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## Towards an ethically-founded framework for the use of mobile phone CDRs in health research

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### Introduction

Call Detail Records (CDRs) are collected by mobile network operators in the course of service provision, and they are increasingly being used in health research. It has been identified that further work is needed to show that CDRs can be used within an ethically-founded framework that meets with social acceptability.

erally amenable to the use of anonymised CDR data, but they want to be properly informed. The proposed recommendations should be taken into consideration to contribute towards a consistent, socially-acceptable, ethically founded framework.

### Objectives and Approach

The published research literature was reviewed to identify data governance arrangements, challenges and potential opportunities for the greater use of the location element of CDRs in health research. A series of 3 workshops with members of the public (N=61) were conducted to gain views on the use of CDRs for health research. Data use scenarios of CDRs for health research were constructed to consider risk and mitigating controls. The findings were drawn together against a backdrop of legislative and regulatory requirements.

### Results

The majority of published studies focused on low and middle income countries, often modelling the transmission of infectious diseases, and population movement following natural disasters. CDRs were used in anonymised or aggregated form, and gaining regulatory approvals varied with data provider and by jurisdiction. Only 2 people knew CDR data was being used for health research, but ultimately, most (N=49) were happy for their anonymised CDRs to be used, provided that safeguards were in place. Recommendations towards an ethically-founded framework for using CDR locations in health research are proposed, including the need for greater transparency, accountability, and the incorporation of public views for social acceptability.

### Conclusion/Implications

Despite limitations inherent in the data, mobile phone CDRs have been used successfully in health research. People are gen-

