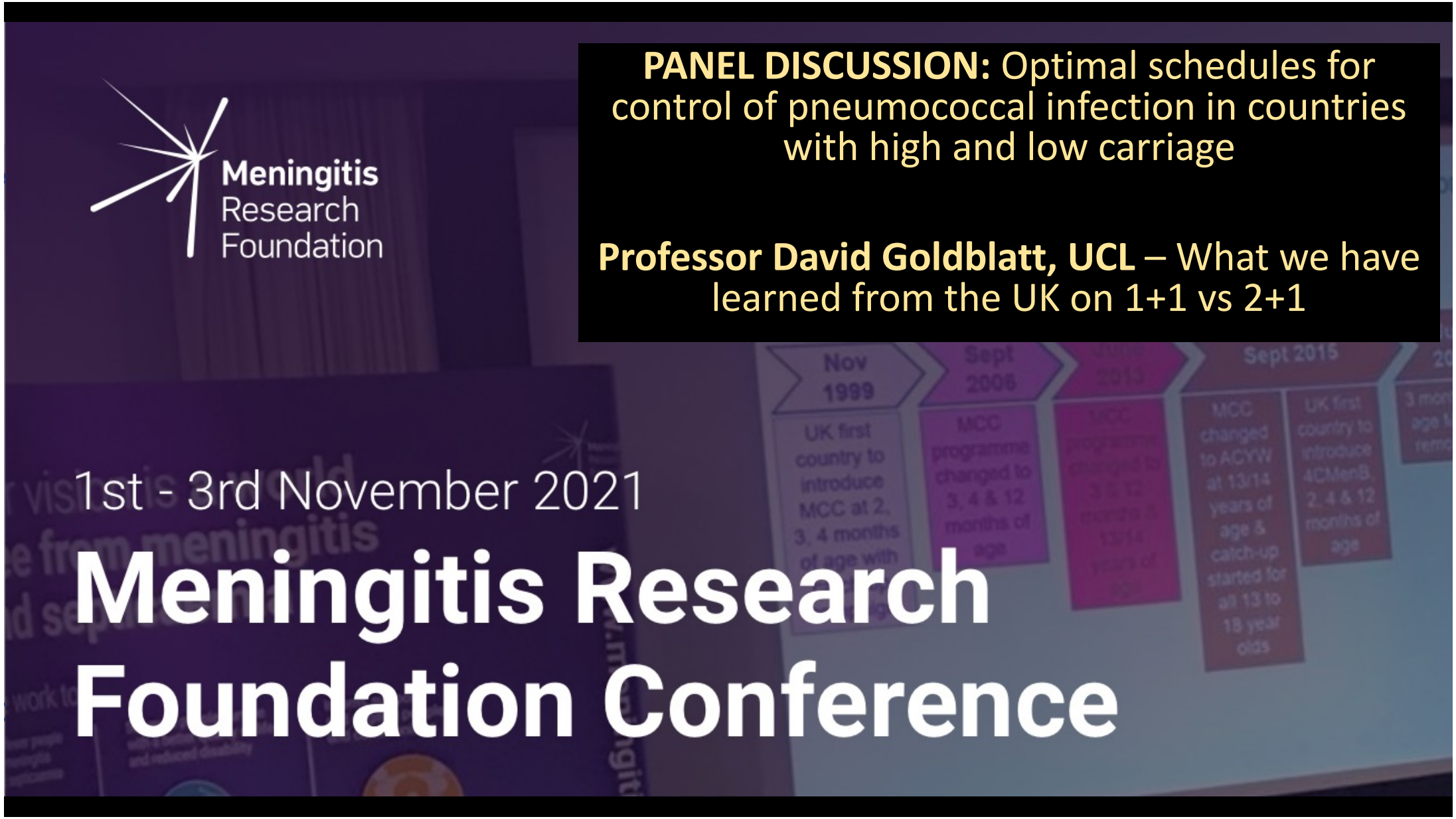
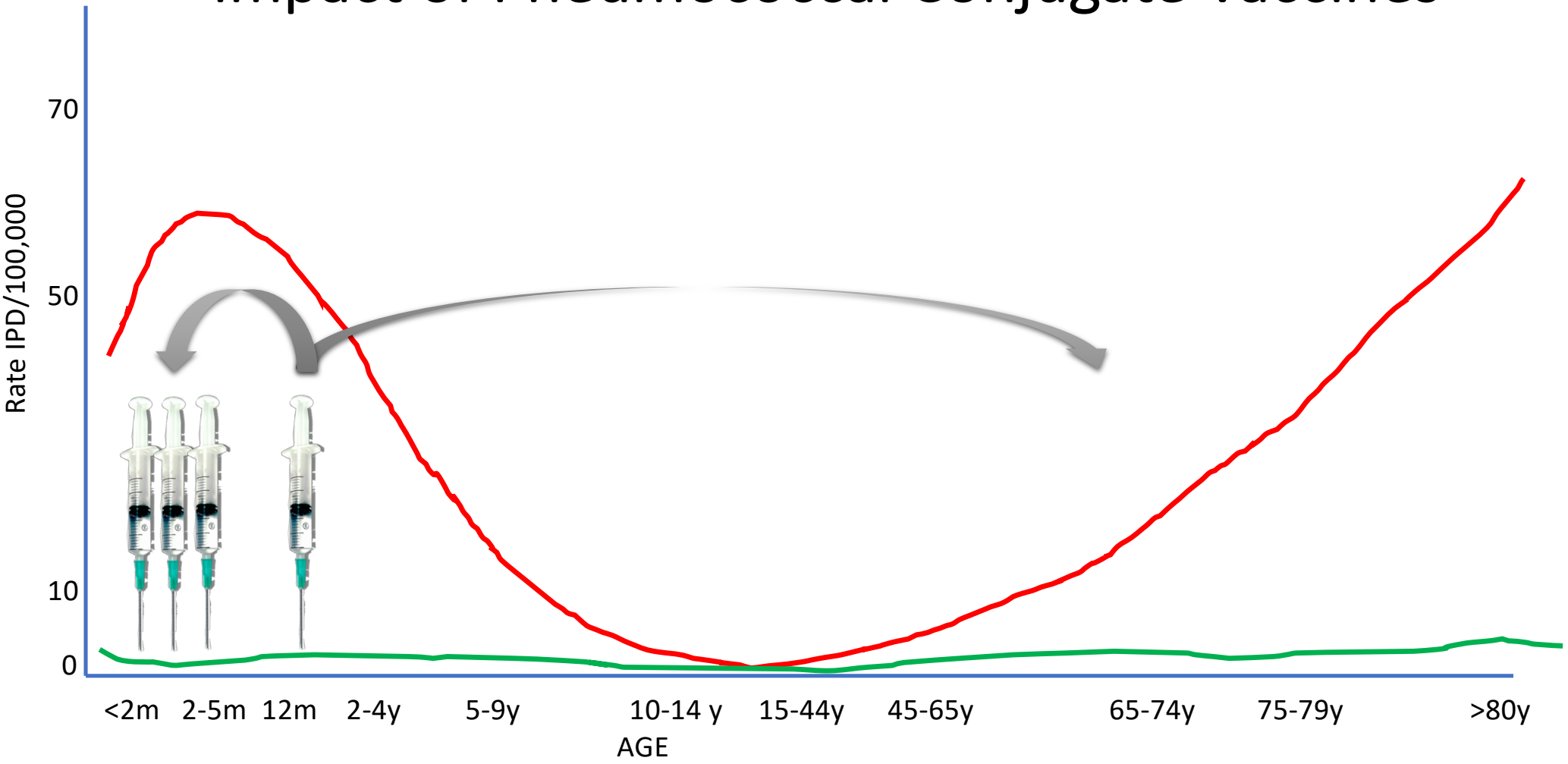

Meningitis
Research
Foundation
PANEL DISCUSSION: Optimal schedules for control of pneumococcal infection in countries with high and low carriage
Professor David Goldblatt, UCL – What we have learned from the UK on 1+1 vs 2+1
1st - 3rd November 2021
Meningitis Research Foundation Conference
Nov 1999
UK first country to introduce MCC at 2, 3, 4 months of age with
Sept 2006
MCC programme changed to 3, 4 & 12 months of age
Sept 2015
MCC changed to ACYW at 13/14 years of age & catch-up started for all 13 to 18 year olds
UK first country to introduce 4CMenB, 2, 4 & 12 months of age

Age, Invasive Pneumococcal Disease and the Impact of Pneumococcal Conjugate Vaccines



Pneumococcal conjugate vaccine 13 delivered as one primary and one booster dose (1 + 1) compared with two primary doses and a booster (2 + 1) in UK infants: a multicentre, parallel group randomised controlled trial

David Goldblatt*, Jo Southern*, Nick J Andrews, Polly Burbidge, Jo Partington, Lucy Roalfe, Marta Valente Pinto, Vasilli Thalasselis, Emma Plested, Hayley Richardson, Matthew D Snape, Elizabeth Miller

Ashish Badvekar
PCV10/13
3+0/2+1/1+1

Manish Sadarangani
PCV13
2+1/1+1

Lancet ID 2017

PCV13: 2+1 2m-----4m 12m
1+1 3m 12m

Post Boost: Immunogenicity of a 1+1 schedule is equivalent to or superior to a 2+1 schedule for 9 of the 13 serotypes in PCV13

Immunogenicity of a single-dose compared with a two-dose primary series followed by a booster dose of ten-valent or 13-valent pneumococcal conjugate vaccine in South African children: an open-label, randomised, non-inferiority trial

Shabir A Madhi, Eleonora AML Mutsaerts*, Alane Izu, Welekazi Boyce, Sutika Bhikha, Benit T Ikulinda, Lisa Jose, Anthonet Koen, Amit J Nana, Andrew Moultrie, Lucy Roalfe, Adam Hunt, David Goldblatt, Clare L Cutland, Jeffrey R Dorfman*

Summary

Background Routine childhood immunisation with pneumococcal conjugate vaccine (PCV) has changed the epidemiology of pneumococcal disease across age groups, providing an opportunity to reconsider PCV dosing schedules. We aimed to evaluate the post-booster dose immunogenicity of ten-valent (PCV10) and 13-valent (PCV13) PCVs between infants randomly assigned to receive a single-dose compared with a two-dose primary series.

Lancet Infect Dis 2020
Published Online
August 25, 2020
https://doi.org/10.1016/S1473-3099(20)30289-9

PCV13	1+1	6w		9m
or	1+1		14w	9m
PCV10	2+1	6w	14w	9m

For both PCV10 and PCV13, 1+1 schedules were non-inferior to 2+1

Lancet ID 2020

Pneumococcal conjugate vaccine 13 delivered as one primary and one booster dose (1 + 1) compared with two primary doses and a booster (2 + 1) in UK infants: a multicentre, parallel group randomised controlled trial

David Goldblatt*, Jo Southern*, Nick J Andrews, Polly Burbidge, Jo Partington, Lucy Roalfe, Marta Valente Pinto, Vasilli Thalasselis, Emma Plested, Hayley Richardson, Matthew D Snape, Elizabeth Miller

Lancet ID 2017

PCV13: 2+1 2m-----4m 12m
1+1 3m 12m

Carriage at 12m and 18m of age: No difference between schedules

Immunogenicity of a single-dose compared with a two-dose primary series followed by a booster dose of ten-valent or 13-valent pneumococcal conjugate vaccine in South African children: an open-label, randomised, non-inferiority trial

Shabir A Madhi, Eleonora AML Mutsaerts*, Alane Izu, Welekazi Boyce, Sutika Bhikha, Benit T Ikulinda, Lisa Jose, Anthonet Koen, Amit J Nana, Andrew Moultrie, Lucy Roalfe, Adam Hunt, David Goldblatt, Clare L Cutland, Jeffrey R Dorfman*

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PCV13	1+1	6w		9m
or	1+1		14w	9m
PCV10	2+1	6w	---14w	9m

Carriage at 9m, 15m and 18m of age:
No difference between vaccines or schedules
Except
PCV13 1+1<2+1 VT type at 15m of age

Lancet ID 2020

Pneumococcal conjugate vaccine 13 delivered as one primary and one booster dose (1 + 1) compared with two primary doses and a booster (2 + 1) in UK infants: a multicentre, parallel group randomised controlled trial

David Goldblatt, Jo Southern*, Nick J Andrews, Polly Burbidge, Jo Partington, Lucy Roalfe, Marta Valente Pinto, Vasilli Thalasselis, Emma Plested, Hayley Richardson, Matthew D Snape, Elizabeth Miller*

PLOS | MEDICINE

RESEARCH ARTICLE

Estimated impact of revising the 13-valent pneumococcal conjugate vaccine schedule from 2+1 to 1+1 in England and Wales: A modelling study

Yoon Hong Choi[1]*, Nick Andrews[1], Elizabeth Miller[2]

1 Statistics, Modelling and Economics Department, Data and Analytical Sciences, National Infection Service, Public Health England, London, United Kingdom, **2** Immunisation and Countermeasures Division, National Infection Service, Public Health England, London, United Kingdom

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Department of Health & Social Care

Joint Committee on Vaccination and Immunisation

1+1 implemented on January 1st 2020

Impact on IPD monitoring via PHE Surveillance system

Number of IPD Cases by month; all ages England, 2016/17-2020/21

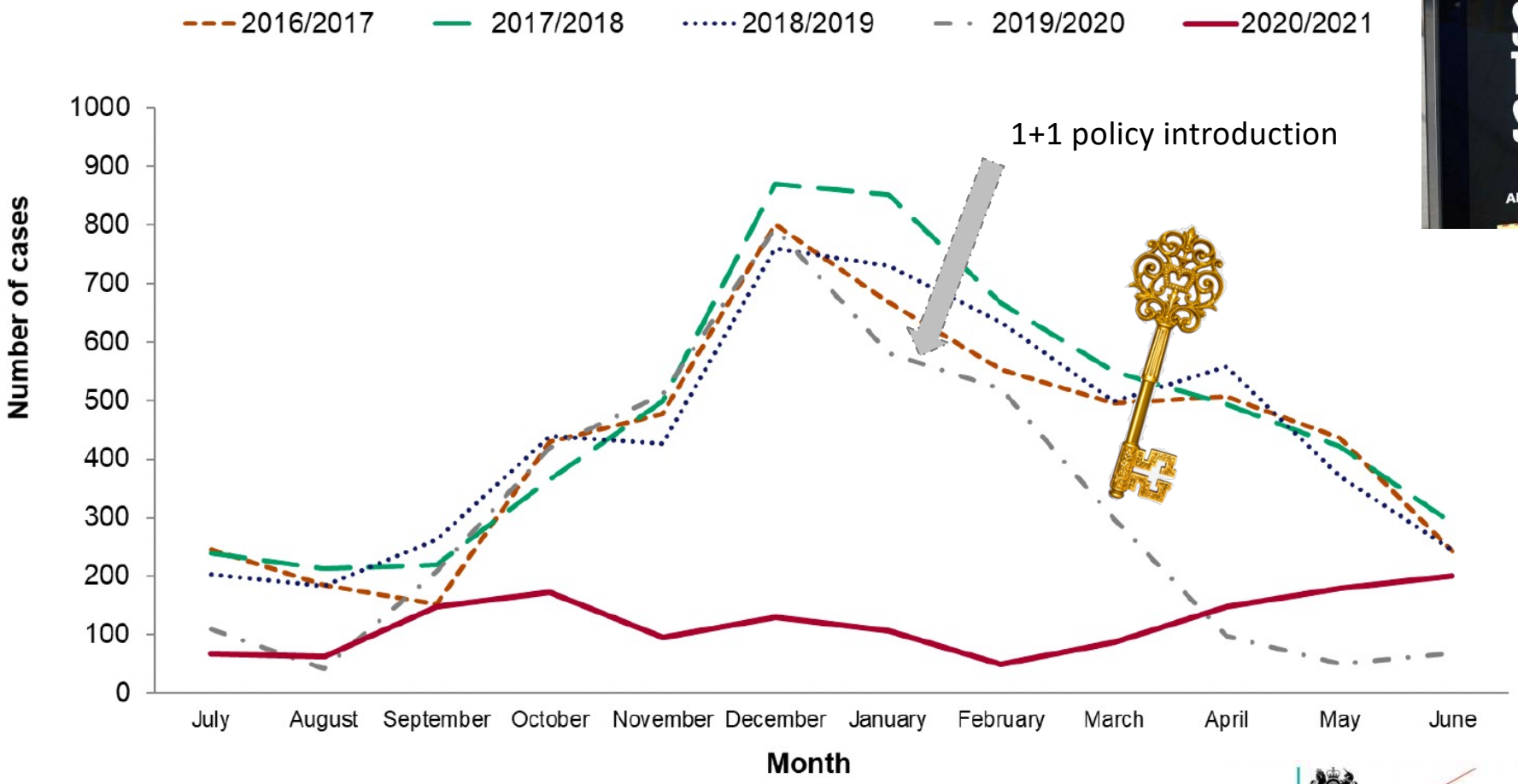

Figure shown with permission: Zahin Amin-Chowdhury and Shamez Ladhani, Lancet Resp Med (submitted)

Public Health England

UK Health Security Agency

Future

Direct:

- Ongoing surveillance in the UK and evaluation in the light of the baseline perturbation. Will there be a rebound?
- Implementation in other countries with appropriate surveillance to assess impact

Indirect:

- Community based carriage studies in due course to inform impact