Lessons learned from bringing the public health model to diagnosis in the United Kingdom

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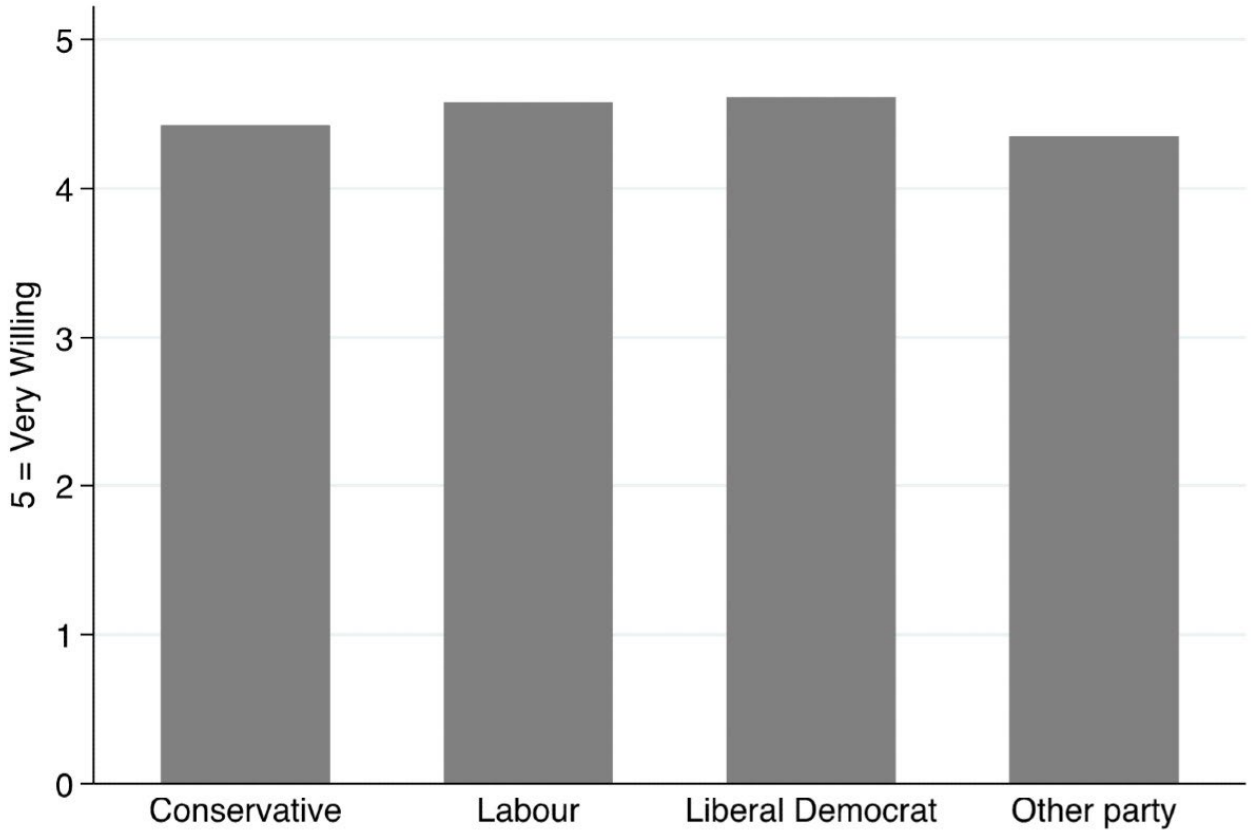
Two countries divided by a common language

- USA and UK (and Europe more generally) are very different
- Attitudes to COVID in US are highly and aggressively partisan
  - (Democrats 20 percentage points more likely than Republicans to report wearing masks in public)
- Not in UK
  - (vaccine uptake is lower in Labour voting areas but partly explained by deprivation)

In general, how willing or not are you to wear a face mask or covering in public settings? (5= very willing / 1=very unwilling)



https://blogs.lse.ac.uk/covid19/2020/11/18/no-partisan-divide-in-willingness-to-wear-masks-in-the-uk/

But there are some political divides

- United Kingdom comprises four nations
  - Many, but not all powers to respond to pandemic are devolved
  - Scotland, Wales, Northern Ireland have acted more decisively than England
  - In England, Boris Johnson must balance the science with extreme libertarian wing of his party
    - (European Research Group - pro Brexit MPs – morphed into COVID Recovery Group)
- Consistently, public opinion has been more willing to take measures to reduce risks of COVID than politicians
  - People did not rush to enjoy removal of rules after “Freedom Day” in July 2021
  - High demand for vaccines, testing etc. and adherence to rules

Focus on technology

- Political reluctance to impose restrictions has created an emphasis on technological solutions
  - Vaccine roll out is the one area where the government is consistently considered as performing well
    - (although in reality, measured by second doses, now falling behind many other European countries)
  - Testing on mass scale - “Moonshot” – seen as way of opening up society
  - Advice to take a rapid test (“Lateral Flow Test”) before meeting others
  - Major emphasis on high rates of genomic sequencing

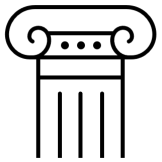
Testing must be easy

- A reminder – in the UK, the purpose of health care is to ***promote health*** and ***prevent impoverishment***
- NHS treatment is free (with minimal exceptions) and prescription medicines are free for most people and at low cost (~$13 per item for others)
- So it was logical that testing would be free (except where required for foreign travel, consistent with principle that travel medicine – e.g. Yellow Fever vaccines - is paid for
- Emphasis on maximizing uptake and minimizing barriers to access

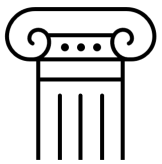
Different goals

- Diagnosis of those who are showing symptoms
- Testing contacts to identify cases and reduce transmission
- Test to protect: regular – usually twice weekly) testing of health and social care staff
- Test to enable: alternative (or less often in addition to) vaccine certification to enter venues (e.g. nightclubs, sports venues)
- Test to release: two negative LFTs at days 6-7 in fully vaccinated people to shorten isolation from 10 days
- Surveillance in population to assess progress of pandemic and policy responses

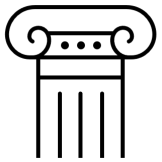
Four pillars



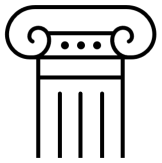
1: PCRs done in Public Health and NHS labs and hospitals for health and care workers and patients who are seriously ill



2: PCRs and LFTs done by commercial partners for the wider population. Samples taken at regional test sites, mobile testing units, satellite test centers and home tests



3: Antibody tests



4: mix of antibody and diagnostic tests for national surveillance and research (with positives transferred to pillar 1 and pillar 2)

Order coronavirus (COVID-19) rapid lateral flow tests

Use this service to order free packs of rapid lateral flow tests to be sent to your home.

> Picking up rapid lateral flow tests from a local pharmacy or collection point is the quickest way to get them for most people.

Who this service is for

You can only use this service if:

- you do not have coronavirus (COVID-19) symptoms
- you're 11 or older
- you have not been told to self-isolate
- you cannot get tests from your work, school, college or university (ask them for rapid lateral flow tests)

Do not use a rapid lateral flow test if you have COVID-19 symptoms. Get a PCR test as soon as possible and self-isolate, even if symptoms are mild.

If you're not sure, you can find out which COVID-19 test you should get on NHS.UK.

Surveillance programs

Coronavirus (COVID-19) Infection Survey

- Run by Office for National Statistics (equivalent to NCHS)
- Estimates number of infections in community population in all four nations
- People tested from randomly selected residential households and may or may not have any COVID-19 symptoms
- Nose & throat swabs taken from all household members aged two years and over
- Positivity rates calculated for seven-day periods and adjusted to represent the population.
- Also used to estimate the prevalence of ongoing symptoms following COVID-19 infection

Zoe app

- Symptom tracker
- Individuals sign up and report daily any symptoms, plus test results and vaccine status

Real-time Assessment of Community Transmission (REACT) Study

- Also estimates number of infections in community population (in England).
- Tests randomly selected individuals (rather than households) over age five years.
- Results calculated for time periods ranging from 18 to 32 days for each testing round

Schools Infection Survey

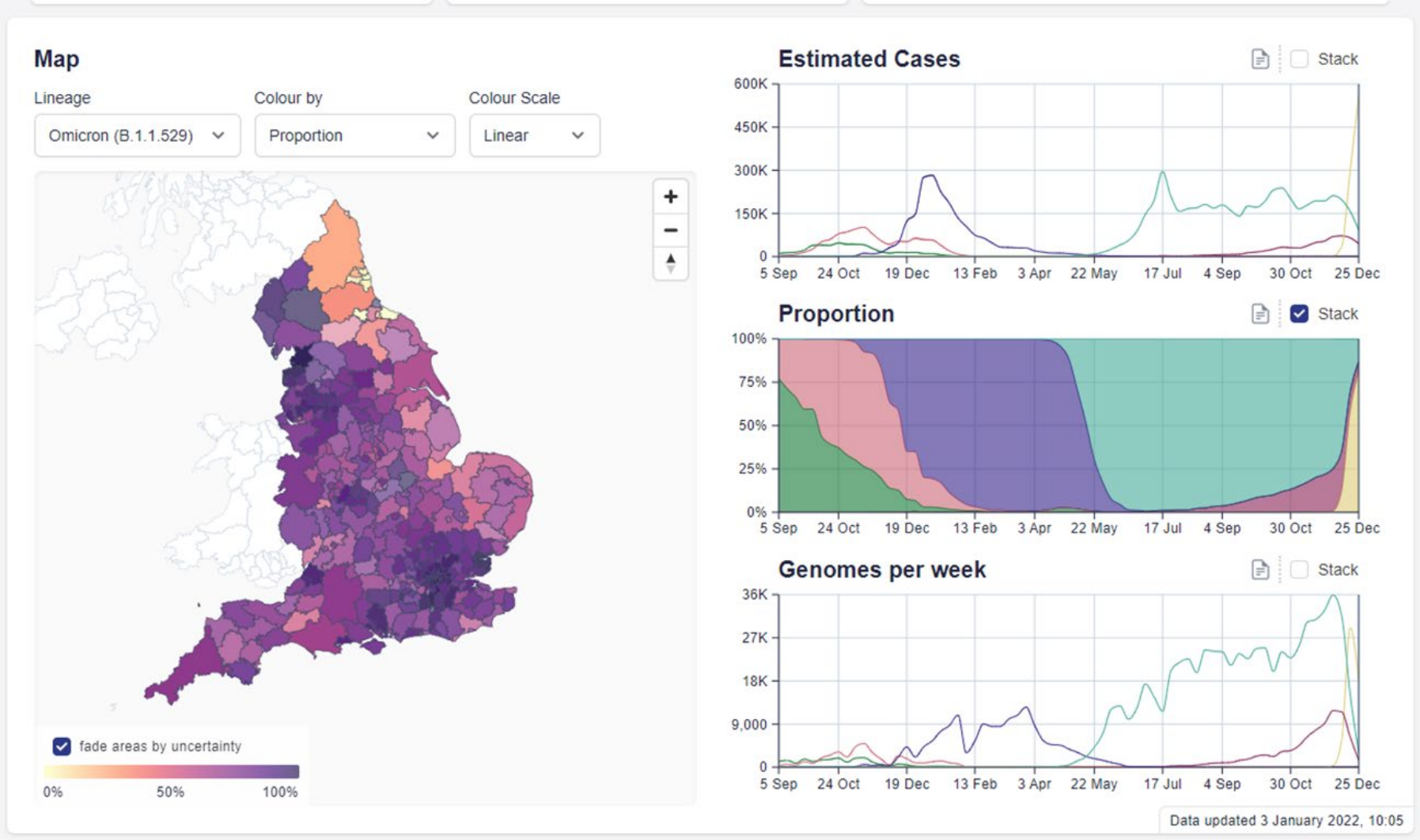
- Assesses prevalence of current COVID-19 infections and antibodies among pupils and staff in sampled primary and secondary schools in England
- Measured at half-termly intervals during the school year
- Oversamples schools in high prevalence areas of the country

COVID–19 Genomic Surveillance

- Sequencing of isolates from PCR testing

COVID–19 Genomic Surveillance

- ~ 20% of all samples are sequenced
- One of the highest in the world (Denmark ~38%)
- Compared with ~6% in USA

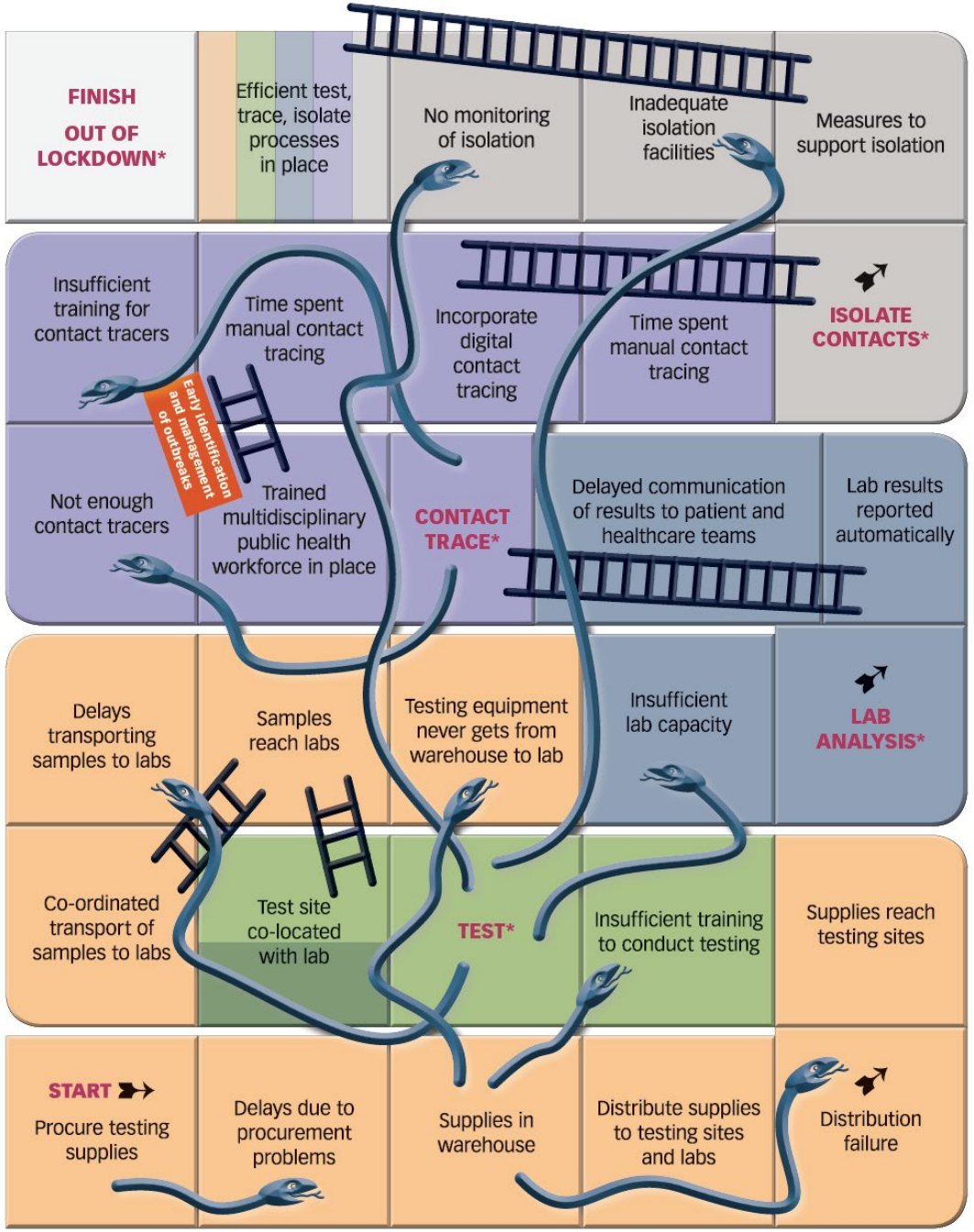


But not all is good – organization of testing centers was problematic and contact tracing has been an expensive failure

- Consistent with its usual approach, government ignored existing public sector capacity
  - Local public health directors
  - Contact tracers in sexual health clinics etc.
- Contracted with outsourcing and accountancy firms that had no experience in these areas
- Complete failure to establish links to local government, NHS, or other stakeholders
- Contracts shrouded in secrecy

Diagnosis is only one step in a complex pathway

- Find
- Test
- Trace
- Isolate
- Support



J Roy Soc Med 2020 Jul;113(7):245-250.
doi: 10.1177/0141076820939395.

Lessons learned

- Testing must be as easy as possible
- This means that tests must be free
- There is no black market (as there is no market)
- No evidence of abuse (who wants to stick a swab up their nose for pleasure?)
- However, system struggles at times of very high demand
- Not least because of shortage of essential workers (e.g. with Omicron)
- Includes lab staff but also postal and distribution workers

- The diagnostic system in the UK generally works well
- And some bits (genomic sequencing) very well
- But overall, UK's performance has not been good
- Contact tracing has been a disaster
- Inadequate support for those isolating
- This is largely a political failure, not a scientific one
- Not helped by pro-private sector bias
- And that is another story

https://www.covid19healthsystem.org/mainpage.aspx