Building Rapid Interventions to reduce antimicrobial resistance and over-prescribing of antibiotics (BRIT)

Stakeholder meeting

25th May 2017

Summary

There is major interest in reducing the prescribing of antibiotics due to concerns about bacteria becoming resistant to existing treatments. The Connected Health Cities programme at The University of Manchester, in collaboration with Public Health England (Dr William Welfare) and the NHS (Dr Andrew White), is currently evaluating the use of antibiotics and developing the capabilities to introduce interventions that could reduce the rates of antibiotic prescribing.

This research aims to empower healthcare professionals by utilising health data and presenting it in a smarter way (eLab*), going beyond what is possible with existing tools. These ‘smart’ tools will enable the assessment of prescribing behaviour across practices, including areas for improvement, and help NHS staff to build more specific interventions that are adjusted for patient differences between practices.

*The eLab is a stable, secure and smart electronic space for health research. It provides a secure environment to host de-identified health data. In the case of BRIT, the eLab will be used by GP’s to assess whether antibiotics need to be prescribed in a patient to patient case.

BRIT meeting

The BRIT engagement meeting was held on 25th May 2017 to inform and engage with stakeholders working in the NHS, Public Health England, NICE and other healthcare organisations. A series of presentations introduced the project and progress to date. Breakout groups were then asked to share their thoughts on possible interventions that would be required to reduce antibiotic prescribing, what data analyses would be useful for this, and what capabilities would an eLab need to have to be useful in practice.

Data presented

Data were presented by Professor Tjeerd van Staa and Dr Miguel Belmonte and Dr Victoria Palin using the national clinical practice research datalink (CPRD) database. This included data from ~600 general practices with greater than 200 million observations relating to antibiotic prescriptions in primary care.

The analysis has shown that antibiotics have been commonly prescribed for symptoms that are typically caused by viral infections, such as cough/colds, sore throats and URTI’s.
Although patient characteristics accounted for some of the variability in antibiotic prescribing, there was a huge variability in prescribing at the practice level, for example:

Some practices were prescribing antibiotics to patients with a cold just 10% of the time, whilst other practices were prescribing antibiotics 80% of the time.

Although prescribing variability decreased slightly over time, this was due to an increase in prescribing rates of practices that were low prescribers, suggesting some practices were beginning to give antibiotics out more frequently.

At practice level we are observing varied antibiotic prescribing not exclusively explained by patient characteristics and disease indicators. Our research aims to uncover which patient and practice characteristics are driving antibiotic prescriptions and their relative importance. Another aim for the project is to learn why prescription trends exhibit different behaviour along the 15 years of our sample. In some cases, we observe increasing rates of prescriptions over time, while for other practices, trends show abrupt changes in prescriptions which might be linked to interventions and structural changes in practice characteristics.

**Group Sessions**

Many ideas were discussed on the types of interventions needed to improve antibiotic prescribing. For example, financial incentives for GPs featured across the different groups, with one group suggesting that GPs should be incentivised to code notes better to support researchers in their analysis. The increase in the use of laboratory tests in decision making was also raised and it was agreed that point-of-care testing could form part of this. Education featured strongly, not only for GPs, but for pharmacists and patients. Delayed antibiotic prescribing was also highlighted, along with better access to nurse clinics, antimicrobial stewardship champions and a greater role for pharmacists.

The group felt that individual level analyses (individual patient?) would be helpful in improving antibiotic prescribing. The use of risk scores, based on 30 day outcomes, was thought to be useful. However, concerns were raised on whether these models were too general to be used in practice, and whether indication specific scores would be more appropriate. The “journey” of individual patients across multiple services was highlighted as a particularly useful feature as it would allow the assessment of any areas in need of intervention. The integration of resistance data would be a helpful feature.

The uniqueness of the BRIT eLab should be emphasised if it is to be successfully adopted by GPs. All groups agreed that any eLab / dashboard should be simple and visual, with security at its core. It was clear that benchmarking should only be done across similar size practices, geographies, etc. A shared learning environment was raised as a useful feature but there were concerns that data could be misinterpreted. The integration of external data, such as PHE lab tests, would be beneficial.
Stakeholder engagement

Possible mechanisms of how the engagement continues with this group were put forward. These included the circulation of frequent newsletters, reviews and updates from the BRIT team. As well as webinars, virtual conversations and onsite visits to each antibiotic champion or interested parties.

We also propose a ‘BRIT buddy scheme’ whereby a member of the BRIT team partners with an engaged stakeholder. An example of how we may utilise this buddy scheme would be to ask for feedback on the project at key stages to further shape the development of an eLab that compliments main user requirements and needs.

Individual Group responses

Group 1

1. What interventions are needed to improve antibiotic prescribing?
   Patient facing clinical decision making tool / template for risks
   Point-of-care testing
   Financial incentive
   GP education (but how to enforce?)
   Delayed antibiotic prescribing

2. What data analyses would be useful?
   Practice level ‘high risk + low risk’ patient data
   GP characteristics
   ‘Real-time’ data on what they are prescribing

3. Not another dashboard! – What capabilities should the BRIT eLab / dashboard have to be useful for users?
   Simple / Visual, good explanation, simple colours
   Low risk / high risk patients – practice-level data (comparators—similar PUs / neighbourhoods)
   History of prescriptions with date, antibiotic and symptoms
   Does the patient need the antibiotic? Risk factors calculator
   Practice data RAG (QIPP) but up-to-date—visual
Number of courses @ XYZ

Your practice against quality premium and trend data

Group 2

1. **What interventions are needed to improve antibiotic prescribing?**
   Role of pharmacists – education to understand not just what but why. Feedback loop between pharmacists and GP (similar to hospital pharmacy interaction with clinicians)
   Summary level reports – maybe quarterly outlining % of patients at risk in the practice
   Laboratory tests – susceptibility testing. Point-of-care could help.
   Pop-up systems, although annoying to some, do work – series of questions/alerts, etc.
   Delayed prescribing

2. **What data analyses would be useful?**
   Individual level analyses – “patient story”
     - Care pathway across multiple services
     - Enables answers to “Where is it going wrong in the pathway?”
   Risk scores – 30 day outcome but need to be indication specific – would people use a too general model?
   Adherence to guidance? But difficult
   (Ability to inform guidance?)

3. **Not another dashboard! – What capabilities should the BRIT eLab / dashboard have to be useful for users?**
   Gap analysis – current market – lots out there U.S.P.
   Shared learning environment: powerful but complex – could data be misinterpreted?
   PHE ↔ lab tests – how can these be collated/integrated and fed back?
   Clear security
   Could research-engaged GPs skew data / models?
   Social sharing important – “safe space”
   Sharing good practice
Group 3

1. **What interventions are needed to improve antibiotic prescribing?**

Patient education
- Mind-set change: persistence for antibiotic
- Education about the consequences (long-term use)
- Shared experiences

Prescriber education
- Appropriateness of prescribing

Fear of a legal challenge
- How else can “safety netting” be achieved?

Resources
- Better access to nurse clinics
- Medication reviews by pharmacists

Incentives for GPs to code better

Training in understanding / interpretation of reports

Antimicrobial stewardship champions

2. **What data analyses would be useful?**

Informed prescribing based on ‘resistance data’ + individual data

Realistic targets

Granular detail on the type of antibiotic

Quick, easy, decision tool

Prescription patterns

3. **Not another dashboard!— What capabilities should the BRIT eLab / dashboard have to be useful for users?**

Benchmarking annoys people
- Needs to be done across similar sizes, geographies, nationality
- No ‘wiggle’ room to ‘get out of it’

Easy to use (‘Fingertips’) using meaningful data
How can we progress?

- Webinar
- Virtual conversation
- Onsite interactions
- Solution centre
- GP engagement – clear, defined role
- BRIT buddy scheme