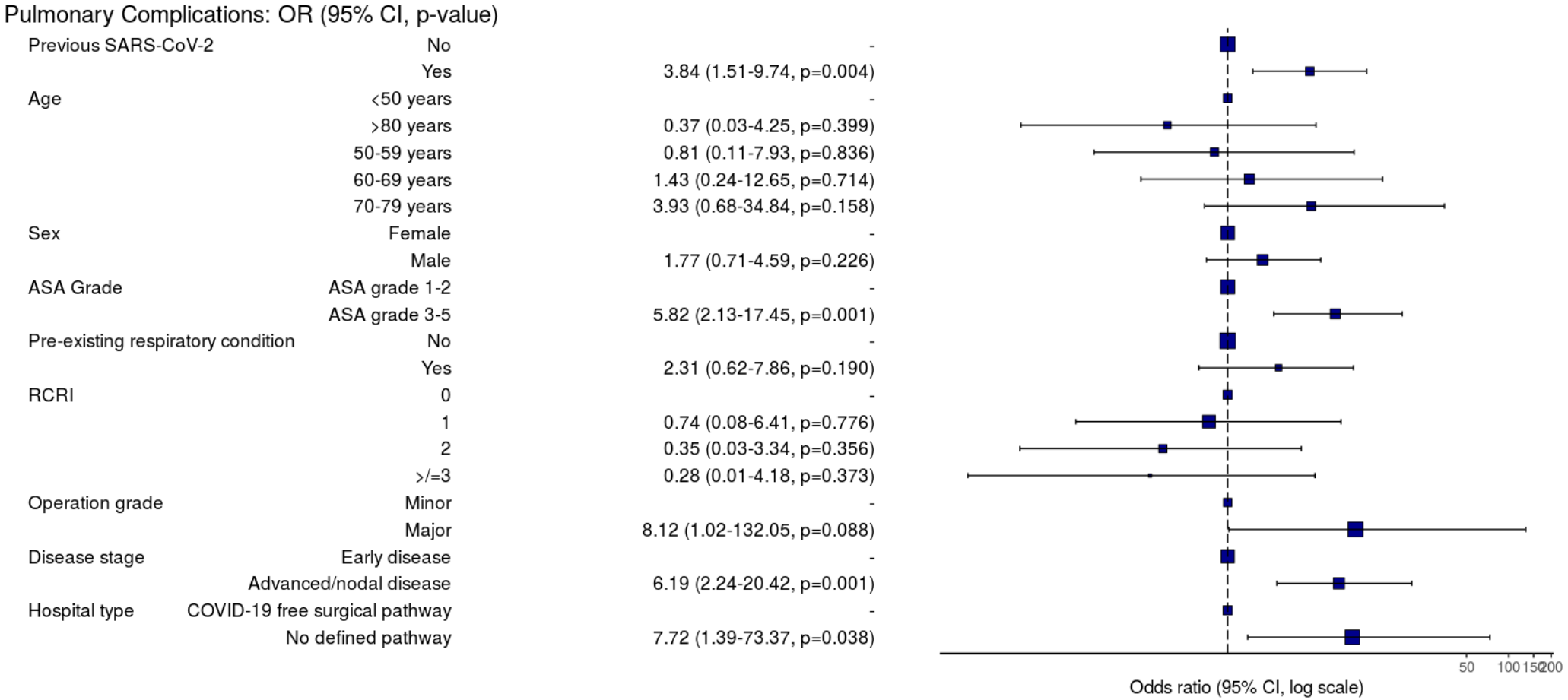
Supplementary Figure 1. Accrual of patients operated after previous SARS-CoV-2 infection between February and May 2020



Timing from previous SARS-CoV-2 positive swab was defined as the weeks from notification of a positive nasopharyngeal swab (qRT-PcR) result. For the purpose of analysis, this was divided into three groups: less than 2 weeks; 2 to 4 weeks; greater than 1 month. Within this study, we did not collect whether a confirmatory repeat ‘negative’ SARS-CoV-2 swab test had been performed preoperatively.

Supplementary Figure 2. Propensity score matched model for factors associated with postoperative pulmonary complications.



Data included from 112 patients with previous SARS-CoV-2 infection propensity score matched with 448 patients with no preoperative or perioperative SARS-CoV-2 infection. ASA=American Society of Anaesthesiologists. RCRI= Revised Cardiac Risk Index. Please See *Appendix* for full definitions. Area under the Receiver Operating Characteristic curve for model: 0.88 (excellent discrimination).

Supplementary Table 1. Characteristics of patients with a previous positive SARS-CoV-2 test.

Factor	Levels	Less than 2 weeks N=27	2 to 4 weeks	Greater than 4 weeks	P-Value
Age	<50 years	6 (22.2)	9 (15.0)	8 (22.9)	0.561
	50-59 years	4 (14.8)	13 (21.7)	9 (25.7)	
	60-69 years	5 (18.5)	19 (31.7)	8 (22.9)	
	70-79 years	8 (29.6)	15 (25.0)	5 (14.3)	
	>80 years	4 (14.8)	4 (6.7)	5 (14.3)	
Sex	Female	20 (74.1)	38 (63.3)	19 (54.3)	0.277
	Male	7 (25.9)	22 (36.7)	16 (45.7)	
ASA Grade	Grade 1-2	15 (57.7)	44 (73.3)	26 (74.3)	0.285
	Grade 3-5	11 (42.3)	16 (26.7)	9 (25.7)	
Pre-existing respiratory condition	No	21 (77.8)	50 (83.3)	31 (88.6)	0.522
	Yes	6 (22.2)	10 (16.7)	4 (11.4)	
Revised cardiac risk index	0	4 (14.8)	17 (28.8)	8 (22.9)	***0.015***
	1	15 (55.6)	29 (49.2)	24 (68.6)	
	2	5 (18.5)	13 (22.0)	3 (8.6)	
	>/=3	3 (11.1)	0 (0.0)	0 (0.0)	
Operation grade	Minor	1 (3.8)	16 (27.6)	4 (11.4)	***0.016***
	Major	25 (96.2)	42 (72.4)	31 (88.6)	
Cancer stage	Early disease	18 (66.7)	34 (57.6)	22 (64.7)	0.662
	Advanced/nodal disease	9 (33.3)	25 (42.4)	12 (35.3)	
Hospital type	COVID-19 free surgical pathway	7 (25.9)	14 (23.3)	10 (28.6)	0.85
	No defined pathway	20 (74.1)	46 (76.7)	25 (71.4)	

COVID-19=Coronavirus disease 2019. ASA=American Society of Anaesthesiologists. See *Appendix* for full definitions. Percentages calculated as a proportion of column total. Differences between groups tested with Chi^2 test for grouped data, with Fisher's exact modification where required.

Supplementary Table 2. Characteristics of propensity score matched groups

Factor	Levels	Previous SARS-CoV-2 diagnosis	No previous or perioperative SARS-CoV-2 diagnosis	P-Value
Age	<50 years	22 (19.6)	86 (19.2)	0.87
	>80 years	13 (11.6)	60 (13.4)	
	50-59 years	21 (18.8)	80 (17.9)	
	60-69 years	30 (26.8)	135 (30.1)	
	70-79 years	26 (23.2)	87 (19.4)	
Sex	Female	72 (64.3)	286 (63.8)	1
	Male	40 (35.7)	162 (36.2)	
ASA Grade	Grade 1-2	77 (68.8)	317 (70.8)	0.764
	Grade 3-5	35 (31.2)	131 (29.2)	
Pre-existing respiratory condition	No	97 (86.6)	411 (91.7)	0.136
	Yes	15 (13.4)	37 (8.3)	
Revised cardiac risk index	0	27 (24.1)	101 (22.5)	0.888
	1	61 (54.5)	258 (57.6)	
	2	21 (18.8)	74 (16.5)	
	>/=3	3 (2.7)	15 (3.3)	
Operation grade	Minor	21 (18.8)	81 (18.1)	0.978
	Major	91 (81.2)	367 (81.9)	
Cancer stage	Early disease	68 (60.7)	270 (60.3)	1
	Advanced/nodal disease	44 (39.3)	178 (39.7)	
Cancer type	Breast	16 (14.3)	63 (14.1)	0.996
	Colorectal	37 (33.0)	162 (36.2)	
	Gynaecological	13 (11.6)	43 (9.6)	
	Head or neck	13 (11.6)	47 (10.5)	
	Hepatopancreatobilary	8 (7.1)	40 (8.9)	
	Intracranial	3 (2.7)	12 (2.7)	
	Lung	5 (4.5)	16 (3.6)	
	Oesophagogastric	8 (7.1)	36 (8.0)	
	Sarcoma	4 (3.6)	12 (2.7)	
	Urological	5 (4.5)	17 (3.8)	
Hospital type	COVID-19 free surgical pathway	30 (26.8)	100 (22.3)	0.381
	No defined pathway	82 (73.2)	348 (77.7)	

112 patients with previous SARS-CoV-2 positive swab were matched to 448 with no previous and no perioperative SARS-CoV-2 infection (10 were missing at least one matching variable). COVID-19=Coronavirus disease 2019. ASA=American Society of Anaesthesiologists. See *Appendix* for full definitions. Percentages calculated as a proportion of column total. Differences between groups tested with Chi^2 test for grouped data, with Fisher's exact modification where required.

Appendix

Timing of SARS-CoV-2 testing

Previous SARS-CoV-2 infection was defined as a diagnosis of SARS-CoV-2 made with a nasopharyngeal swab (qRT-PcR) greater than 7 days before the date of surgery.

Timing from previous SARS-CoV-2 positive swab was defined as the weeks from notification of a positive nasopharyngeal swab (qRT-PcR) result. For the purpose of analysis, this was divided into three groups: less than 2 weeks; 3 to 4 weeks; greater than one month. Within this study, we did not collect whether a repeat confirmatory 'negative' SARS-CoV-2 swab test had been performed preoperatively.

Perioperative SARS-CoV-2 infection was defined as diagnosis of SARS-CoV-2 within the 7 days before surgery up to the 30th day after surgery, with the day of surgery as Day 0.

Data variables

American Society of Anesthesiologists physical status classification (ASA) is a validated system used to assess and communicate a patient's pre-anaest`hesia medical comorbidities. The classification system alone does not predict the perioperative risks but can be used with other factors (grade of surgery, ECOG performance status) to stratify risks of postoperative complications. The following grades were defined in the study protocol: Grade 1: Healthy person; Grade 2: Mild systemic disease; Grade 3: Severe systemic disease; Grade 4: Severe systemic disease that is a constant threat to life; Grade 5: A moribund person who is not expected to survive without the operation.

Pre-existing respiratory condition was defined pragmatically as a past medical history of asthma, chronic obstructive pulmonary disease, and/or any other obstructive or restrictive pulmonary disease diagnosed by a physician.

Revised Cardiac Risk Index (RCRI) represents a multifactorial approach to assessing the cardiac risk of non-cardiac surgery. It was calculated as a composite of procedural risk (intraperitoneal/intrathoracic versus other), history of ischemic heart disease, myocardial infarction, congestive heart failure, cerebrovascular disease, diabetes mellitus, and/or chronic kidney disease. This gave an attributable risk score from 0 (lowest risk) to 6 (highest risk).

Grade of surgery was categorised based on the Clinical Coding & Schedule Development Group as either Minor (minor/intermediate) or Major (major/complex major).

To account for different tumour grading and staging systems across solid cancer types, disease status was classified as early stage (organ confined, non-nodal, non-metastatic, fully resectable) or advanced stage (growth beyond organ, nodal, metastatic with curative intent, debulking with life prolonging intent).

For each patient, the hospital status at the time of their operation was classified either providing a COVID-19 free surgical pathway or no defined pathway. This provided a dynamic assessment that could change if hospitals chose to establish a dedicated COVID-19 free pathway. COVID-19 free surgical pathways were defined as complete segregation of operating room, critical care, and inpatient ward areas for elective cancer surgery, away from patients being treated for COVID-19. This included both hospital sites which were opened during the pandemic specifically to provide COVID-19 free surgical care (e.g. independent providers, or satellite hospitals) and major, acute hospital sites which treated COVID-19 patients during the study period but in completely separate areas of the hospital with no mixed areas or staff working between areas. Hospitals where there was mixing of patients undergoing treatment for COVID-19 and elective surgical patients in any operating theatre, critical care, or inpatient ward areas were classified into the 'no defined pathway group'. Where hospitals had no defined pathway, but coincidentally were treating no COVID-19 patients in their surgical pathway at the time of surgery, they were still classified as having 'no defined pathway'.

Outcome measures

The primary outcome measure was postoperative pulmonary complications defined as pneumonia, acute respiratory distress syndrome or unexpected ventilation within 30-days of surgery with the day of surgery as Day 0. The secondary outcome measure was mortality within 30-days of surgery.

Postoperative pneumonia was defined as recommended by international consensus on outcome measures for perioperative care, the US Centers for Disease Control (CDC) definition of pneumonia was used within 30 days after surgery, modified to accommodate limited availability of radiological facilities:

- Fever (>38°C) with no other recognised cause
- Leucopaenia (white cell count <4x109 L-1) or leucocytosis (white cell count >12x109 L-1)
- For adults >70 years old, altered mental status with no other recognised cause;

AND at least two of the following:

- New onset of purulent sputum or change in character of sputum, or increased respiratory secretions, or increased suctioning requirements
- New onset or worsening cough, or dyspnoea, or tachypnoea
- Rales, crackles or bronchial breath sounds
- Worsening gas exchange (hypoxaemia, increased oxygen requirement).

Wherever possible, the diagnosis was confirmed with a chest radiograph. The following findings were considered to confirm pneumonia:

- New or progressive and persistent infiltrates
- Consolidation
- Cavitation

Unexpected post-operative ventilation was defined as either an episode of non-invasive ventilation, invasive ventilation, or extracorporeal membrane oxygenation after initial extubation following surgery, or unexpected failure to extubate following surgery.

Statistical analysis

The study was reported according to SAMPL (Statistical Analyses and Methods in the Published Literature) guidelines. Non-parametric data were summarised with medians and interquartile ranges and differences between groups were tested using the Mann-Whitney U test. The $\chi 2$ test was used for categorical data. Missing data were included in flowcharts and summary tables, allowing denominators to remain consistent in calculations.

Propensity score matching (PSM) was conduct to explore differences in outcomes between patients with previous SARS-CoV-2 infection and patients with no previous and no perioperative SARS-CoV-2 infection. This involved building a binary logistic regression model to derive predictors of 30-day postoperative pulmonary complications using a 3-step approach. Firstly, propensity scores were developed by including age, sex, ASA grade, operation grade, preoperative testing for SARS-CoV-2, ECOG performance score and community SARS-CoV-2 risk in a binary logistic regression model. Secondly, this logistic regression model was then combined with the PSMATCH2 command in Stata (Version 16.0; Statacorp, College Station, TX) to calculate propensity scores representing the estimated probability of 30-day postoperative pulmonary complications on each participant's characteristics. Participants in previous SARS-CoV-2 infection were matched to participants with no previous and no perioperative SARS-CoV-2 infection with the closest propensity score on a ratio of 1:4 using a nearest-neighbour algorithm with no replacement, and matching was restricted to within the common support region. Thirdly, to ensure that the matching was

effective, we checked the balance of covariates between groups after the matching process (*Supplementary Table 2*).

Multivariable logistic regression was then used to explore the association between previous SARS-CoV-2 infection and postoperative pulmonary complications, summarised using adjusted odds ratios and 95% confidence intervals. Clinically plausible patient, disease, operation and location specific factors were selected a priori for inclusion in adjusted analyses, in order to identify independent predictors of postoperative pulmonary complications. Models only included factors that occurred before the outcome of interest. Analyses were carried out using the R Foundation Statistical Program version 3.1.1 (packages: finalfit, tidyverse).