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Home Office preparedness for Covid-19 (Coronavirus)

This report provides guidance for three separate issues to help mitigate the ongoing effects of Covid-19:

1) **NHS database for contact tracing to reduce the transmission of the Covid19 virus by alerting people – there is a significant opportunity for a general centralised database to provide for future development of apps and distributed software systems**

2) **Additional small scale localised testing of complete communities to provide an accurate picture and detailed data on the spread and immunology response for Covid-19.**

3) **Planning for a second wave (if required).**

1) NHS Database;

This database requirement is necessary for the NHS app to function. This type of central personal database would have been unthinkable before the necessity of Covid.

It represents a massive opportunity for the UK to leap forward with general technologies based on personal, centralised safely kept data. The NHS is in the best position to deliver this new data technology and licence it across the world.

I have already developed a model for this process - along with the introduction of a new business model - to provide the UK with significant new innovation opportunities for the UK as a whole.

The main points for this data process are:

- 'Open' personal data using distributed & encrypted storage
- Using blockchain logging and checking
- Specific data storage locations designed to provide data integrity, uptime, quick access, strong oversight, security
- Each data storage location keeps a blockchain log of all changes and this is cross check automatically to ensure integrity of data access changes
- Data Integrity Check systems - Mobile, sms, Location / pattern recognition, third party approval (for universal changes or level 1 data)
- Allowed usage levels for different uses / apps
- Administration via a 'new model' organisation to facilitate upkeep and oversight
- Small personal payment model to provide independent provision of data in standardised format to allow sharing (eg for an app controlling all other app's)

Implementation detail:

A person's data is uploaded and distributed to specific encrypted storage databases in secure locations worldwide. Access codes (for decryption) are held separately within each location and cross checked when used. This would mean that more than one location must comply with the data access request. Blockchain technology can be used for logging changes and access, written across all data systems, ensuring any data breach would affect all data locations with multiple security checks.

The data can be organised into access levels. This provides everything from open data to highly secure data (eg financial access information).

When an app requests some data depending on the data security level the app undergoes security checking. This may require a range of security checks such as sms messaging, location checks, third party checks.

For instance, for an app requiring personal current location information, the app would have a pre-defined encrypted access code that is checked and cross checked with another data location. This access code is pre-defined when the user installs and notification sent to the user (and third party for certain levels of data). A delay can be added before data is accessible to ensure further protection.

An app sending data to the personal database would have similar checks and 'allowed' data security levels.

World leading innovation & future applications:

The future has been rushed along due to Covid. Many more people are using and see the relevance of app's and online technology to help solve many issues and substantially improve efficiency, personal and business.

Organisational issues such as arranging meetings, or just going down the pub (eventually)

The app controlling all other apps would know who was doing what when. A brief enquiry to the app of apps via the smart interface would allow the central system to evaluate other people's engagements or whereabouts and directly communicate with their app of apps to evaluate the likelihood of this enquiry. If necessary and sensible, (eg not if the individual was potentially available), the app of apps system could ask the other people for a direct reply. Agreement would then be made between the two systems without any further intervention, updating diaries and future whereabouts. Updates would be automatically available, (depending upon set parameters), so for instance the app of apps could update its owner regarding a potential arrival at the pub and also suggest what they are likely to want to drink.

Purchasing items or services

The app of apps knows much about its owner, including pre-set requirements, current and future location, and financial information. A query to the app of apps asking it to find the best price, route, availability, would create a detailed set of possibilities. The central smart system could advise on the likely best alternatives. On selection, perhaps after further interrogation of the system, the purchase would be made, with the app of apps undertaking all communication, payment and administration necessary. The financial transaction, delivery details, timing, future notifications etc would all be automatic. For the provider, the transaction would also be completely seamless with the payment, accounting and with stock and availability systems being updated automatically. Such

integrated smart technology would also provide for huge efficiency improvements and create a true end to end personal just-in-time provision for almost everything.

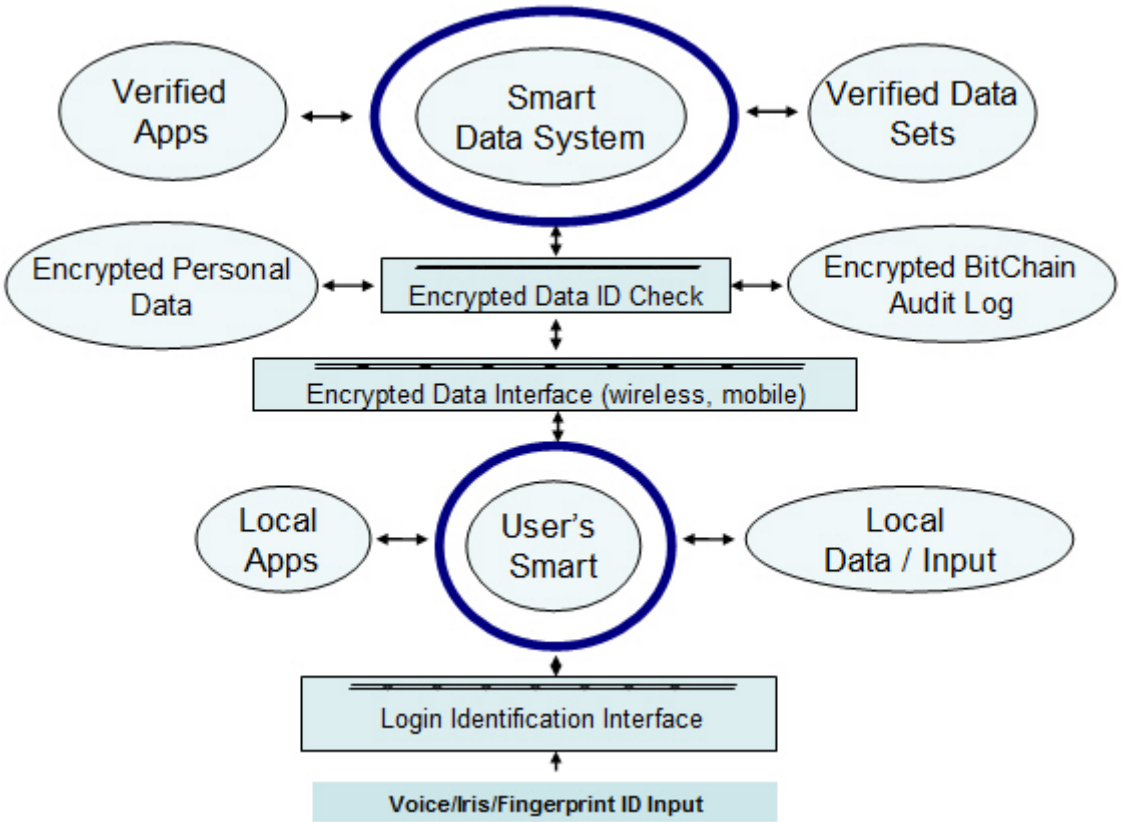
Business accounting

The business case for this is outstanding – imagine running a business where all the accounting – purchases, sales, other costs are automatically entered into a central secure database automatically by buyers and sellers, and presented as finalised accounts as well as managing VAT, PAYE and finalising business tax automatically. The efficiency savings of such a system for the UK as a whole would go a long way to paying for Covid-19.

Automating basic provisions and forward planning

Many of life's boring chores could be consigned to the app of apps. Such items such as insurance, car tax, paying standard utility bills, re-negotiating best provision of services, diary entries that require some action (eg birthdays, holidays, travel), standard purchases along with provision of basic foodstuffs and stock items, could all be dealt with and completed with little or no intervention by the user.

The app of apps could be primed to review all such provisions and check availability, price, consider alternatives and then provide timely information when a change was likely to improve provision. For instance, a forward planning system would consider the stock position and likely future stock of important items, making sure that the purchase and delivery was secured before the stock became scarce. Knowing the holiday or travel dates and likely destination, the forward purchase at best price could be considered maybe pre-booked subject to confirmation and agreed when destination confirmed.



2) Additional small scale localised testing;

The first major failure in the current testing process is the lack of small community based surveys to establish the spread of the disease within different communities.

This data surveillance would inform us about different communities across the UK. It does not require massive testing facilities or numbers as the communities chosen can be small but representative of communities across Britain.

It would inform us of the exact spread of the virus both for symptomatic and asymptotic cases by age by gender. It would inform us of the morbidity rate in different age, sex, economic and ethnic groups.

If this testing included both a current virus test and an immunity test it would also enable a good approximation of the spread of the virus and immunity within specific types of communities.

Secondly, in Addition:

The current research and data collection methodology has not provided for good surveillance for Covid-19. The lockdown changes these requirements completely.

We need to know where the ***new*** cases are coming from. Currently published data, shows only partial information which is spilt into institutions such as the schools, prisons and care homes.

This means we do not seem to know accurately where the new cases are coming from. This is critical for ongoing analysis that should inform the unlocking phases by highlighting where the disease is spreading. The fact that we do not have this data seems to be very poor implementation to date, the UK seems to be relying on old models not suited or adapted to Covid.

For instance, if we knew what the split was; of locked down households versus key and other workers and how these individuals were likely to have contacted the virus, we would be in a much better position to adapt the plan moving forward.

Thirdly;

The third failure is perhaps a lack of publication detail. I cannot establish accurately the morbidity by age and by gender of UK people who have ***no*** underlying health conditions. This is crucial to all endeavours to tackle this virus and keep the economy going.

3) Planning for a second wave (if required);

The current plan makes little differentiation between those at significant risk and younger healthy people who's morbidity rate has been shown to be small. In my opinion from viewing the general data, it is likely that the virus will continue to spread and if this spread begins to become too wide that the NHS cannot cope or where there are too many

deaths within older people or those with some underlying health issues (not those already listed as at risk), it is likely to be deemed irresponsible not to lockdown the whole population again.

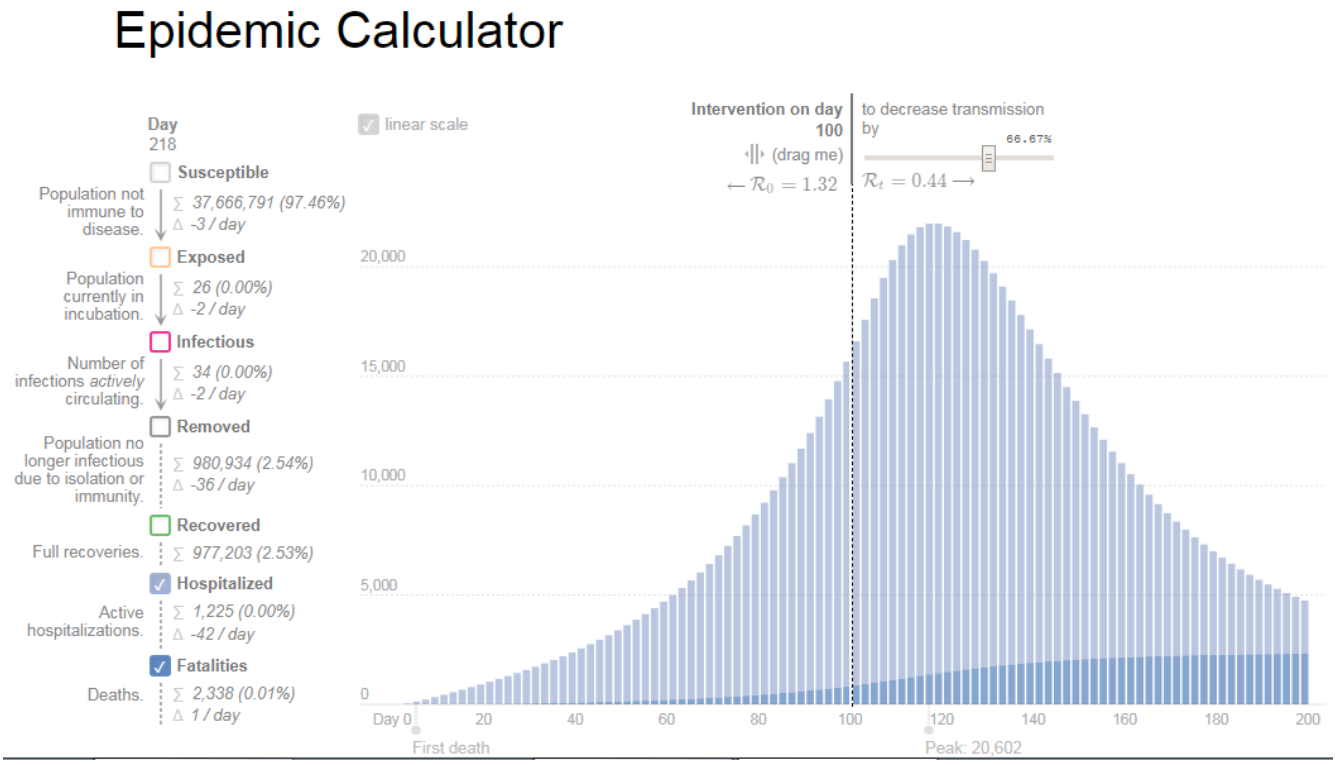
So, if there is such a significant second wave of disease - there needs to be a thought through response – rather than a return to complete lockdown.

This is most important for the economy as well as limiting the death rate, especially those who are already known to be at a much higher risk. **We already have enough data to show that most deaths occur in people who have other underlying health issues. The more general underlying issues that have a much higher death rate are; obesity and smoking. The risk is linked to age also.**

So, viewing the data it is clear that younger, fit, healthy people who are not obese and do not smoke are very unlikely to die of covid-19. **Stanford University has published a review of such data and they conclude that the likely death incidence of such individuals up to the age of 65 is no more than a few weeks or months of normal vehicle driving.**

The plan that should be put in place must take this data into account. I have already published such a plan (ignored by the government even though it was sent to the cabinet office by my MP, Rob Butler). This is the outcome of a plan based on under 50 years olds who are fit and healthy (not obese and do not smoke):

It limits the hospitalisations and deaths due to Covid but allows the economy to continue to function. It also has the ability to provide for herd immunisation.



The second wave plan for Healthy under 50 year age group:

- All healthy people under the age of 50 who are non smokers who are not obese (BMI to be defined) should be completely unlocked

- All people in this age group who lives with older people or people with underlying health conditions, smoke cigarettes or obese should isolate completely as in the original lockdown
- Key workers who are over 60 with underlying health issues should be asked to join the new lockdown
- All employees should still work from home whenever possible
- Social distancing should be maintained whenever possible
- Restaurants, pubs and all other social businesses should open without specific restrictions for social distancing
- Businesses that can manage social distancing should do so
- Schools and educational establishments should all open, subject to the staff being able to cover

People 50 and over or with health conditions

- These people should isolate until safe – that is when either there is a low level of infection and good tracking of individual carriers or there is a vaccine (also applies to smokers and obese people).

The age cut off has been set at 50, but as the data improves this should be changed to provide the best case scenario for the economy vs hospitalisations and likely death rates.

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