AGGREGATED OUTPUTS FROM WORK GROUPS – FROM WORKSHOP TO DEVELOP AN ACTION PLAN FOR WIDER APPLICATION OF OPERATIONAL RESEARCH AND ADVANCED ANALYTICS IN UK HEALTH CARE

Held at The Health Foundation (London) on 6th Oct 16.

CATEGORIES		Local and Central Govt. (*facilitator: Geoff Royston*) Providers/Commissioners/Decision Makers (*fac'r: Ruth Kaufman*) Analysts and Modellers (*facilitator: Sally Brailsford*) Other Groups – see end of document (*facilitator: Martin Pitt*)	Improving Communication (*Geoff Royston*) Stimulating Demand –*valuing & understanding* (*Ruth Kaufman*) Resources and Tools (*Sally Brailsford*) Building Capability and Capacity (*Martin Pitt*)
Core	**Sub**	**Problems**	**Solutions**
STRUCTURAL	**Resources**	Clinicians do not consider resource constraints Lack of in-house resource. Decision Makers time is not always available to provide data, discuss issues, effect implementation. Not enough capacity for non-firefighting *Budget pressures (no money!)* Modelling can be seen as a luxury in times of austerity when something has to go: choice between modelling and front-line care?	Funded support for cross NHS-University secondments in OR and analytics. Action – grant apps. By research orgs. Examples: PenCHORD – HSMA programme, CORU embedded researchers etc. Incentives for work that leads to sustained improvement (award, funding other resources). Could be from NHS England, Research Councils, third sector): (T*om Woodcock)* Encourage Networking. Pay for conference attendance. Sponsorship Pot? Host seminars and visits. Senior manager/analyst teams. *Sarah Deeny* Develop a multi-centre programme grant on 'OR' systems improvement or sustainability [academics]; ORSoc (?) to promote valuing of implementation by research councils (Stephen L); Re-evaluate NHS KSF to make recruitment of Operations Research staff – attract staff at right pay level Give opportunity to build a good career in OR in healthcare – make it more attractive

STRUCTURAL	**Infrastructure**	NHS very hierarchical Centre does not set standards for analysis Missing pieces of national work on key issues Too much use of analytics expertise for quality assurance rather than quality improvement. Environment changing all the time Not obvious how to find the 'right' academics. *Conflicting objectives between NHS and academia.* Academics (or MSc student projects) can be perceived as consulting "on the cheap". A lack of 'sales ability' in academia (we are not consultants or software developers). Academic career pathway can be unclear (tension between research papers and case studies). Defining research questions are by-passed too often. NHS stressed – focussed on firefighting rather than planning Contradictory objectives across different levels of the NHS Lack of a nationally recognised framework for implementation of OR/AA methods (the is no 'NICE' for service re-design)	Al workshop participants to collaborate in advocating the development of a single national agency to develop consensus and guidelines for the use of OR/AA in health service organisation/management. e.g. a NICE for health service management Look at the analysis stream on the NHS management program Centre to set the tone for what analysis is required Establish multidisciplinary teams to work on problems. NHS Wales-Delivery Unit (Julie V) NHS England-OR Soc, Health Foundation, MASHnet. NHS England establish joint fixed term appointments between in-house analytical teams and academia (Stephen L) Form user groups with customers Get OR onto the Board /SMT, to lead by example, and/or to challenge the Exec. Team to develop OR techniques to answer the big problems Use existing structures to (continue to?) raise awareness of and promote O.R.: CLAHRC, STP… NHS England to have a single post responsible for use of OR/modelling across health and care, in order to promote measuring and monitoring of the extent and quality of analytics/modelling activity NHS England/DH to create an annual award for work by analysts that has had the high impact on policy and practice (local/national) What research is needed? – what tools, resources etc. Who: MASHnet **Regulation**: DH to extend requirements of Macpherson review to NHS Organisations (Stephen L) Have a clear line of sight for a central pathway from front line to the board. [Professional bodies]. (Paul Stronor) Every NHS trust/PCB to employ a chief analyst [NHSE/HF/PHR] (Paul Stronor)

STRUCTURAL	**Data**	Collection of data No national leadership on data Data has become a regulated commodity Clinicians "own" data but don't value/collect it *Lack of data* Good enough data vs poor (or no) data **Data:** Data provision – Info. Governance barriers, variable quality, problems with timeliness and relevance	Data should come back to people who record it. It should not just 'feed the beast'/ (government). Action: information team. Make useful tools and techniques for download and use by healthcare analysts via website (eg. AphA or other site?) – where possible (eg Excel based tools, By: anyone who has developed a useful too. Question – who would fund this? – Is there resource in NICE to use appropriately? Local data ownership. Create a two-way street. Do an OR/analytics plan/strategy. (DH, NHS) Crowd source personal data (universities). *Sally B* NHS Firewalls –enable dropbox, twitter etc. *Julie V* Ask NIHR about issues accessing data – barrier to research. Who: HF or someone else important in the room. Whole community to push for better access to data e.g. data lab provision by NHS digital. *Stephen L -See comment re NIHR powerful if also from NHSE* Lobby NSCIC/NHS Digital about being less restrictive on sharing the data they hold. When: ASAP. Who: all those working on research to improve patient care. Seek agreement from senior decision makers (? Who) to make it easy to get access to recognised data in order to speed up research;
STRUCTURAL	**Time pressures/issues**	Dealing with the urgent Interventions rolled out before analysts can get involved Analysts and DM don't have shared view of what's possible in time Not enough time for DMs to think about analysis *Need a solution next week* Academics not set up for rapid response. Insufficient analytics capacity to meet the needs within required time scales *No time to model (always fire-fighting).* Modelling is a long-term investment. 'Feeling we are changing engine mid-flight'; general lack of long-term planning in NHS organizations. Modelling takes too long. Analysts and modellers need more time to do a good job than NHS orgs are prepared to give. Timeliness – short-term decisions always required quickly. Lack of responsiveness within research community to pressing issues (timely responses) Lack of patience in allowing solutions to take hold Too much short-termism in NHS planning – how to overcome this?	Allow time to develop trust e.g. Aneurin Bevin embedding

CULTRAL AND ATTITUDINAL	**Politics, Culture, incentives**	Yo-yo between a focus on process and on outcomes Wrong questions asked Silo working – single organisations pursuing problems in isolation and not sharing working out or outputs. Low risk appetite. Intolerance of making mistakes and learning – then moving on. Culture. Senior decision-makers inadequate understanding of OR/analytics Reward 'for doing' not 'doing the right thing'. HC are resource focussed not problem focussed. No consistent view on what we are commissioning (or should be asking for) Poor planning (sometimes) *Decisions driven by 'headlines'* Some academics not interested in context, politics etc. *Lack of trust (in models and modellers).* External consulting firms can be preferred for 'difficult decisions' – i.e. where the Trust/CCG management know there will be an unpleasant or unpopular solution and want to pass the blame for the decision on to an external body. There is a fear of not succeeding - stick to tried and test methods even when we know they don't work, and an over-reliance on what has been done before even if it hasn't worked. *Too dependent on personal relationships.* Few modellers take the time to build relationships with healthcare and vice versa: knowledge transfer is too dependent on individual relationships. Academic modellers are unknown to many healthcare professionals. Patient views are not often incorporated;	Attack silo working Develop different models of working

CULTRAL AND ATTITUDINAL	**Recognition**	Analysts traditionally seen as admin/clerical - Clinicians more highly regarded Limited brand recognition of OR suppliers DMs don't always know enough about system they're commissioning for. Commissioners/providers don't know what is possible. 'OR' is not well-understood (contrast to 'econometrics' or 'PWC') Academics not rewarded for using standard methodology. Academic objectives clash. *Decisions are at least partly 'political'* Unresponsive academic sector *Modelling and OR approaches not seen as valuable by senior management.* Lack of senior champions, and poor visibility of modelling generally in senior NHS management. Modelling is seen as a 'technique' not a solution. Poor appreciation within service of value of OR and A.A. methods Poor at getting engagement from NHS	**Build long term relationships with customers** Engage with operational managers e.g. Sheffield TH work with Director of Operations to understand their perspective Build relationships with AHSNs/other relevant bodies and develop a PLAN (Ester Giles) Build long-term relationships between OR researchers and CEOs for modelling in healthcare. **Improve "marketing" of analysis** 'sell' analytical insights e.g. to patient safety collaborative NHS England to run 'what is the point of analytics?' Ask customers what they most need Find a different strap line to 'OR' something that sounds more practical. [OR Society] Publicising 'high bangs per buck' analytical work. Conduct a survey of actual commissioners and providers as to why OR is not used much [AphA/MASHnet] Share exemplars of good practice more widely
	Proof of value	Business case not good enough Not enough business case evidence to justify cost. Not enough evidence of effectiveness of OR on costs/quality. Insufficient analytics consistency OR perceived as too expensive (not value for money) Need to change mind-sets about the value of modelling and simulation	Intermediary between OR/analytical community and health service to 'sell' value. [AHSN?, NHSE?] **Enhance incentives for good communication about analysis** Have a high profile national award for the best OR [MASHnet] NHS England/DH/HF to create an annual award for excellent communication of analytical work or concepts. N.B. AphA analysis prizes Incentives and prizes for communications of influential analysis (Charles) Provide business case evidence, by focusing on evaluation of OR interventions Work through business case

SKILLS AND COMMUNICATION	**Communication, Networking, Co-ordination**	Solutions can be too unidisciplinary Solutions not pitched to short –term needs Poor communications (leading to ineffective use of analytics), caused by Inability of analysts generally to communicate Lack senior analysts to be in the room, translate between analysts and analysis commissioners Not enough collaboration: sharing ideas; sharing data; 'one vision' No shared understanding of good analytics commissioning. Lack of engagement: problem definition and analysis are foreign concepts to many healthcare decisions makers. Fragmentation and isolation of modelling groups, no support network for in-house modellers. Poor communication from OR/AA research community to decision makers and wider community Lack of co-ordination between OR/AA researchers (lack of synergy, sharing, too much re-inventing wheels) Language of discourse is often dysfunctional (needs to be made accessible) Lack of access to OR/AA research (unfamiliar relative to using commercial consultancies)	Focus on collaborative work on common problems **Enhance intermediation between analysts and managers** Develop 'hybrid' managers who understand analysis Problem owners work up a plan for joint working Someone in OR community to take responsibility to link to commissioning ('account manager') National Information board should be developing capability Academic units to look at accessing commissioning for framework agreements (Stephen L) **Develop networking between key stakeholders** Reach out to work with other networks e.g. AHSA information network, East Kent Business intelligence Post queries on internet forum – e.g. AphA. Have some formalised way of networking between analysts from different disciplines. Bi-annual joint meeting? [responsibility of all] Facilitate joint workshops OR, economists, statisticians, etc. (Andy H) Commissioners hold open information events to give access to academics to understand issues. Create requirement for universities and hospitals to declare their links with one another for OR (Marc Farr) Networking events bringing together NHS clinicians, managers and government. Develop MASHnet+ Shared posts between academia and service delivery. Who -CLAHRCs, AHSNs, EXECS, provider organisations. **Enhance mutual awareness and understanding** **Make publications more relevant and accessible** Normalise publication of analytical work to portal [OR Soc) (Stephen L) Develop and make available a set of case studies to promote OR [MASHnet] What about the media? Design and write impact cases – academics e.g.Dave Worthington E.g. Quality observatory *Create a 'healthcare knowledge transfer network' so potential users know where to come:* Create/publicise areas of excellence in use of data/OR (across public sector) to show what 'good' looks like and potential impact Create Menu/smorgasbord of techniques/tools; people who can use them; problems they can help with

			Identify a small number of key problem on which the O.R. community can work collectively Develop a single toolkit solution for a typical problem, eg acute hospital A&E staffing Identify general problems such as patient flow analysis and modelling, highlight AA/OR role; illustrate different AA/OR contributions and benefits; deliver by collaboration of NHS analysts and academics Productise (simply) OR models. Continue to encourage embedding of researchers in healthcare and social care organisations, job swaps between academics and NHS organisations, improvement teams including modellers. Organise a meeting like today's focused on (attended mainly by) commissioners and providers. Map the landscape. – which local NHS orgs, trusts, etc have an OR resource. Who: Us (asap). Create a taxonomy of common health care delivery problems amenable to OR/AA Identify & develop analytical communities of interest around specific issues (NHSE) *Charles T* **Communication and Co-ordination:** Launch bank of analysts to share and collaborate (eg via linked in); **Secondments and placements**: An infrastructure to support co-ordinated secondments between central and local systems (ALBs) (Paul Stronor); Explore feasibility of embedding analysts in policy/operational teams. (Andy Harvey); NHS placement/sandwich years/terms for MSc/BSc Students or Marth/Stats/Eng etc. [CCG/CSU/UNIs] (Sarah Deeny}; Time/Space for analyst in service (CSU/CCG.FT) to develop longer term subjects, innovative new ideas. – Undergrads, students/fellowship/ Grads/ [Funders and Service] (Sarah Deeny); UK student placement with NHS org – links with relevant MSc. [Universities and NHS England]; Develop new relationships with experts. Eg. secondments, research in residence, joint posts [NHS and Academics] (Mark Bond)

SKILLS AND COMMUNICATION	**Capability and capacity**	Analysts not trained in soft skills Managers not educated about analysis Few/no senior managers with OR/analytics background No plan/strategy for OR/analytics Analysts fragmented No career planning for analysts Chief Info Officers focus on IT not analysis Lack of appropriate software Lack of opportunities to scale up analysis NHS Analytics community needs upskilling Not enough analytical capacity within the system. Lacking craft skills on methods to know what we are being given and how to exploit it. Academics may not understand NHS delivery. *Lack of in-house capability*. Lack of trained people at all levels: Analysts are too focused on daily business and reporting. There is a lack of knowledge of what OR can do, and lack of technical ability of analysts and operational managers to use and develop data in to models. The split of mind-sets between data and narrative (quant and qual). In general, a lack of skills/training opportunities for analysts, and a poor supply chain of trained modellers. Lack of numerate skills across other NHS staff. Lack of capacity and capability in the NHS Lack of understanding of basics amongst health and care decision makers Lack of understanding of benefits amongst health and care decision makers Lack of proper problem structuring	**Develop communication skills of analysts** Make the 'softer skills' a feature of competency frameworks (professional bodies) (Paul S) Help analysts get into manager's mindset Develop a career path for health analysts (like in finance) **Improve non-analysts understanding of analysis** Develop an "Everything you ever wanted to know about OR but were too afraid to ask" primer that is entertaining, informative and useful [MASHnet] Develop better understanding of role of system modelling in healthcare e.g. in mental health e.g. Simon Dodds work with Christmas 'FISH' (A Komashie) Upskill entire patient facing workforce e.g. to be better able to discuss health risks Incorporate analytics/OR into management development, so that managers understand the value of OR. Specifically:Operational Analysis is a module in army officer training at Sandhurst (Martin Caunt for more info): There is already a unit in NHS-E talking to the management trainee scheme about this, and [proposals for an NHS analytics training programme?] (Stephen Lorrimer for more info) CLAHRC Wessex research in residence model for evaluation: Interested parties could go and see examples of where it is done better elsewhere (Martin Caunt) **Training:** Offer training/workshops across areas/regions in analytics in healthcare [AHSN, universities, CLAHRCs, AphA, MASHnet] Free 12-24 month accredited training programme for NHS staff (simulation/analysts) etc; Teach managers to problem solving approaches Workshops targeted at senior level health service staff [CLAHRCs]; Deliver cheap (or free) training for analysts (Univs must be less avaricious) – Sally B. Provide training on 'what OR can do and what it is, to build capacity. Action: Operational researchers; Develop a training scheme for analysts/senior analysts and would involve moving around the system to understand it as well as offer skills. (Sarah Deeny) [we should do this together] **Information and Guidance:**; Develop good practice guidance (re: methods /analysis /dissemination) drawing on examples such as those developed by ISPOR/SMDM [AphA/UK ORS/ MASHnet];; **Curriculums and Certification:** Healthcare Analyst 'certification'. Eg. PenCHORD, Cardiff. MOOC.; National backed CPD curriculum around analytics. NHS England, Universities.; STP launch analyst Development Programme (Marc Farr)

OTHER STAKEHOLDER GROUPS IDENTIFIED:

- Citizens – people/patients
- Third sector organisations
- Think Tanks
- Clinicians
- Other NHS staff (mgmt. etc)
- Commercial sector – consultancies
- Commercial sector – software/tool developers
- Commercial sector – Tech and Pharma
- Researchers
- Research Funders
- Regulators
- Decision Shapers (eg media)
- Advocacy Groups
- Politicians