

ARK-Hospital

Feasibility of a complex behaviour change intervention in secondary care to safely and substantially reduce antibiotic use

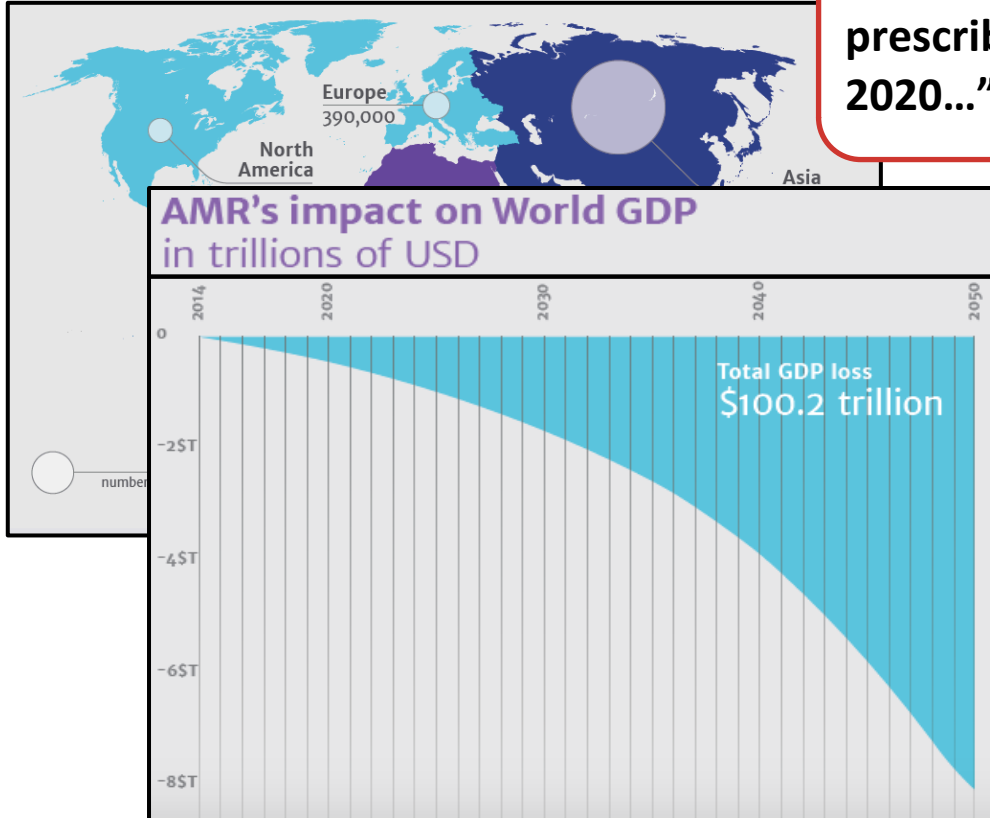
Elizabeth Cross, Jasmin Islam, Fiona Mowbray,

Tim Peto, Marta Santillo, Katy Sivyer,

Sarah Walker, Lucy Yardley, Martin Llewelyn

Antimicrobial Resistance

“we will cut inappropriate prescribing in the UK by half by 2020...” *Dave*



CQUINs

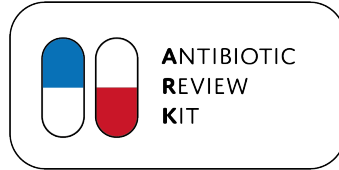
To be presented on 1st Dec @ FIS
Evaluation of 2016/17 CQUIN AMR:
Only 43.2% of trusts achieved
reduction of 1% for total Abx use

2016/17 CQUIN – AMR

- By Q4 90% antibiotic prescriptions reviewed within 72 hours
- Reduction of total, piperacillin/tazobactam and carbapenem antibiotic usage by 1%

2017/19 CQUIN – Reducing the impact of serious infections:

- Antibiotic usage reduced by at least 1-2%



ARK-Hospital (Antibiotic Review Kit – Hospital)

A 5-year applied research programme funded by NIHR

The ARK-Hospital Team

Nationally



- **Gavin Barlow** Consultant Infectious Diseases and General Medicine Physician **Hull**
- **Richard Bellamy** Consultant Infectious Diseases Physician **Middlesbrough**
- **Elizabeth Cross** Specialist Registrar in Public Health **HEE South West**
- **Nicola Fawcett** Specialist Registrar in Acute Medicine **HEE Thames Valley**
- **Susan Hopkins** Consultant Infectious Diseases Physician and Medical Microbiologist **London**
- **Kieran Hand** Consultant Antimicrobial Pharmacist **Southampton**
- **Jasmin Islam** Specialist Registrar in Infectious Diseases and Microbiology **HEE Kent, Surrey and Sussex**
- **Nicola Jones** Consultant Acute Medicine, Infectious Diseases Physician, Medical Microbiologist **Oxford**
- **Adele Krusche** Health Psychologist **Southampton**
- **Martin Llewelyn** Consultant Infectious Diseases Physician **Brighton**
- **Tim Peto** Consultant Infectious Diseases, General Medicine Physician, ARK Principal Investigator **Oxford**
- **Chris Roseveare** Consultant Acute Medicine Physician **Southampton**
- **Marta Santillo** Health Psychologist **Southampton**
- **Catherine Sargent** Consultant Acute Medicine and Infectious Diseases Physician **Brighton**
- **Ian Setchfield** Acute Care Nurse Consultant **East Kent**
- **Mike Sharland** Consultant Infectious Diseases Paediatrician **London**
- **Louella Vaughn** Consultant Acute Medicine Physician **London**
- **Sarah Walker** Principal Investigator on ARK study **Oxford**
- **Mark Wilcox** Consultant Medical Microbiologist **Leeds**
- **Martin Wiselska** Consultant Infectious Diseases and General Medicine Physician **Leicester**
- **Juliet Wright** Consultant Elderly Medicine Physician **Brighton**
- **Lucy Yardley** Health Psychologist **Southampton**

Locally

Sally Curtis
Sam Lippett
Vikesh Gudka

The AMS team

Martin Llewelyn
Jasmin Islam
Lizzie Cross
Will Hamilton
Catherine Sargent
Dan Agranoff
Nelson Barbon

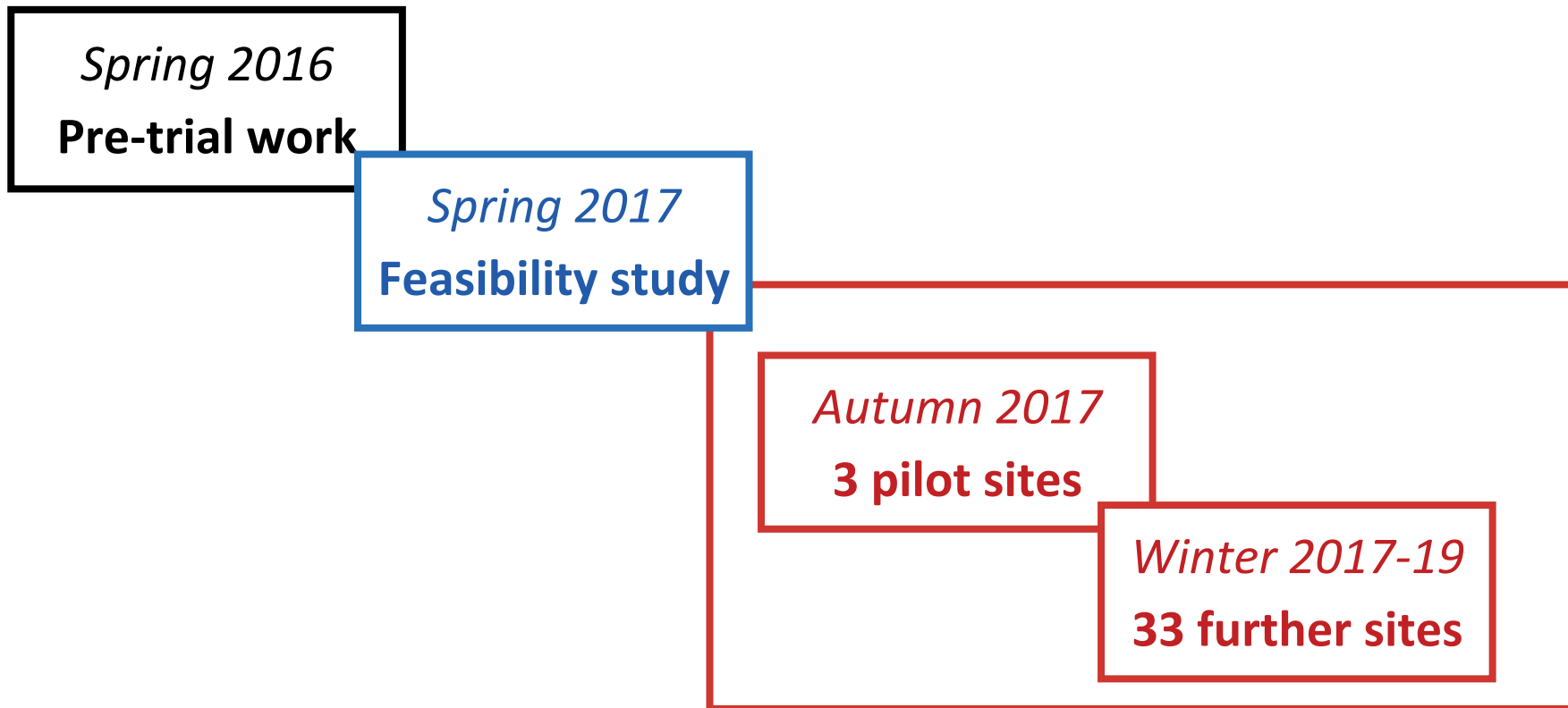
**Mix of
professions
and grades**

What is ARK-Hospital?

The overarching aim of ARK is to reduce the incidence of serious infections caused by antibiotic-resistant bacteria in the future, through substantially and safely reducing antibiotic use in hospitals now

- Complex behaviour change approaches
- Based on similar successful approaches in primary care
- Aimed at whether to stop antibiotics or not at review and revise

ARK-Hospital timeline



ARK-Hospital provides:

1. Information for prescribers about Review & Revise decision making
2. A decision aid applied to antibiotic prescriptions
3. Information for nurses and pharmacists
4. Information for patients
5. A structure for team meetings

ARK-Hospital providers

**122 clinicians
completed the tool!**

- 1. Information for prescribers about Review & Revise decision making**
2. A decision aid applied to antibiotic prescriptions
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Online learning tool

- Website/App
- Info about R&R
- Evidence of harms of Abxs
- Endorsed by specialist societies

ARK-Hospital provides:

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- 2. A decision aid applied to antibiotic prescriptions**
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Modified antibiotic prescriptions

- Acknowledges uncertainty
- Helps person reviewing Abx
- Prompts 72hr review

ARK-Hospital provides:

1. Information for prescribers about Review & Revise decision making
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A red callout box with a pointer pointing to item 3 of the list. The box contains text about face-to-face education and an online tool.

Face-to face education + online tool

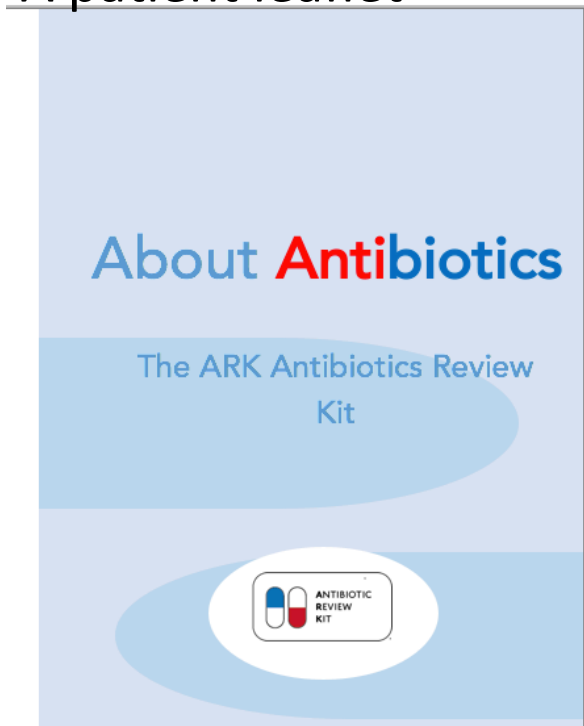
- Confirm use of decision aid
- Alert doctors to review Abx

ARK-Hospital provides:

1. Information for prescribers about Review and Revise decision making
2. A decision aid applied to antibiotic prescriptions
3. Information for nurses and pharmacists
- 4. Information for patients**
5. A structure for team meetings

4. Information for patients

A patient leaflet



Taking antibiotics when you don't need to or taking them for too long can be unsafe for the future. This leaflet explains why.

When do we use antibiotics?

- Antibiotics fight infections caused by bacteria, but not all infections are caused by bacteria.
- When you first come to hospital, often it's **too early** to be sure of what is causing your illness, so doctors may give you antibiotics "*just in case*".

What are the risks of taking antibiotics?

Taking antibiotics kills **natural 'good' bacteria** in your body, which help keep you healthy. Taking antibiotics causes the bacteria that your body carries to become "**resistant**" to antibiotics, meaning that common antibiotics don't work anymore.

The more antibiotics you take the more likely you are:

- to carry antibiotic resistant bacteria and to **spread them to other people such as your family, friends and pets**;
- to have antibiotic resistant infections in the future. When this happens, antibiotics **will work less well** or not at all.

Antibiotics can cause **side effects** (such as diarrhoea, rashes, feeling sick), which in rare cases can be **very severe** (spasm of the airways or collapse).

What will my doctor do?

When doctors prescribe antibiotics "*just in case*", they will "**review**" your response to treatment carefully.

- If you are on **review** and your doctors decide that the **illness isn't caused by bacteria**, they will **stop** antibiotics.
- When your doctors **have your test results** they can **decide how long** you need antibiotics for and **which ones you need**.
- Your doctors may also decide that you can **carry on** with the antibiotics you had before.

Regular **review** of antibiotic prescriptions helps to make sure that you only take the antibiotics **you need to make you better**.

What should I do when the antibiotics stop?

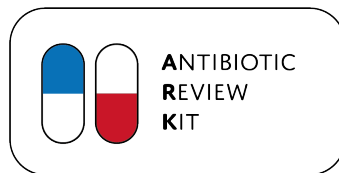
Tell your doctor if:

- your **fever goes up again**;
- your **symptoms come back**.

They can always **restart your treatment** if needed.

ARK-Hospital provides:

1. Information for prescribers about Review and Revise decision making
2. A decision aid applied to antibiotic prescriptions
3. Inform **Total of 30 cross-sectional audits and 20 feedback sessions** cists
4. Inform **Kick-off meetings**
Monitoring of Abx prescriptions
Feedback to clinical teams
5. **A structure for team meetings, monitoring and feedback**

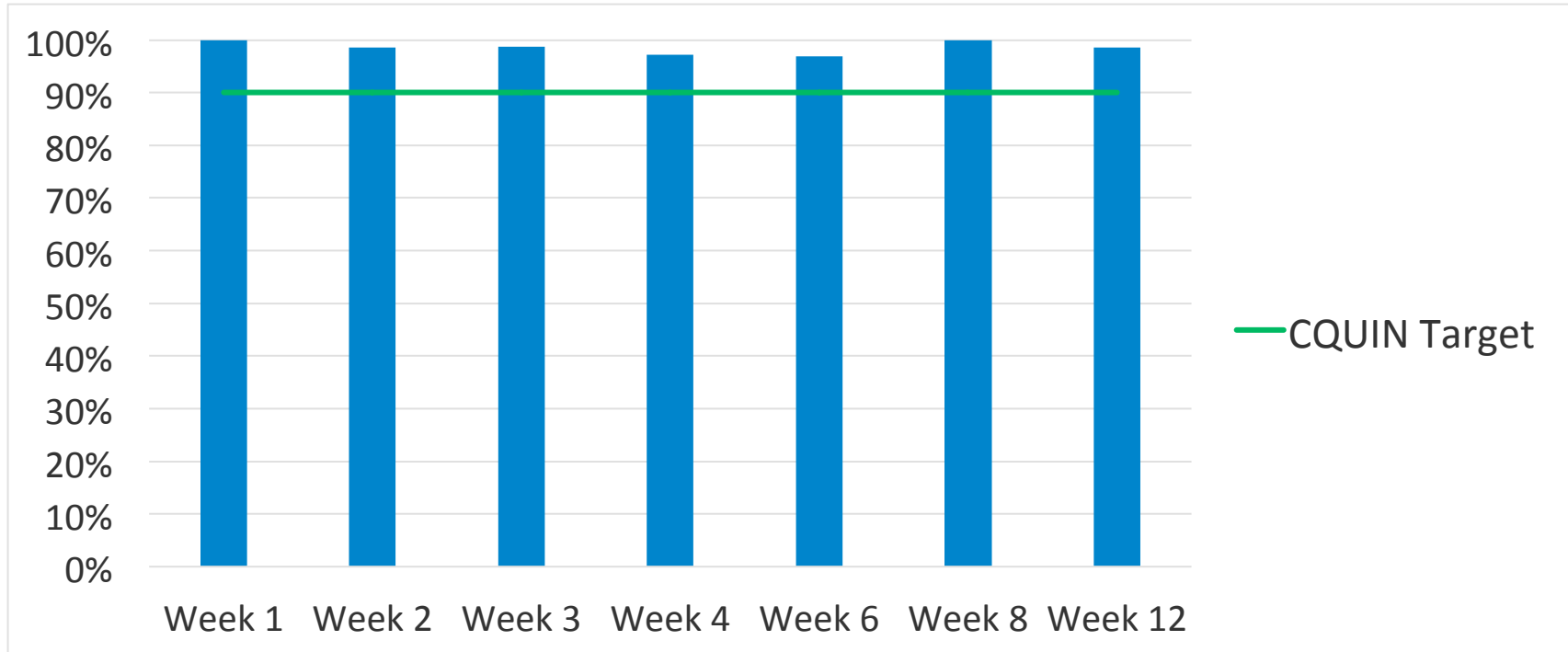


Feasibility study quantitative data

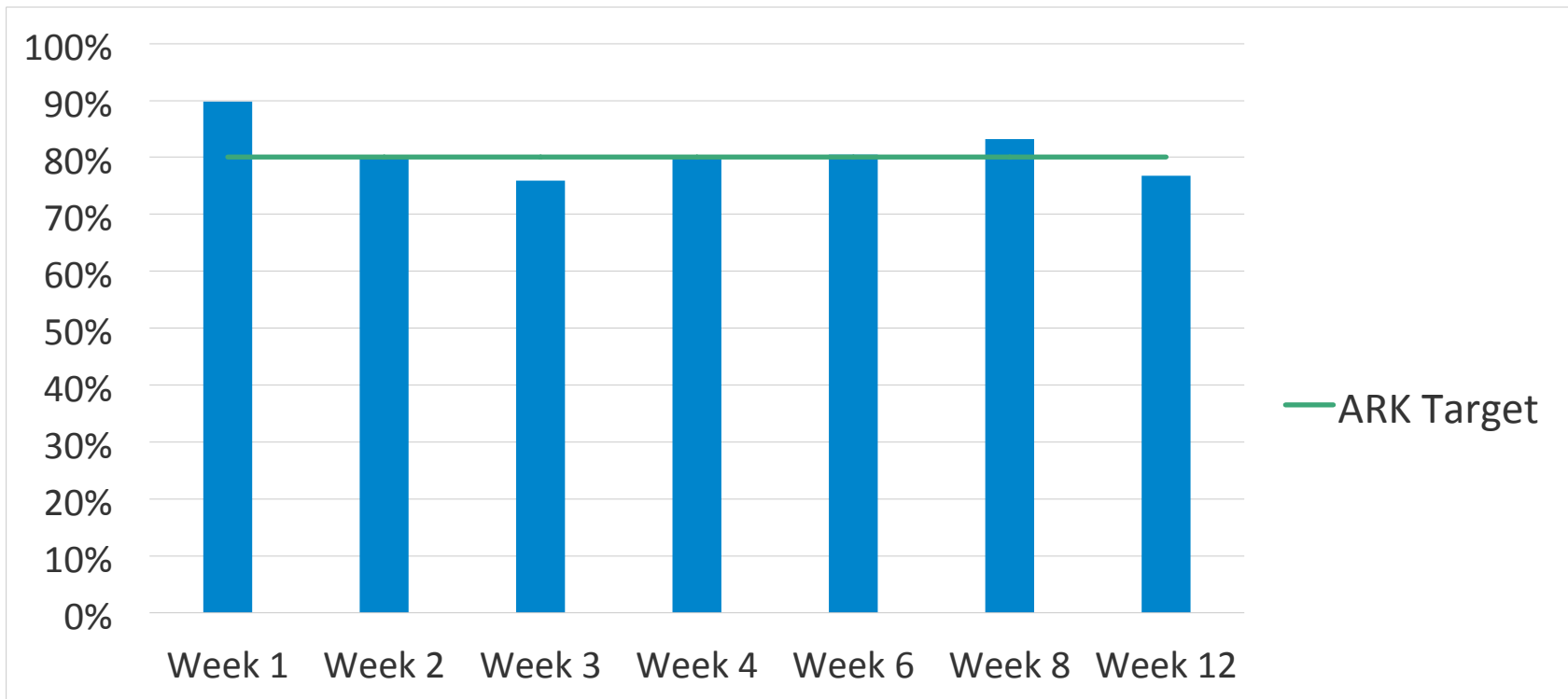
Quantitative data

- 3 months from April to July 2017
- 588 antibiotic prescriptions
- Point prevalence surveys
 - Weeks 1, 2, 3, 4, 6, 8 and 12
- Medical specialties:
 - Acute medicine, respiratory, elderly care, endocrine, gastroenterology

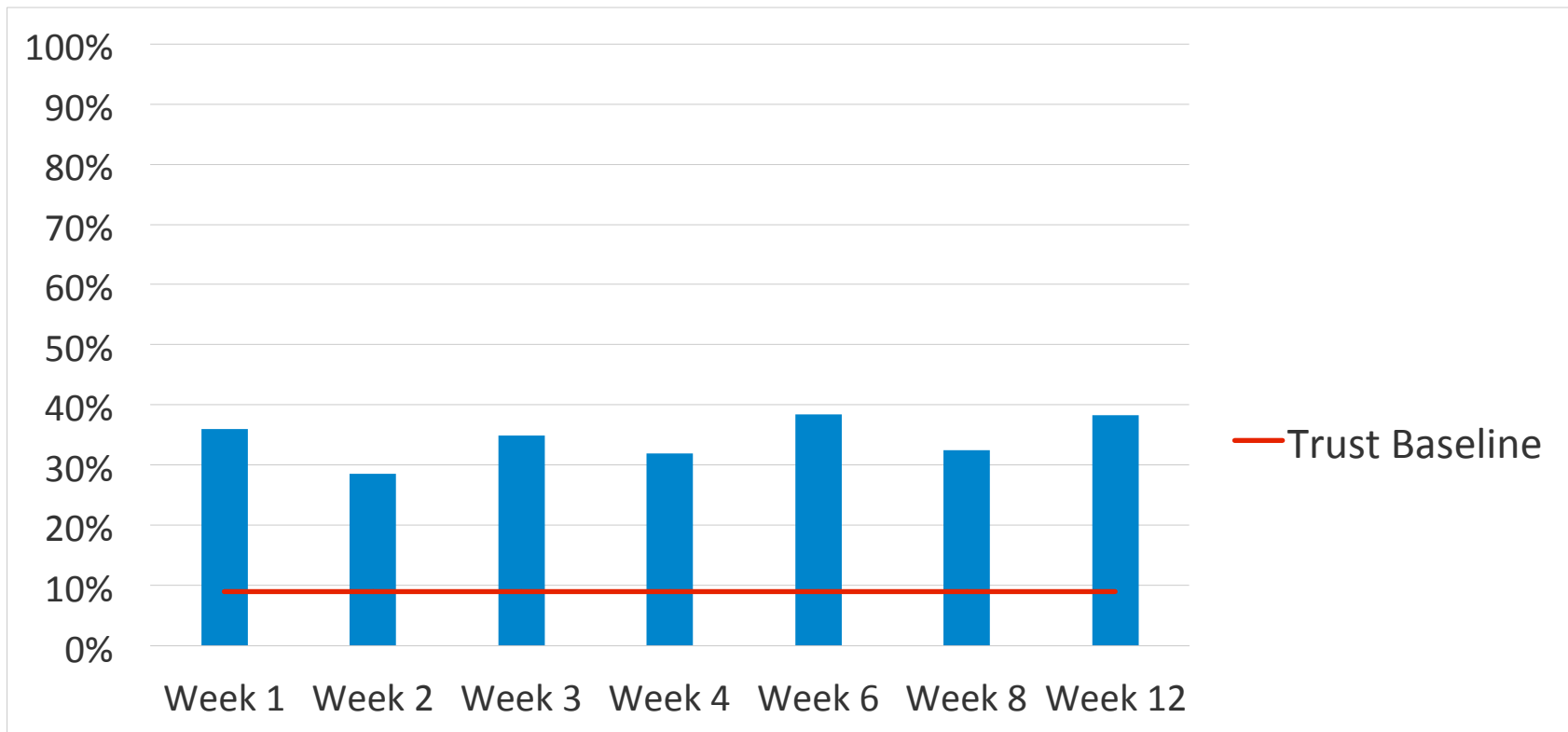
Prescriptions r/vd within 72 Hours

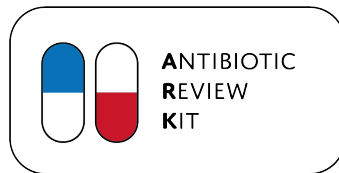


Prescriptions using decision aid



Prescriptions stopped within 72hr r/v





Feasibility study qualitative data

Patient interviews

Review and revise

"I agree with how it's done...continue or discontinue, you've got to wait for the results and I think that's what happened with me. They got the results in and then it was discontinued and that's fine, I'm happy with that."

Brighton, Patient 1

Leaflet

"I thought it was very informative, concise and straightforward and in nice, easy terms, that most people could understand. It looks nice and neat and easy to read." **Brighton, Patient 6**

Core Team Focus Group & Champion Interview

Feedback

- Piloting and planning ahead
- Resources developed
- Effective feedback of data

Challenges

- Sustainability

“It has been enormously rewarding to do ARK...It has felt like a very good use of my time, in terms of making positive impact on patients in the hospital...The idea of capturing diagnostic uncertainty at the time you write an antibiotic prescription appears to have tremendous resonance to people.”

Brighton, ARK Champion

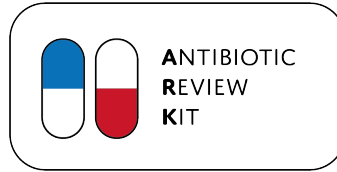
Wider clinical team focus groups

Feedback

- Benefits of the Decision Aid
- Support from the core team
- Challenges
- Involvement of different professional groups
- Use of the ARK website and ARK patient leaflet

“I think everybody in AMU found it [the feedback] quite helpful...I suppose getting, seeing the data can then change what we’re doing... there was one week and I think that we did very well, in terms of stopping the antibiotics, so then everybody the next week was stopping all the antibiotics.”

Brighton, Junior Doctor



Interested?

Visit: <http://www.arkstudy.ox.ac.uk/>

Or contact: Professor Martin Llewelyn
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