BMJ Open Sport & Exercise Medicine

The journey so far: professional sport during the COVID-19 pandemic

Andrew Murray,[1,2] Babette Pluim,[3,4] Patrick Gordon Robinson ,[2,5] Margo Lynn Mountjoy ,[6,7] Éanna C Falvey ,[8] Richard Budgett,[9] Andrew Massey,[10] Caryn Cox[11,12]

To cite: Murray A, Pluim B, Robinson PG, *et al*. The journey so far: professional sport during the COVID-19 pandemic. *BMJ Open Sport & Exercise Medicine* 2022;**8**:e001362. doi:10.1136/bmjsem-2022-001362

Accepted 12 April 2022

For numbered affiliations see end of article.

Correspondence to
Dr Andrew Murray;
docandrewmurray@gmail.com

BACKGROUND

The COVID-19 pandemic has profoundly impacted community and professional sports. Throughout this time, sports organisations collaborated closely with the WHO, host national governments and their public health authorities. The common goals were to assess risk and to implement risk reduction measures to facilitate a stepwise return to sport, thus realising the physical and mental health benefits of sport for the participants, as well as the safe resumption of competitive events despite active SARS-CoV-2 transmission in many countries.

RETURNING THE HEALTH BENEFITS OF COMMUNITY SPORT

At a community level, the WHO and many governments implemented policies to support opportunities for individuals to participate in health-enhancing physical activity for the longevity, mental health and physical health benefits conferred.[1–3] Outdoor sport/physical activity carries a lower risk of transmission of SARS-CoV-2 due to physical distancing and ventilation.[4] These sports were generally reintroduced before indoor or contact sports.[5] Unfortunately, some regions were slow to recognise the low risks of outdoor, physically distanced sports activities and continued to restrict these despite their relative safety.

PROFESSIONAL SPORT: RISK ASSESSMENT AND RISK REDUCTION

Professional sport provides cultural, economic and employment benefits. During the pandemic, sports organisations assessed the health risk associated with an event based on event size, sport risk, community transmission/prevalence and geographical location, and implemented risk reduction and mitigation measures in keeping with WHO and best practice guidance.[4–7] Typically, this was done in a stepwise fashion,[8] with timeframes and restrictions varying markedly across nations and sports systems.

A RETURN TO TRAINING AND COMPETITION

Individual and group outdoor training present a low risk of viral transmission. Sports competition resumed in 2020, in most cases 'behind closed doors' or in 'bubble environments' with robust risk assessment and risk reduction and with no, or very limited, spectators on-site. Domestic events did not increase transmission,[9 10] while very low case rates and transmission were seen in international sports, including the delayed 2020 Tokyo Summer Olympic and 2022 Beijing Winter Olympic Games, where all participants underwent regular testing.[11]

GUIDANCE FOR ATHLETES

Athletes returning to training and competition post lockdown were often grateful for the opportunity to resume sport. However, many informed us they were nervous about becoming infected by the virus (either personally or their family), while others expressed concern about the 'bubble' environment they had to endure, in many cases entailing significant isolation from their families.[12] Collaborative return to sport guidelines were produced to advise athletes, coaches and sports organisations on adapting and applying public health principles to the sport-specific context.[13]

GREATER ATTENDANCE AT SPORTS EVENTS

Countries (eg, New Zealand and Australia) that had eliminated the virus or had lower community transmission of cases could sometimes introduce full or >50% spectators' capacity ahead of widespread vaccine roll-out. With global vaccine roll-out, countries were able to move towards full audience capacity, despite high community transmission, as evidenced by the English Events Research Programme.[14] This programme highlighted

close collaboration between national governments, public health authorities and sports/events organisers. Also, it underscored the need to address the sports' risks and the risks associated with participants' and spectators' travel and other event-related gatherings.

RETURNING TO PLAY

Allowing people to resume prepandemic activity became an increasing priority as it became clear that the pandemic would not be short-lived. Research showed that daily testing and enhanced public health protocols did not carry an additional risk of transmission compared with standard isolation for close contacts of SARS-CoV-2-positive persons in professional golf.[15 16] This contributed to policy change for COVID-19-specific guidelines for the wider population.

A SIGNIFICANT FRONTIER: RETURNING PERSONS POSITIVE FOR SARS-COV-2 TO SPORT

With high rates of vaccination contributing to improved immunity[17] and less severe variants prevalent, the balance between the risk of transmission and the known employment, cultural and economic benefits of prepandemic activity is changing. As a result, golf, for example, has collaborated with the Ministerial Advisory Committee and the National Institute for Communicable Diseases in South Africa to allow asymptomatic persons positive for SARS-CoV-2 to participate in golf while maintaining physical distancing and avoidance of shared indoor spaces.[18] There is a gradual realisation that asymptomatic SARS-CoV-2 infection is not an absolute contraindication to participation in exercise/competition. This is contributing to many sports withdrawing from routine asymptomatic screening now that high rates of vaccination have been achieved.

WHAT IS NEXT?

This editorial highlights that collaboration between governments and their public health authorities and sports organisations has successfully allowed sports events to recommence, using guidance based on the best available science and practical considerations. Further, this collaboration has informed wider population-level health policy decisions. The COVID-19 pandemic is not over, and ongoing risk assessment and proportionate risk reduction are merited as we adapt to life with SARS-CoV-2, and to decrease the impact of other illness, to the benefit of our athletes.

Author affiliations
[1]Sports and Exercise Medicine Department, University of Edinburgh, Edinburgh, UK
[2]European Tour Performance Institute, Virginia Water, UK
[3]University of Pretoria Faculty of Health Sciences, Pretoria, South Africa
[4]MC/VUmc IOC Research Center of Excellence, Amsterdam UMC Location AMC, Amsterdam, The Netherlands
[5]Health and Workforce Directorate, Scottish Government, Edinburgh, UK
[6]Department of Family Medicine, McMaster University, Hamilton, Ontario, Canada
[7]International Golf Federation, Lausanne, Switzerland
[8]World Rugby Limited, Dublin, Ireland
[9]International Olympic Committee, Lausanne, Switzerland
[10]Medical Department, Fédération Internationale de Football Association, Zurich, Switzerland
[11]Health Protection Team, Public Health Wales, Cardiff, UK
[12]UK Health Security Agency, London, UK

Twitter Andrew Murray @docandrewmurray, Babette Pluim @docpluim and Margo Lynn Mountjoy @margo.mountjoy

Acknowledgements We wish to acknowledge the expertise and leadership of Amaia Artazcoz Glaria, Maurizio Barbeschi, Maria Borodina and Albis Francesco Gabrielli, as well as the WHO Mass Gathering Cell, host national governments and public health authorities while collaborating on research, strategy and implementation during the COVID-19 pandemic.

Contributors AMu and PGR: editorial idea. All authors contributed to writing and final approval of the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests AMu, BP, ECF and AMa received remuneration from sporting organisations as per authors' affiliations.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

ORCID iDs
Patrick Gordon Robinson http://orcid.org/0000-0002-8117-2968
Margo Lynn Mountjoy http://orcid.org/0000-0001-8604-2014
Éanna C Falvey http://orcid.org/0000-0003-3961-1805

REFERENCES

1 Lee I-M, Shiroma EJ, Lobelo F, *et al*. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *Lancet* 2012;380:219–29.
2 Biddle S. Physical activity and mental health: evidence is growing. *World Psychiatry* 2016;15:176–7.
3 World Health Organisation. Be active during COVID-19, 2020. Available: https://www.who.int/news-room/q-a-detail/be-active-during-covid-19 [Accessed 16 Mar 2022].
4 World Health Organisation. Considerations for sports federations/sports event organizers when planning mass gatherings in the context of COVID-19, 2020. Available: https://apps.who.int/iris/bitstream/handle/10665/331764/WHO-2019-nCoV-Mass_Gatherings_Sports-2020.1-eng.pdf
5 World Health Organisation. Mass gathering sporting risk assessment, 2021. Available: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/points-of-entry-and-mass-gatherings
6 World Health Organisation. Who mass gathering COVID-19 risk assessment tool – sports events 2021. Available: https://www.who.int/publications/i/item/10665-333187 [Accessed 14 Apr 2021].
7 Carmody S, Murray A, Borodina M, *et al*. When can professional sport recommence safely during the COVID-19 pandemic? risk assessment and factors to consider. *Br J Sports Med* 2020;54:946–8.
8 Kemp S, Cowie CM, Gillett M, *et al*. Sports medicine leaders working with government and public health to plan a 'return-to-sport' during the COVID-19 pandemic: the UK's collaborative five-stage model for elite sport. *Br J Sports Med* 2021;55:4–5.
9 Schumacher YO, Tabben M, Hassoun K, *et al*. Resuming professional football (soccer) during the COVID-19 pandemic in a country with high infection rates: a prospective cohort study. *Br J Sports Med* 2021;55:1092–8.
10 Jones B, Phillips G, Kemp S, *et al*. SARS-CoV-2 transmission during rugby League matches: do players become infected after participating with SARS-CoV-2 positive players? *Br J Sports Med* 2021;55:807–13.
11 Al-Tawfiq JA, El-Kafrawy SA, McCloskey B, *et al*. COVID-19 and other respiratory tract infections at mass gathering religious

and sporting events. *Curr Opin Pulm Med* 2022. doi:10.1097/MCP.0000000000000859. [Epub ahead of print: 31 Jan 2022].
12 Woodford L, Bussey L. Exploring the perceived impact of the COVID-19 pandemic social distancing measures on athlete wellbeing: a qualitative study utilising Photo-Elicitation. *Front Psychol* 2021;12:624023.
13 Elliott N, Martin R, Heron N, *et al*. Infographic. graduated return to play guidance following COVID-19 infection. *Br J Sports Med* 2020;54:1174–5.
14 Smith JAE, Hopkins S, Turner C, *et al*. Public health impact of mass sporting and cultural events in a rising COVID-19 prevalence in England. *Epidemiol Infect* 2022;150:e42.
15 Robinson PG, Murray A, Sheer V, *et al*. Pilot evaluation of risk assessment and enhanced protocols regarding contacts at an international professional golf event. *BMJ Open Sport Exerc Med*. In Press 2021;7:e001127.
16 Robinson PG, Murray A, Close G, *et al*. Assessing the risk of SARS-CoV-2 transmission in international professional golf. *BMJ Open Sport Exerc Med* 2021;7:e001109.
17 Our World in Data. Coronavirus (COVID-19) vaccinations, 2022. Available: https://ourworldindata.org/covid-vaccinations [Accessed 16 Mar 2022].
18 Robinson P, Murray A, Close G. Returning persons with SARS-CoV-2 to the field of play in professional golf: a risk assessment and risk reduction approach. *Unpublished* 2022.