

BIVDA Position Paper:

Grasp the infrastructure legacy of the Pandemic to achieve Early Diagnosis of Disease

Intro / Summary

The SARS CoV2 pandemic has brought the value of In-Vitro diagnostics and correct diagnosis into public awareness like no other time. In addition, the Nation's in vitro-diagnostics capacity - both within the existing NHS Infrastructure and outside of it, have been considered and invested in at unprecedented levels, leaving a post-pandemic legacy of potential In-Vitro diagnostics scale testing capacity as never before.

The in vitro diagnostics capacity we have at hand, created by virtue of the investment in SARS CoV 2 testing infrastructure affords the Public Health of the Nation a unique opportunity should policy makers choose to grasp it. That opportunity, at a relatively modest cost, is to improve early diagnosis, thereby improving the nation's burden of morbidity, avoiding unnecessary mortality and avoiding cost .

It therefore is our position that this new National Asset be leveraged to achieve the stated objectives of the NHS long term plan (2019) around early diagnosis and as a feeder into achievement of a key aspect of the Policy paper **The future of healthcare: our vision for digital, data and technology in health and care (2018)**.

NHS Strategy and early diagnosis

The NHS long term plan, published in January 2019, states:

“(3.63). We will extend the use of molecular diagnostics and, over the next ten years, the NHS will routinely offer genomic testing to all people with cancer for whom it would be of clinical benefit, and expand participation in research. The NHS will begin from 2020/21 to offer more extensive genomic testing to patients who are newly diagnosed with cancers so that by 2023 over 100,000 people a year can access these tests.

(1.4). the NHS will increasingly be: more proactive in the services it provides. The majority of initial medical contacts with the NHS occur when a patient calls NHS 111 or 999, or visits their pharmacist, GP practice, A&E or Urgent Treatment Centre (UTC). At that point the NHS response kicks into action. But increasingly we are supplementing that with the move to ‘population health management’, using predictive prevention (linked to new opportunities for tailored screening, case finding and early diagnosis) to better support people to stay healthy and avoid illness complications;”

The future of healthcare: our vision for digital, data and technology in health and care (2018)

“For example, we could use more data-driven technologies such as artificial intelligence (AI) to help diagnose diseases or conditions and to gain better insights into treatments and preventions that could benefit all of society”

The time is now

As a nation, we have demonstrated the ability to mobilise population scale structured engagement with the health system by virtue of the vaccination program. Many believe future vaccination events against SARS CoV2 will be accompanied by patient sampling with the objective of understanding vaccine efficacy through assessing individual immunocompetence. We believe taking an appropriate set of samples at this health system engagement for the purposes of screening and /or assessing the health of individuals, would represent an opportunity to create a leap forward in the public health of the Nation. At the least this sampling and testing could capture indications of undiagnosed chronic disease that can be treated and monitored, rather than wait for acute secondary care admissions that we know cost several times more (long-term conditions (pre COVID) account for over 70 per cent of all inpatient bed days, typically as a result of ineffective diagnosis or monitoring of those conditions).

Far reaching consequences

A national effort in the direction of greater testing, leveraging the legacy of SARS CoV2, has further positive consequences:

1. The NHS could begin to transition into more of a health service rather than a sick service
2. To correct atlas of variation, particularly around those disease areas where health inequality is most seen, such as in liver disease.
3. Understand and prioritise resources in the local health economy

As a public health data collection exercise, this effort would be unparalleled. If certain parts of the newly created infrastructure, (for example the Lighthouse Lab network that are designed for testing at scale), were to test these patient samples, the patient data lake that would be provided that would be easily accessible and in a common format, would enable AI experiments to be run to understand disease more deeply at a population health management level.

This exercise would have the opportunity (especially if testing was continued longitudinally, at a routine frequency) to create new insights into disease progression at a highly nuanced level often missed when similar patient cases are analysed in a fragmented fashion - and the optimised treatment regimens to be followed. The Government's own policy direction summarises it best:

The future of healthcare: our vision for digital, data and technology in health and care (2018)

“For example, we could use more data-driven technologies such as artificial intelligence (AI) to help diagnose diseases or conditions and to gain better insights into treatments and preventions that could benefit all of society”

The establishment of this at a population-wide level would be the envy of the world and has potential to create clinical intellectual property for the NHS that would be of enormous value.

Adoption of Novel technologies

At no time than during the pandemic has innovation in the sector been stronger, in many cases world firsts originating from these shores.eg end point PCR.

The mechanism for adoption of novel testing technologies has been very specific to the pandemic with a direct and fast -tracked mechanism of innovation – assessment and adoption. Outside of the pandemic however, the route for realisation into practice of novel technologies for early diagnosis is slow and adoption success is not guaranteed, limiting the viability of many development project from the outset. Even if data generated from the performance of new devices or tests is approved by the National Institute of Clinical Excellence, there is no compulsion to utilise these methods. This is evidenced by the case of (Helen need example here).

In Conclusion

It would be a missed opportunity for Public Health improvement if in-vitro testing infrastructure investments made as a result of the pandemic were either not used, or were considered as greater capacity to compete with the routine clinical provision of diagnostic tests. We would urge that a new mandate for testing to create earlier diagnosis, leveraging the infrastructure created recently would contribute to the health of the nation and would represent a positive legacy from this pandemic that otherwise has done nothing than cause harm, loss and death.