

medConfidential note to the CDL Consideration of Vaccine Certificates¹

A sovereign state's request for vaccination certificates is a cry for assistance, made in the belief that any request for help with vaccines will fall on deaf ears. It is entirely reasonable for a country seeking to attract tourists to require a negative COVID test prior to arrival, but this is also a barrier to travel. It is equally a rational act for countries with limited vaccination infrastructure, and who most seek tourist revenue, to reduce that barrier by accepting a 'vaccine certificate' in lieu of a test – even with the consequent risk to local population health. Such countries may not feel they have other options to pursue.

If a country is so dependent on tourist revenue that it is willing to risk its own public's health, the UK would do better to send spare vaccines and experienced vaccinators than drunken² tourists.

If other sovereign countries choose to require vaccination certificates rather than negative test results, HMG must decide what to do. medConfidential is aware of many proposals, but in order to work through the issues in detail, we shall focus on the following:

If we're implementing certificates, someone vaccinated by the NHS should be able to request, digitally via NHS.UK, that a physical vaccination certificate is posted to the address at which they are registered with the NHS.

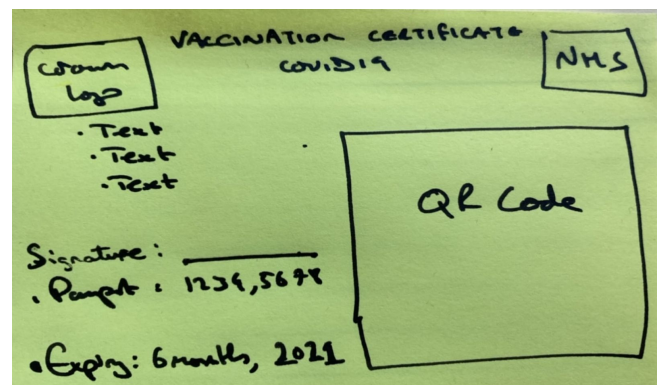
Just as some countries affix a visa or entry stamp, any vaccination certificate should be a paper insert, sized when cut to fit on a blank page of the (newly blue) passport;

Any NHS-issued certificate for anyone vaccinated by the NHS should be posted on request (via GOV.UK Notify) to a patient's registered home address, so as to mitigate impersonation and to prevent British citizens, e.g. being compelled to log into their NHS records in the presence of overseas border agents.³ There should be no digital version (or indication) of the certificate available from the NHS.

Implementing certificates is by and large a bad idea, but we appreciate HMG may not have a choice. How a country issues a certificate to go in a passport is up to each country.

June 2021 will be very different to today; the certificates are very temporary

When every adult in the UK has been offered a vaccine, and when the assumption is that nearly everyone in the UK has been vaccinated, the need to check vaccination status within the UK will be negligible. If the vaccines work as intended, we shall have achieved 'herd immunity'. If they don't, then showing you have had one would be useless 'COVID theatre'. The norm should be that everyone is vaccinated.



¹ As an aside, we welcome this review – in particular the framing of the question that was asked.

² <https://www.youtube.com/watch?v=gpxdyRd3S9E> – of course, not everyone behaves this way.

³ Who we assume may have the same powers as the UK Border Force, with less oversight and controls.

One reason to make the vaccination certificate something that sits within the context of an actual passport is the implied (or explicit) limitation that if it would not be reasonable for a passport to be shown, it should not be reasonable for a vaccination certificate to be requested – let alone required.⁴

According to evidence given to Parliament, it is likely that by May 2021 most adult residents of the UK will have been offered at least a first dose of one of the vaccines. We are writing this paper at the beginning of March 2021, with a roadmap that does not project the lifting of the majority of social and indoor contact restrictions until at least mid-May 2021 – before which time it is unlikely there would be a meaningful need for vaccination certificates.

Public distrust and legal challenges would seem inevitable were the Government to endorse a certificate that necessitated someone having been vaccinated before vaccination had been offered to everyone who could be impacted by its use.

Given vaccination is largely an age-based process, it is also important that *everyone* should be offered a vaccine before *anyone* is certificated so as to avoid perverse incentives. We note the framing and timing of the CDL's review makes this easily achievable.

A printed certificate that can be affixed to a page of the passport would remove concerns about the creation of a new ID system,⁵ could be designed to provide all of the necessary assurance, and would in practice simply be just another credential within the existing ID systems used for international travel.

Content of any certificate

The printed certificate (controlled by NHS/HMG) should be sized to fit on a blank page of a passport when cut. The specific fields on or within the certificate are subject to further debate; the fields we suggest here are purely indicative.

We would expect the inclusion of a QR code or similar, which would at a minimum contain the URL and reference code for the certificate – which when accessed, would show whether the NHS had any reason to revoke that particular certificate.

We assume several constraints:

- No new virological questions emerge, and no currently unanswered COVID-19 questions change;
- Delivery of the first certificate is not required prior to May 2021 (although we would expect delivery and roll-out thereafter to be rapid);
- The primary registry of vaccination for the UK remains the NHS;

⁴ There are areas of the (unreformed) Home Office's 'compliant environment' where this is ripe for discrimination and abuse, but that is a function of the passport check – not a vaccination certificate within it – and all residents of our country are eligible for the vaccine.

⁵ Either Government- or commercially-run.

- Workload on the NHS must be minimised, and no changes⁶ should be required for international borders and international systems.

Vaccination must be disconnected from citizenship; people get vaccinated where they **are**, not where they **were born**.

There is a need to create a weak binding between a person's paper certificate and their passport, so another field on the certificate should be a *self-declared* passport number. Given the individual will not be able to travel if their certificate and passport do not match, the incentives to provide the correct passport number at the point of generating the certificate / QR code are tightly aligned. (There is also no need for the NHS to store a person's passport number.)

Interactions of Certificates and Testing

If there is a future new variant of SARS CoV2 with vaccine escape, then PCR testing will be required – rather than a certificate for a vaccination that may no longer be effective.

At the time of writing, a negative COVID test is required in order to fly to many countries, and it is unlikely that every country's health infrastructure will have certificates available in the short term. Vaccination certificates and negative test requirements can interact badly:

- A COVID-negative test result says that – at the time of the test – that individual did not have detectable levels of SARS CoV2, and is therefore not infectious.
- Vaccination protects the individual who has had it from severe disease, and reduces⁷ but does not eliminate their ability to spread the disease.

So if someone who has tested negative is exposed to someone who *legitimately* has a vaccination certificate, the person with the certificate can still be COVID-positive and infect the (possibly unvaccinated) COVID-negative person.

For countries using vaccination certificates to manage inbound tourists, this is a recipe for multiple super-spreader events, with (potentially British) tourists as index cases.

Physical Passports vs Another App

We minimise the use of digital systems due to the need for things to work internationally at borders, where some sovereign states reserve the right to clone the data off mobile phones.

It would be *fundamentally* unwise for HMG to require British citizens to log into their medical record where that access could then be used by others.⁸ The UK border itself contains many

⁶ We are assuming that every border has the technology to read a machine-readable passport, and that should a certificate need to be checked without such a reader, relevant officials will either have or can be given a smartphone capable of scanning a QR code and connecting to the internet to verify it is valid.

⁷ Probably.

⁸ The NHS App isn't just an app, it requires an NHS Login – logging in to access one item of information from your GP record exposes all of the rest. Some (former Prime) Ministers may be happy to provide their GP records to foreign powers and junior Home Office officials. The public may take another view.

places where there are areas of poor or no mobile phone signal,⁹ and no provision for devices that may be out of power, etc. HMG does not require 'digital-only passports' to cross borders, and should not expect all of those problems to be solved for a vaccination certificate. (As with the creation of most systems that must be reliable at scale, the 'digital' part is just one element of overall delivery.)

If a British citizen does want a 'digital certificate', they could take a photo with their smartphone of the one they have been posted by the NHS. If they leave their paper certificate at home, they could even get a photo sent to them if someone is there.

Any certificate must work *because of what is on the face of it*, whether it is printed on paper or a photograph on your phone or tablet. Digital-first or digital-only certificates involve non-trivial amounts of additional software and hardware – not least a relatively recent model of smartphone – that would (as with the NHS COVID-19 app) be beyond the reach of a significant percentage of the population.

We know of many companies offering to sell variants of their ID system / 'digital wallet'¹⁰ to the Government for one or other type of COVID status passport. All of these would require different actions by citizens, may require integration with NHS and possibly even Home Office / HMPO systems, and would generally work less well than something that has been designed specifically to serve a specific purpose, and that purpose alone.

There are very good reasons why national borders require physical passports, and using a paper-based certificate does not mean 'going back to paper medical records'.

Policy questions requiring cross-Government consideration

We assume HMG will largely act with reciprocity; the UK will do to other countries as they do to our citizens. We can, of course, take fewer steps and apply different obligations:

- What exactly does the text of the certificate say; what does HMG assert – and just as importantly, what does HMG *not* assert – about the vaccination?
 - What wording is on the certificate for those who are ineligible for the vaccine, according to British rules?
 - Will other countries choose to bar entry simply because someone was too young for the British vaccination programme?
- Should the type of vaccine a person has been given be included on the certificate?
[Almost certainly not]
 - Will HMG or other countries allow entry to citizens of states where they are likely to have been given a vaccine of unknown efficacy?

⁹ Some of these areas contain 'unusually' configured base stations...

¹⁰ The two are technically synonymous.

- Would a country (for example, at one point, Germany¹¹) allow entry to a British person aged 65+ who (may have) had the AstraZeneca vaccine? Will HMG allow its citizens to be *required* to show which vaccine they had been given?
- While the UK is vaccinating its residents through the NHS, might paid-for vaccinations be made available privately to some in the future (in the same way that some get a free ‘NHS’ flu jab, but others have to pay)?
 - If so, then the obligation to provide a certificate for such people must fall on those private health providers, not the NHS, if some (e.g. visitors) may not have an NHS number, etc.
- What steps can and would NHS Login take to avoid third party apps (mis)using NHS Login to determine the contents of a person's health record, e.g. as input to their apps?
- What precedent is HMG willing to create for other countries to be able to compel a British citizen to access their medical record via the main NHS App,¹² and to show information from it to their border or other officials, as a condition of entry?
 - If HMG is willing to do so for COVID-19, then why not for HIV or mental health status, where some countries take a non-British view of such conditions?
 - Similarly, should vaccination passports be used domestically, the same basic question applies for entry to venues, employment, etc.
 - Unintended consequences abound here...
- What steps will HMG take to prevent the (discriminatory) addition of ‘passport checks’ on the high street and at privately-owned venues. Will it ban the use of such checks on central and local government premises?
 - While such checks would arguably already be illegal, additional steps are going to be required to de-incentivise the proliferation of ‘passport checks’ **not** at the border – especially where some policies may already be stretching aspects of the law.
- Given any request or requirement for vaccination certificates implies at least some public health capacity limitations, what (other) input will UK public health authorities and FCDO Travel Advice provide for British citizens travelling to countries which require vaccination certificates?
- To what extent does HMG wish to encourage / discourage / remain neutral on enabling potentially infectious British citizens to travel to places whose public health infrastructures may be struggling?
 - To what extent does HMG wish to encourage the acquisition of a vaccine certificate as a *substitute* for a negative test for COVID? (People may wish to, e.g.

¹¹ <https://twitter.com/PoliticsForAll/status/1364946811820081154>

¹² If that is the approach taken.

avoid the cost of continual testing, but that is not to say that testing may not also be necessary in some circumstances.)

- Realism and clarity in public communications will be critical.

Specific implementation issues and caveats

- **Prevent misuse of the certificate request system:** The online process should not act as a de facto vaccination certificate. Therefore, it must not give any indication whether someone has been vaccinated to avoid third parties being able to infer someone's vaccination status from that information. Ensuring that something is posted to the home address of *everyone* who requests a vaccination certificate mitigates this risk.
 - If someone has been vaccinated, they get a vaccination certificate in the post.
 - If someone has not been vaccinated – or, more accurately, if there is no record that they have been vaccinated – and they request a certificate, a letter should be sent to their home address offering them a vaccination appointment, and telling them how to correct their vaccination status if they have already been vaccinated.¹³
- **Names:** the fact that some people – particularly women, especially recently-married women – may have a different name on their medical records from their legal passport needs to be addressed in such a way that a mismatch between certificate and passport does not result in, say, a cancelled honeymoon. Names should therefore not be on the certificate.
- **NHS Numbers:** the way of getting an accurate NHS number for someone can be through any of the measures determined to be successful by NHS Digital, which may include but is not necessarily limited to NHS Login. However:
 - **Third party apps should not be allowed to request an NHS number, or to confirm that an NHS number is valid.** The use of the NHS number as an identifier by organisations other than health and social care bodies¹⁴ must remain proscribed.
- **Passport Numbers:** whether the user should be asked for their passport number to include in/on the certificate is a separate question, to do with the extent to which it is desirable for the two documents to be 'linked'. In any case, the certificate generation process need not and should not touch any HMPO database – nor should it store anyone's passport number beyond the point of certificate creation.
- A vaccination in one's NHS record is not something that people would expect or want to be accessed on a *non-personal* phone. For example, civil servants with a civil service

¹³ Error rates within the vaccination programme are publicly unknown, but GPs should be able to provide some indication of the extent to which patients who show as unvaccinated on their systems (and who they then contact, e.g. to mitigate vaccination hesitancy) who, when contacted, can show that they *have* been vaccinated. We would expect this to be a tiny percentage of people in practice – but, if vaccine certificates are rolled out widely, this could nonetheless result in a significant number of ruined holidays.

¹⁴ <https://www.legislation.gov.uk/ukpga/2015/28/section/2/enacted>

smartphone would not add the NHS App to it for their own personal health records. Travel to countries where a corporate ‘burner’ phone is recommended or common practice would be completely undermined if the phone had to log into someone’s medical record or equivalent.

- The principle that UK citizens should **never** be compelled to access their own health records in order to show them to others must be paramount and protected.
 - While the Home Office might want to require that all UK entrants have an unlocked mobile phone, such desires being matched by other countries would be harmful to HMG.
- Systems related to eBorder gates must **not** be given access to NHS records.
 - British citizens at British borders do not need to have their NHS records checked for entry to Britain – we would not deny a British citizen’s return home.
 - Any eBorder gate making a decision about a British citizen is therefore by definition an eBorder gate run by another country. Allowing other countries to query British citizens’ NHS records is likely to raise a variety of risks, including cyber security, national security, and operational practicality.
- While the approach we outline could be extended for use with other vaccinations *for international travel* that are performed by the NHS, e.g. yellow fever, applying it to other types of vaccination – such as MMR – would likely have devastating consequences for both vaccination rates and the public health.
 - Vaccine take-up rates before and after the introduction of any certificate should be closely monitored; it would not reflect well if the essentially unnecessary introduction (or domestic use) of certificates were to undermine any COVID-19 booster programme.
- Assuming one is used, the basic contents of the QR code should be a URL containing a unique, randomly-generated reference – the web page for which simply states “This QR code is still valid, and has not been revoked”. If desired in future, a query string on the URL could be added, e.g. a signature of the URL itself, should a key-checking infrastructure be stood up in future.
 - To avoid duplicate certificates, if a second vaccination certificate were to be issued for any individual, the existing one should be automatically expired a few days later – long enough that the second certificate should have arrived at their address, in case the post was just slow.

In summary

Paper-based vaccination certificates in the context of a nation state's physical passport may be the least bad option, but it should probably not be widely implemented without effective mitigations of all of the entirely predictable adverse effects of mixing test-negative and certificate-carrying individuals.

The norm should be that everyone in the UK is vaccinated;¹⁵ this is better and more practical than steps which may prolong fear and disquiet about the pandemic long after the really significant danger has passed. Given the success of the vaccination programme, it may also be the real world situation prior to any certificates being available – this April will be very different to February.

Countries which do require vaccine certifications should be supported with vaccine supplies and experienced vaccinators.

medConfidential,

March 2021

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¹⁵ N.B. This is not an argument for compulsory vaccination, rather an assumption that the current vaccination programme will work.