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Conference Abstract

## **An App a day keeps resistance at bay - A novel method to improve antimicrobial governance.**

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### **Abstract**

**Introduction:** Antimicrobial stewardship is the responsibility of all healthcare professionals in an effort to prevent the exponential growth of antimicrobial resistance (1). Since discovery, over twenty five years ago vancomycin resistant enterococcus has spread worldwide highlighting the importance of policy compliance (2). Good antimicrobial governance is a balance between effective early treatment (therefore broad spectrum) then de-escalating to source directed therapy (narrow spectrum) to limit resistance.

Policy compliance requires an effective distribution strategy, enthusiastic uptake and diligent implementation in order to control antibiotic resistance. Mobile phone technology remains an under-utilised resource for the distribution of trust policies and guidelines.

The anti-infectives guidelines for University Hospitals Southampton (UHS) have been deployed using paper, intranet and now, a smartphone application called Microguide. Imperial College Healthcare recently published data governing a similar smartphone application. We conducted an audit with a wider target audience and extended questions to analyse institutional differences.

#### **Aims and Objectives:**

1. To analyse the uptake and compliance with anti-infective guidelines using smartphone applications.
2. To identify synergy between institutions in the development of anti-infective smartphone applications.

**Results:** Our audit surveyed 56 doctors, 37 nurses, 23 pharmacists and 6 others while Imperial College surveyed 71 junior doctors and 16 pharmacists. 84% of respondents owned either an iphone or android device showing synergy with imperial college data at 90% ownership. 50% of respondents in both studies currently use medical / clinical smartphone apps however UHS trust policy limits the use of mobile phones in clinical areas by nursing staff potentially influencing results. 72% of UHS doctors (including seniors) with smartphones currently use Microguide whereas 100% of junior doctors used the equivalent Imperial College application. Over 75% of respondents in both studies would potentially use a local antibiotic smartphone application if available.

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**Conclusions:** Over 70% of UHS doctors surveyed now use Microguide to access the latest anti-infectives guidelines. This innovative distribution method has the potential to increase compliance and decrease antibiotic resistance. Allowing for demographic differences we have shown synergy with another study however local trust policy may influence overall uptake and utilisation.

The advantages of smartphone usage over paper or intranet include portability and near patient decision support, interactive calculators, automated version control, and the ability to carry multiple guidelines.

We propose an extension to this technology, to enable individual trusts to create their own guidelines on a common clinical decision algorithm. This is disseminated automatically by using geo-location (Microguide Framework) of the individual user. This Framework further improves version control as the latest guideline changes are refreshed instantly with each use.

### **Keywords:**

**smartphone, antimicrobial, resistance, microguide,**

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