Written evidence from Dr David Pao

Late submission after HSCC committee visit to Plymouth
February 20th 2019

From: Dr David Pao
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Who am I?
I am one of the consultants in sexual health at Derriford. I presented our Sexual Health in Plymouth (SHIP) digital service and vision when the committee visited Plymouth on 11th February 2019.

I am studying for a PhD in Design in the department of Innovation Design at the Royal College of Art in London¹. The RCA has consistently ranked top globally for the postgraduate study of art and design, according to the QS World University Rankings (2015 - 2018)².

My research at the RCA focuses on the fragmentation of service provision in sexual health and how real-time, granular data design can be the glue that not only holds the system together, but beyond that create a sexual health system more effective and efficient than ever before.

I have another postgraduate research MD (2012) from UCL. If this thesis was about anything, it was about the groundbreaking benefit that real-time, national data would have in reducing the HIV epidemic. It focused on the phylogenetics (viral fingerprinting) of HIV transmission and concluded that the UK HIV MSM epidemic was fuelled by those very recently infected with HIV³. From this it can be argued that a combination of PrEP with a real-time, phylogenetic HIV Partner Notification could be transformational.

A design approach to Sexual Health
As Albert Einstein said, 'We cannot solve our problems with the same thinking we used when we created them.'

I have read most of the submissions to the committee and watched the panel broadcasts. Whilst most of the sentiments expressed there are accurate, urgent and relevant, they come very much from the distressed, desperate ‘coal face’. To make a real difference however, we need to look at the fragmentation of sexual health services from a fresher, collaborative, future-facing perspective to answer your question ‘what can we do to help?’

Disruption and fragmentation is affecting sexual health more than many other NHS specialities. But sexual health care provision has always been the imperfect solution, not only because of limited funding but also because of the nature of sexually transmitted infection (STI) networks, which propagate exponentially. Rapid, accurate partner notification and treatment has always been the goal, but this has never been easy to achieve.

My main argument in this submission is that sexual health is mostly stuck in an Industrial Age mindset, whilst almost every other area and discipline (retail, travel, banking, avionics, even wellbeing) has well and truly transitioned into the Information Age⁴. Data is the glue to hold a fragmented system together, and data needs to be designed.

A future-facing system for the Information Age means sexual health and contraception services focusing on the conversation between every stakeholder, from every viewpoint and every network of viewpoints - including PHE, BASHH, BHIVA, FSRH, integrated sexual health providers, 3rd party and disruptive providers and of course, patients. This necessitates real-time, fully granular data on a national level that is appropriately accessible by each.
A simple view of this ‘sexual health ecosystem’ is shown in Figure 1.

**Figure 1: Full granularity, designed interfaces for all stakeholders from PHE to patients**

A salient example of being stuck in industrial era dysfunctionality is the GUMCAD / SHRAD coding system that PHE relies on - anachronistic, clunky, crude and dependent on commercial EMR software companies and clinicians coding correctly, often months after the event. No single stakeholder in the ecosystem benefits from this way of doing things – it wastes considerable time and is rife with clinical errors.

A specific example: we code gonorrhoea as ‘B’ with the anatomical site, but there is no information sent on antibiotic sensitivity of culture results, specific treatment given and a myriad of other critical bio-psycho-social data. With a well-designed national Electronic Medical Record (EMR) system for sexual health the same high resolution, granular data stored therein could easily be made available in a format relevant to each stakeholder.

**In Summary**
This inquiry into sexual health by the HSCC is a golden opportunity to exploit ‘digital’ and launch us into the Information Age. This could be transformational rather than retrograde evolutional.

Data are the glue that can not only hold fragmented services together but also create a future-facing landscape that embeds clinical and public health medicine at the heart of patient care.

Digital can be better, not just a ‘lite’ version, of face-to-face care - but digital needs to be designed.

Medicine can be complex, as can be seen by the failure of the *NHS National Programme For IT*. Sexual Health and contraception is much less complex and more manageable, and goals more achievable. We are a small, engaged ecosystem and success here could represent the forefront of digital medicine worldwide.
Clinicians in the system often do not know what is possible because by definition we have a limited viewpoint, and workforce reality means we are stretched beyond any creative usefulness to envision a broader one. If offered a well designed, truly future-facing alternative, just a seed of one, I am sure we could begin to create a world-class sexual health system in this country and beyond.

The Scottish National Sexual Health (NaSH) programme, which has at its core a central EMR system, would be a good starting model for this, although it could be designed much better.

I believe what is needed is the move to a central EMR system and some investment in a design-led approach to sexual health data management. Then the primary advantage of the Information Age could be manifest – that is the ability to infinitely and immediately share information without degradation and loss of quality.

Dr David Pao

February 2019

1 https://www.rca.ac.uk/students/dave-pao/
2 https://www.rca.ac.uk/news-and-events/news/rca-worlds-top-university-art-design-fourth-year/