

UK COVID-19 Inquiry: Module 2B - Rule 9

Request to Professor Ronan Lyons - Reference:M2B/RL/01

Request copied below with responses.

Please provide the following information:

1. A brief overview of your qualifications, career history, professional expertise and major publications.

Professor Ronan Lyons, OBE, FmedSci, FLSW, FFPH, MAE, MD

Professor of Public Health at Swansea University
Honorary Consultant in Public Health with Public Health Wales NHS Trust
Adjunct Professor at Monash University, Australia.

I am a medically qualified public health expert with a particular focus on research that uses routine data in cohorts, trials, and the evaluation of natural experiments and complex interventions. I led the Health Data Research UK public health research portfolio from 2018-2021.

I was also the principal investigator of the Medical Research Council (MRC) funded 'Controlling COVID-19 through enhanced population surveillance and intervention (Con-COV): a platform approach. This used anonymised information from many different sources to track the spread of the pandemic in the Welsh population and sub-populations, measure direct and indirect impacts, and evaluate the effectiveness of countermeasures. This research fed into TAG and was published in many different scientific papers. These are listed under Question 4.

I am also Associate Director for the Medical Research Council's Dementias Research Platform UK, a senior investigator in the Economic and Social Research Council funded Administrative Data Research Partnership and investigator in the Health and Care Research Wales funded National Centre for Population Health and Wellbeing Research.

Please see attached 2 page CV for additional details.

2. A list of the groups (i.e. TAG and/or any of its subgroups) in which you have been a participant, and the relevant time periods. Please also confirm if you are or have been a participant in SAGE or other relevant groups.

I was a member of the Welsh Government COVID-19 Technical Advisory Group (TAG) from 20/03/20 to currently. I attended many meetings. Please see attached excel sheet from Welsh Government on attendances. Attendances were not always recorded on their system. I attended the vast majority of the meetings

I attended several meetings of the Children and Education subgroup: 11/05/20, 28/05/20, and 04/06/20.

I was a member of the COVID-19 Research and Analysis Group: Adult Care Homes which met on 16/09/20. We conducted and published research on the risks of COVID-19 in care homes and on the uptake and effectiveness of vaccination.

I was also on the First Minister's Covid-19 Black, Asian and Minority Ethnic (BAME) Advisory Group and its Risk Assessment Subgroup and attended meetings on the 29/04/20 and 08/07/20. I presented on work we were doing on COVID-19 and ethnicity. I was a member of a subgroup developing a healthcare workforce risk assessment tool led by Prof Keshav Singhal.

I attended one meeting of the SAGE Social Care Working Group in May 2020. Key staff from SAIL were invited to present on the 20th May 2020 to talk about the linked data available in Wales. It was decided that Dr Richard Fry (Swansea University and Rule 9 respondent) would represent Wales on that group.

I was also a contributor to the Academy of Medical Sciences report *Preparing for a Challenging Winter 2021/22* - <https://acmedsci.ac.uk/file-download/51353957>.

3. An overview of your involvement with those groups between January 2020 and May 2022, including:

a. When and how you came to be a participant;

I became involved at the beginning of the pandemic when I wrote to the CMO for Wales, Dr Frank Atherton, offering the services of my team to help understand the spread of the pandemic in Wales and help assess the effectiveness of counter-measures using the linked data in the Secure Anonymised Information Linkage (SAIL) system – www.saildatabank.com.

I was subsequently invited to join the Technical Advisory Group and the First Minister's Covid-19 Black, Asian and Minority Ethnic (BAME) Advisory Group and its Risk Assessment Subgroup.

b. The number of meetings you attended, and your contributions to those Meetings

I was a member of the Welsh Government COVID-19 Technical Advisory Group (TAG) from 20/03/20 to currently. I attended many meetings. Please see attached excel sheet from Welsh Government on attendances. Attendances were not always recorded on their system. I attended the vast majority of the meetings.

I attended several meetings of the Children and Education subgroup: 11/05/20, 28/05/20, and 04/06/20. My team worked on analysis of patterns of infection amongst pupils, school staff and their home contacts. The results were published and listed below under the answer to Question 4.

I was a member of the COVID-19 Research and Analysis Group: Adult Care Homes which met on 16/09/20. We conducted and published research on the risks of COVID-19 in care homes and on the uptake and effectiveness of vaccination.

I was also on the First Minister's Covid-19 Black, Asian and Minority Ethnic (BAME) Advisory Group and its Risk Assessment Subgroup and attended meetings on the 29/04/20 and 08/07/20. I

presented on work we were doing on COVID-19 and ethnicity and was also a member of a subgroups developing a healthcare workforce risk assessment tool led by Prof Keshav Singhal.

I attended one meeting of the SAGE Social Care Working Group in May 2020. Key staff from SAIL were invited to present on the 20th May 2020 to talk about the linked data available in Wales. It was decided that Dr Richard Fry (Swansea University and Rule 9 respondent) would represent Wales on that group.

c. Your role in providing research, information and advice.

My main was to provide evidence to the group on the spread of the SARS-CoV-2 virus and COVID-19 illness across the Welsh population and important sub-populations (care homes, health care workers, teaching staff and pupils) using the de-identified linked data in the ConCOV cohort through the SAIL databank. Many different academic and NHS groups were given access to the data and many analyses conducted. Findings were also shared on a number of occasions with members of the public through the SAIL Consumer Panel group. As part of the commitment to the funders of this research (UKRI-MRC.NIHR principally) scientific outputs were published in scientific journals. I have provided links to these under question 4.

As a public health expert I also contributed to many discussions on many topics which will have been recorded in the TAG minutes. The role of TAG was to provide evidence and advice. It did not make decisions.

4. A summary of any documents to which you contributed for the purpose of advising TAG and/or its related subgroups on the Covid-19 pandemic. Please include links to those documents where publicly available.

I contributed to many TAG documents but don't have a list of these. The TAG secretariat will have a list.

My contribution was largely based around the research we conducted, the finding of which were generally shared with TAG before publication. We published many papers on COVID and continue to do so to inform planning for future pandemics and epidemics (see below).

Lyons J, Akbari A, Torabi F, Davies G, North L, Griffiths R, Bailey R, Hollinghurst J, Fry R, Turner S, Thompson D, Rafferty J, Mizen A, Orton C, Ellwood-Thompson S, Au-Yeung L, Cross L, Gravenor M, Brophy S, Lucini B, John A, Szakmany T, Davies J, Davies C, Williams C, Emmerson C, Cottrell S, Connor T, Taylor C, Pugh R, Diggle PJ, John G, Scourfield S, Hunt J, Cunningham AM, Helliwell K, Lyons RA. (2020) Understanding and responding to COVID19 in Wales: protocol for a privacy protecting data platform for enhanced epidemiology and evaluation of interventions. *BMJ Open* 2020;10:e043010. (published 21/10/20).
<https://bmjopen.bmj.com/content/bmjopen/10/10/e043010.full.pdf>

Hollinghurst J, Lyons J, Fry R, Akbari A, Gravenor M, Watkins A, Verity F, Lyons RA. The Impact of COVID-19 on Adjusted Mortality Risk in Care Homes for Older Adults in Wales, United Kingdom: A retrospective population-based cohort study for mortality in 2016-2020. Pre-print MedRxiv

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Clift AK, Coupland CAC, Keogh R, Diaz-Ordaz K, Williamson E, Harrison E, Hayward A, Hemmingway H, Horby P, Mehta N, Benger JK, Khunti K, Spiegelhalter D, Sheikh A, Valabhji J, Lyons RA, Robson J, Semple MG, Kee F, Johnson P, Jebb S, Williams T, Hippisley-Cox J. Living risk prediction algorithm (QCOVID) for risk of hospital admission and mortality from coronavirus 19 in adults: national derivation and validation cohort. BMJ 2020;371:m3731 <https://doi.org/10.1136/bmj.m3731> (published 20/10/20).

Nafilyan V, Humberstone B, Metha N, Diamond I, Lorenzi L, Pawelek P, Schofield R, Morgan J, Brown P, Lyons R, Sheikh A, Hippisley-Cox J. An external validation of the QCovid risk prediction algorithm for risk of mortality from COVID-19 in adults: national validation cohort study in England. MedRxiv 2021.01.22.21249968: <https://doi.org/10.1101/2021.01.22.21249968>. Published 25/01/21.

Nafilyan V, Humberstone B, Mehta B, Diamond I, Lorenzi L, Pawelek P, Schofield R, Morgan J, Brown P, Lyons R, Sheikh A, Hippisley-Cox J. An external validation of the QCovid risk prediction algorithm for risk of mortality from COVID-19 in adults: national validation cohort study in England. The Lancet Digital Health 2021, [https://doi.org/10.1016/S2589-7500\(21\)00080-7](https://doi.org/10.1016/S2589-7500(21)00080-7) (published 25/05/21).

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Torabi F, Akbari A, North L, Harris D, Davies G, Gravenor M, Griffiths R, Lyons J, Jenkins N, Morris A, Halcox J, Lyons RA. Evaluating the effect of COVID-19 on dispensing patterns: a national cohort analysis. *MedRxiv* 2021.02.15.21251552; doi: <https://doi.org/10.1101/2021.02.15.21251552>

Dobbs TD, Gibson JAG, Fowler AJ, Abbott TE, Dias P, Torabi F, Griffiths R, Lyons RA, Pearse RM, Whitaker IS. Surgical activity in England and Wales during the COVID-19 pandemic: a nationwide observational cohort study. *MedRxiv preprint* doi: <https://www.medrxiv.org/content/10.1101/2021.02.27.21252593v1> (published 01/03/21).

Dobbs TD, Gibson JAG, Fowler AJ, Abbott TE, Shahid S, Torabi F, Griffiths R, Lyons RA, Pearse RM, Whitaker IS. Surgical activity in England and Wales during the COVID-19 pandemic: a nationwide observational cohort study. *British Journal of Anaesthesia* 2021 <https://doi.org/10.1016/j.bja.2021.05.001> (published 17/06/21).

Hollinghurst J, North L, Emmerson C, Akbari A, Torabi F, Lyons RA, Hawkes AG, Bennett E, Gravenor MB, Fry R. Intensity of COVID-19 in care homes following Hospital Discharge in the early stage of the UK epidemic. *medRxiv* 2021.03.18.21253443; doi: <https://doi.org/10.1101/2021.03.18.21253443>

Hollinghurst J, North L, Perry M, Akbari A, Gravenor MB, Lyons RA, Fry R. COVID-19 Infection Risk amongst 14,104 Vaccinated Care Home Residents: A national observational longitudinal cohort study in Wales, United Kingdom, December 2020 to March 2021. *medRxiv* 2021.03.19.21253940; doi: <https://doi.org/10.1101/2021.03.19.21253940>

Holt H, Talaei M, Greenig M, Zenner D, Symons J, Relton C, Young KS, Davies MR, Thompson KN, Ashman J, Rajpoot SS, Kayyale AA, El Rifai S, Lloyd PJ, Jolliffe DA, Finer S, Iliodromiti S, Miners A, Hopkinson NS, Alam B, Pfeffer PE, McCoy D, Davies GA, Lyons RA, Griffiths CJ, Kee F, Sheikh A, Breen G, Shaheen SO, Martineau AR. Risk factors for developing COVID-19: a population based longitudinal study (COVIDENCE UK). *medRxiv* doi: <https://doi.org/10.1101/2021.03.27.21254452>. (30/03/21)

Alsallakh MA, Sivakumaran S, Kennedy S, Vasileiou E, Lyons RA, Robertson C, Shiekh A, Davies GA on behalf on the EAVEII Collaborators. Impact of COVID-19 lockdown on the incidence and mortality of acute exacerbations of chronic obstructive pulmonary disease: national interrupted time series analyses for Scotland and Wales. *BMC Med* **19**, 124 (2021). <https://doi.org/10.1186/s12916-021-02000-w>. (published 17/05/21).

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Perry M, Akbari A, Cottrell S, Gravenor MB, Roberts R, Lyons RA, Bedston S, Torabi F, Griffiths L. Inequalities in coverage of COVID-19 vaccination: a population register based cross-sectional study in Wales, UK. *Vaccine* 2021 <https://doi.org/10.1016/j.vaccine.2021.09.019> (published 08/09/21)

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Vasileiou E, Shi T, Kerr S, Robertson C, Joy M, McGagh D, William J, Hobbs R, Bradley D, O'Reilly D, Murphy D, Chuter A, Beggs J, Ford D, Orton C, Akbari A, Bedston S, Davies G, Griffiths LJ, Griffiths R, Lowthian E, Lyons J, Lyons RA, North L, Perry M, Torabi F, Pickett J, McMenamin J, McCowan C, Agrawal U, Wood R, Stock SJ, Moore E, Henery P, Simpson CR, Sheikh A. Investigating the uptake, effectiveness and safety of COVID-19 vaccines: protocol for an observational study using linked UK national data. *BMJ Open* 2022;12:e050062. doi:10.1136/bmjopen-2021-050062 <https://bmjopen.bmj.com/content/bmjopen/12/2/e050062.full.pdf> (published 09/02/22).

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Hollinghurst J, Hollinghurst R, North L, Mizen A, Akbari A, Long S, Lyons RA, Fry R. COVID-19 risk factors amongst 14,786 care home residents: An observational longitudinal analysis including daily community positive test rates of COVID-19, hospital stays, and vaccination status in Wales (UK) between 1st September 2020 and 1st May 2021. *Age and Ageing*. <https://doi.org/10.1093/ageing/afac084> (published 03/05/22).

Bedston S, Akbari A, Jarvis CI, Lowthian E, Torabi F, North L, Lyons J, Perry M, Griffiths LJ, Owen RK, Beggs J, Chuter A, Bradley DT, de Lusignan S, Fry R, Hobbs R, Hollinghurst J, Katikireddi SR, Murphy S, O'Reilly D, Robertson C, Shi T, Tsang RSM, Sheikh A, Lyons RA. COVID-19 vaccine uptake, effectiveness and waning in 93,000 health care workers: a national prospective cohort study in Wales. *Vaccine* 2022;40:27 [10.1016/j.vaccine.2021.11.061](https://doi.org/10.1016/j.vaccine.2021.11.061)

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study of 11.6 million individuals in England, Scotland, and Wales. *PLoS Medicine*, 2022, 19(2):e1003927 (published 22/02/22). <https://doi.org/10.1371/journal.pmed.1003927>

Perry M, Gravenor MB, Cottrell S, Bedston S, Roberts R, Williams C, Salmon J, Lyons J, Akbari A, Lyons RA, Griffiths LJ. COVID-19 vaccine effectiveness in adults aged 50 years and older in Wales UK, a population data-linkage cohort approach. *Human Vaccines & Immunotherapeutics* 2022 <https://doi.org/10.1080/21645515.2022.2031774> (published 03/03/22).

Torabi F, Akbari A, Bedston S, Davies G, Abbasizanjani H, Gravenor M, Griffiths M, Harris D, Jenkins N, Lyons J, Morris A, North L, Halcox J, Lyons RA. Impact of COVID19 pandemic on community medication dispensing: a national cohort analysis in Wales, UK. *IJPDS*. (Accepted 06/03/22). <https://ijpds.org/article/view/1715>

Jolliffe D, Holt H, Greenig M, Talaei M, Perdek N, Pfeffer P, Maltby S, Symons J, Barlow N, Normandale A, Garcha R, Richter A, Faustini S, Orton C, Ford D, Lyons R, Davies G, Kee F, Griffiths C, Norrie J, Sheikh A, Shaheen S, Relton C, Martineau A. Vitamin D Supplements for Prevention of Covid-19 or other Acute Respiratory Infections: a Phase 3 Randomized Controlled Trial (CORONAVIT). *MedRxiv* (23/03/22). doi: <https://doi.org/10.1101/2022.03.22.22271707>

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Evans A, Qi C, Adebayo L, Underwood J, Coulson J, Bailey R, John G, Cooper A, Akbari A, Lyons R, Edwards A. Real-world effectiveness of molnupiravir, nirmatrelvir-ritonavir, and sotrovimab on preventing hospital admission among higher-risk patients with COVID-19 in Wales: a retrospective cohort study. *Journal of Infection* (published 10/02/23). <https://doi.org/10.1016/j.jinf.2023.02.012>

5. A summary of any articles you have written, interviews and/or evidence you have given regarding the work of the above-mentioned groups and/or the Welsh Government's response to the Covid-19 pandemic. Please include links to those documents where publicly available.

I didn't write any articles but did appear on a BBC Wales investigation report on 09/11/2020 on delays in cancer diagnosis due to the pandemic.

BBC Wales Investigates - <https://www.bbc.co.uk/news/uk-wales-54808693>

Programme available: <https://www.bbc.co.uk/iplayer/episode/m000pfhy/bbc-wales-investigates-the-hidden-cost-of-covid>

6. Your views as to whether the work of the above-mentioned groups in responding to the Covid-19 pandemic (or Wales's response more generally) succeeded in its aims. This may include, but is not limited to, your views on:

I have copied the Terms of reference of TAG below:

Purpose

Welsh Government has identified a need to ensure that scientific and technical information and advice, including advice arising from the UK Scientific Advisory Group for Emergencies (SAGE)¹⁻³ for COVID-19, is discussed and interpreted for Welsh Government and Welsh Ministers in order to:

- Interpret SAGE, COBR and other relevant working group outputs into a Welsh context
- Commission and interpret models, research outputs and measurements that are specific to Wales
- Help inform NHS, Social Care and wider public sector planning guidance
- Relay relevant information and questions from Welsh Government to SAGE
- Support a collegiate approach to research in all areas of COVID-19 across the four nations.

- Ensure Welsh Government and Public Health Wales have timely access to the most up-to-date scientific and technical information related to the outbreak.

My view is TAG very largely succeeded in meeting these aims. There were a large number of questions that required answers and people worked extremely hard on supplying answers as quickly as possible. However, the data always lagged to some degree, largely due to coding and production delays within the NHS. It would have been better if some categories of coded data were made available more quickly but those producing the data were under huge constraints and additional coding staff cannot be created overnight. I think many of the analyses undertaken, alongside work undertaken by other groups such as the modellers and PHW, helped inform TAG of the scale, distribution and determinants of infection and illness and the effectiveness of countermeasures. Analyses with longer term outcomes will always take time but will be very valuable in informing responses to future pandemics and epidemics.

- a. The composition of the groups and/or their diversity of expertise;

I was impressed by the breadth and depth of expertise on TAG and the willingness to co-opt additional members when gaps were identified. TAG also benefitted from presentations from many UK experts.

- b. The way in which the groups were commissioned to work on the relevant issues;

Our group offered our services and then responded to a list of topics and questions raised by TAG. Naturally, these evolved as the pandemic evolved.

- b. The resources and support that were available;

We used existing resources funded by UKRI-MRC, UKRI-ESRC, HDRUK and Health and Care Research Wales and supplemented these by a successful bid to UKRI-MRC to set up the ConCOV cohort.

- c. The advice given and/or recommendations that were made;

TAG produced many papers that will be available to the inquiry. Generally speaking, each was circulated in draft, discussed at the meetings and different views incorporated.

- d. The extent to which the groups worked effectively together;

I thought the group worked very well. Everybody tried to do their best to respond to the national emergency. The meetings were very well chaired by Rob Orford and Fliss Bennee, who actively sought a variety of views. I was particularly impressed by the junior civil servants who organised the meetings (initially three times a week) with papers being made available seven days a week.

- f. The extent to which applicable structures and policies were utilised and/or complied with and their effectiveness.

I am not sure I quite understand this question.

7. Your views as to any lessons that can be learned from the Welsh Government's response to the Covid-19 pandemic, in particular relating to the work of the above-mentioned groups. Please describe any changes that have already been made, and set out any recommendations for further changes that you think the Inquiry

should consider making.

Knowledge of the factors underlying spread, susceptibility to disease and the effectiveness of countermeasures is key to taking the most appropriate decisions. Wales benefitted enormously from the linked data available through the SAIL databank and access to a large number of trained data analysts to turn queries around quickly. However, some data sources are not turned around quickly enough. There should be more focus on making data available as quickly as possible and ensuring that lessons learned during the pandemic are not lost.

8. A brief description of documentation relating to these matters that you hold (including soft copy material held electronically). Please retain all such material. I am not asking for you to provide us with this material at this stage, but I may request that you do so in due course.

I have included references to all the papers in section 4.