The analysts’ manifesto

Declaration

We, the undersigned, as healthcare analysts, wish to make plain our wishes to be given tools and freedoms that we do not currently enjoy. With these tools and freedoms we can work in new and better ways, and we outline here also our vision for the enhanced contribution that we can therefore make.

Data is a core business

We believe that data is a core business of the health service. Since Florence Nightingale, and even before, collecting, collating, analysing, and reporting on data has been key to the success of designing and delivering high quality health services. We believe therefore that the expertise to collect, collate, analyse, and report on data should, for the most part, be fostered within staff in the NHS itself. Contractors from outside of the NHS should be used sparingly and every effort should be made to ensure that any code or algorithms produced inside or outside the NHS, if it is funded by the NHS, is free for any Trust (and ideally anybody anywhere) to reuse. Different parts of the NHS paying outside agencies for similar software and the duplication of analytic and software development work between Trusts is very wasteful of public money as well as retarding the pace of innovation across the system and should be avoided except wherever possible.

Board representation

Because data is a core business of the NHS we believe that the current representation of issues relating to the collection, collation, analysis, and reporting of data are insufficiently represented at board level at the current time. Board members themselves frequently understand issues around finance and clinical governance much better than they do those about data. Board members at many organisations require training and support with data related issues and we call also for the mandatory instatement of a chief data analyst at every NHS board in the country. Ideally we believe these individuals should be professionally registered either with APHA or the Faculty of Clinical Informatics and they should be responsible not only for advocating on behalf of data functions within the NHS but also for bringing a data perspective to bear on a wide range of issues that come to board.

Trust

Healthcare analysts have a wide selection of hard skills, such as working with databases, programming, statistics, and machine learning. They also possess soft skills (report writing, presenting, liaison with clinical and managerial staff) and are required to explain sophisticated technical and statistical concepts and analyses in language which is accessible by non analysts throughout the healthcare system.

We demand the right to self-determine, in collaboration with the originator of a request, the methodology used to analyse and report on a set of data. It is vital to our integrity as professionals that we resist unwarranted attempts to over-simplify (or over-complicate) a particular analysis, based on the whim of an individual who is not a trained analyst. Further, we demand the right to refuse to provide particular analyses based on our judgement of how misleading or futile such an analysis might be, providing of course a well reasoned argument about the weaknesses of the approach and suggesting an alternative methodology which will produce robust conclusions.

Careers

Because of the profusion of highly complex technical subjects within the remit of healthcare analysts, we demand a career and pay structure that rewards sophisticated analytical work (such as machine learning, natural language processing, and statistical analysis), allowing analysts to specialise as analysts, and not be forced onto a management track in order to progress their career. Machine learning approaches (especially, e.g. text mining) are advancing rapidly and we need to celebrate and retain those who specialise in these and other highly technical skills. Without this, the NHS will continue to lose talented analysts to the private sector, which is happy to pay a premium for those with the right skills.

Tools

To give analysts the ability to rapidly analyse and report on complex datasets, they need the correct tools. Healthcare analytics, and in particular data science, is a fast moving field. We have heard reports from all over the country of analysts who are unable even to access an install of R, which is not only free but is also widely used not only at other bodies interested in UK Health services (such as the Health Foundation) but across many high performing organisations where data science is carried out (Google, ebay, NASA, Astra Zeneca). Restricting access to this tool, particularly considering that it is free (and especially considering the grotesque amount the NHS squanders on proprietary software) is absurd and we call urgently for all healthcare organisations to facilitate their analysts’ access to this and other free software. Even where software is made available, there can be a great deal of burdensome bureaucracy which can stop analysts from accessing tools for months at a time. IT departments do not understand the risks involved in giving their staff access to these tools and, moreover, do not trust their staff not to misuse these tools. A malicious member of staff can wreak havoc on the lives of hundreds of vulnerable people using nothing more than an encrypted memory stick and does not need a Python install or any other sophisticated software to do so. To work effectively, analysts need to be invested with the trust that our profession has earned.

Training

We have heard reports from all over the country of the woeful state of training offered to analysts. NHS organisations often offer internal training only in Excel and they can be very reluctant to pay what can be high fees with external training bodies. If healthcare analysts keep doing the same things they will get the same results and failing to offer training to our staff further entrenches the advantage that the private sector has over our own analysts. This is a false economy in the long run and healthcare organisations ended up paying for the training of private sector employees through exorbitant consultancy fees paid to external analytic agencies.

We call for better funding of training for analysts but, in particular, we call for the NHS to get better at nurturing and growing its own staff. Looking across organisational boundaries there are analysts across the healthcare system with high level skills in deep learning, text analytics, statistics, and more. The NHS needs to allow these individuals to collaborate and learn from each other, as well as to disseminate their skills to more junior staff, whether that be through internal offers of training, mentoring, seminars, working groups, or any other means of bringing analysts together.

Data sharing

As analysts we are frequently hamstrung by issues relating to data sharing. We completely acknowledge the need for strong safeguards to protect patient data and consider ourselves to be champions of good practice in IG across the organisation. However, we remain frustrated by data sharing agreements because they continually lag behind what could be achieved in practice owing to a lack of will and time on behalf of senior leaders in healthcare. We call for urgent action on data sharing across the healthcare system so that we can make use of the colossal amount of data within the NHS and turn it to the benefit of patients rather than sitting in silos, frustrated because we know how to produce analysis and reports that would benefit the system but are prevented from doing so by inertia on the part of senior bodies in the system. Further, we call for better understanding of IG and data sharing across healthcare organisations, particularly at senior level, because we remain frustrated that the issues are not properly understood and therefore managers give over cautious responses to reasonable requests to share data.

Types of work

Healthcare analysts still spend a lot of their working life responding to badly formed and often futile requests for data and analysis which will not produce the desired result. These requests can come from all levels of the system, from individual clinicians all the way up to commissioners and NHS England. We call for urgent action on this issue and for interested parties in the healthcare system to review both the routine and ad hoc data requests which they are making of healthcare analysts and asking themselves if they deliver the same value as the analyst is capable of delivering when working in a more self directed way. At all levels of the system, senior leaders need to think critically about the type of data and analysis which they are requesting and listen to analysts who tell them that they are either badly formed or pointless. At the same time, senior leaders need to empower analysts to refuse to carry out particular types of work, or at least to strongly put the case that these data extractions and analyses are of low value and suggest an alternative.

Our offer

We, the undersigned, also pledge to drive standards and adoption of analytical techniques in healthcare and we publicly resolve to improve the work of healthcare analysts everywhere in the system. To do so, we will strive toward the following principles.

Documentation

Steps undertaken in the extraction, analysis, and reporting of data must be clearly documented. Any code or analytical technique used in the preparation of a report must be readily available for audit, and we resolve to help other healthcare analysts to encourage, rather than resist, attempts to ensure the quality of their work.

Our involvement in decision making

Healthcare analysts have skills in survey and experimental design, as well as in signal detection and QI methodologies. We work most effectively when we are involved from the outset with projects involving data. We hereby resolve to make ourselves available to decision makers and to provide practical and easy to understand advice about how to structure investigations in order to ensure that conclusions drawn from evaluation, research, and audit are robust. Further, we can provide practical assistance in deciding whether ethical approval is required for particular forms of study, and can assist in the application itself where it is necessary.