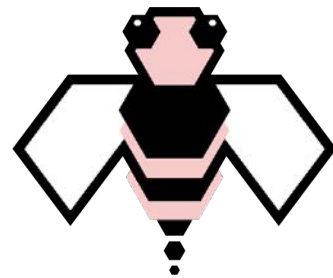


TWIST

Tracking Wound Infection with Smartphone Technology

A circular graphic composed of several curved, overlapping lines that create a sense of motion or a stylized 'e' shape, positioned to the right of the main text.

**Surgical
Informatics**
@University of Edinburgh

Ewen Harrison (Principal investigator + Group lead), Katie Mountain,
Riinu Ots, Catherine Shaw, Thomas Drake, Kenneth McLean, et al.

Aims

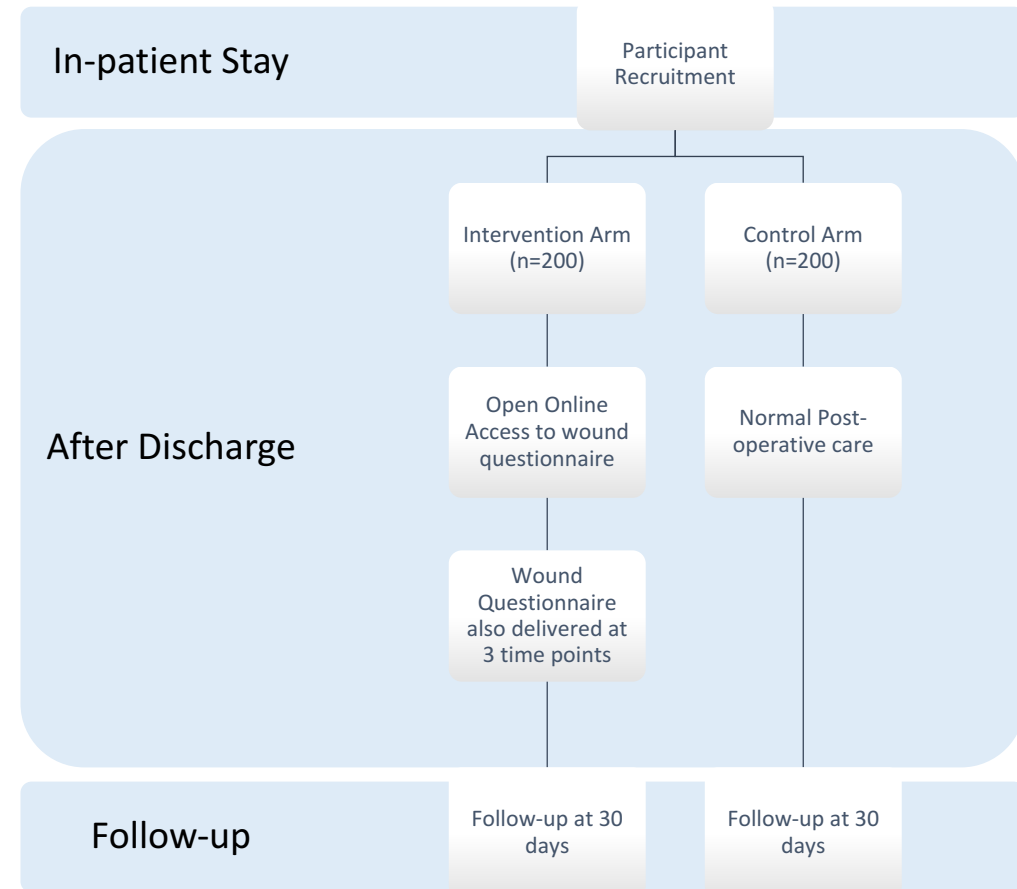
- **Can a smartphone-delivered questionnaire facilitate the assessment of surgical site infection, and result in earlier treatment? A randomized-controlled trial in emergency surgery patients.**
- Primary outcome measure:
 - Time-to diagnosis
- Secondary outcome measures:
 - Service usage
 - Patient experience
 - Reliability of computer algorithm

Background

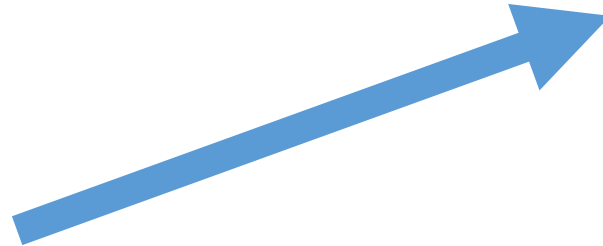
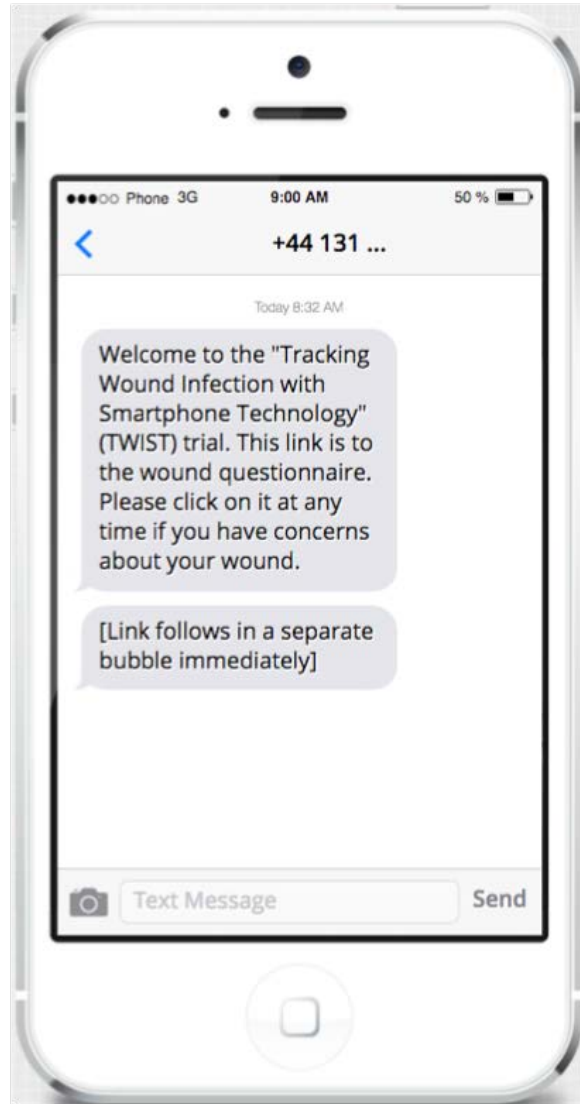
- Up to 25% of patients will report wound complications such as infection
- Many of these complications mild (only 1% of them require readmission)
- Two-thirds of adults have smartphones, with one-third using smartphone as primary access to internet.
- Increasing interest in Telehealth as an aid to diagnosis and management

Methods

- RCT aiming to recruit 400 patients across RIE and WGH
- Intervention: Smartphone Questionnaire
- Criteria:
 - Inclusion:
 - Emergency Abdominal Surgery
 - Age >16
 - Owner of Smartphone
 - Exclusion:
 - Significant Visual Impairment



Intervention group (day 3, 7, 15 + any time within 30 days):



A screenshot of a mobile questionnaire displayed on a smartphone. The top status bar shows "Messag...", "4G", "09:33", and "92%" battery. The URL "redcap.cir.ed.ac.uk" is visible. The questionnaire consists of several sections:

- Two radio button options: "Yes" and "No", with a "reset" link to the right.
- A question: "Have you experienced fevers in the last 24 hours?" followed by "Yes" and "No" radio buttons and a "reset" link.
- A question: "Have you been diagnosed with a wound infection since surgery?" followed by "Yes" and "No" radio buttons and a "reset" link.
- A section titled "Please upload a photo of your wound." with a sub-instruction: "The photo will be reviewed by a qualified doctor, who will contact you if there are any concerns not picked up in the questions above." Below this is a green "+ Upload document" button.
- A large "Submit" button at the bottom.

Clinician's response:

- The clinician reviews the `concern score` calculated from the questionnaire and the photo.

Response

No concerns

Possible infection - see GP

Probable infection - contact surgery nurses

Event

Clinician response 1

Clinician response 2

Clinician response 3

Wound concerns

Your name:

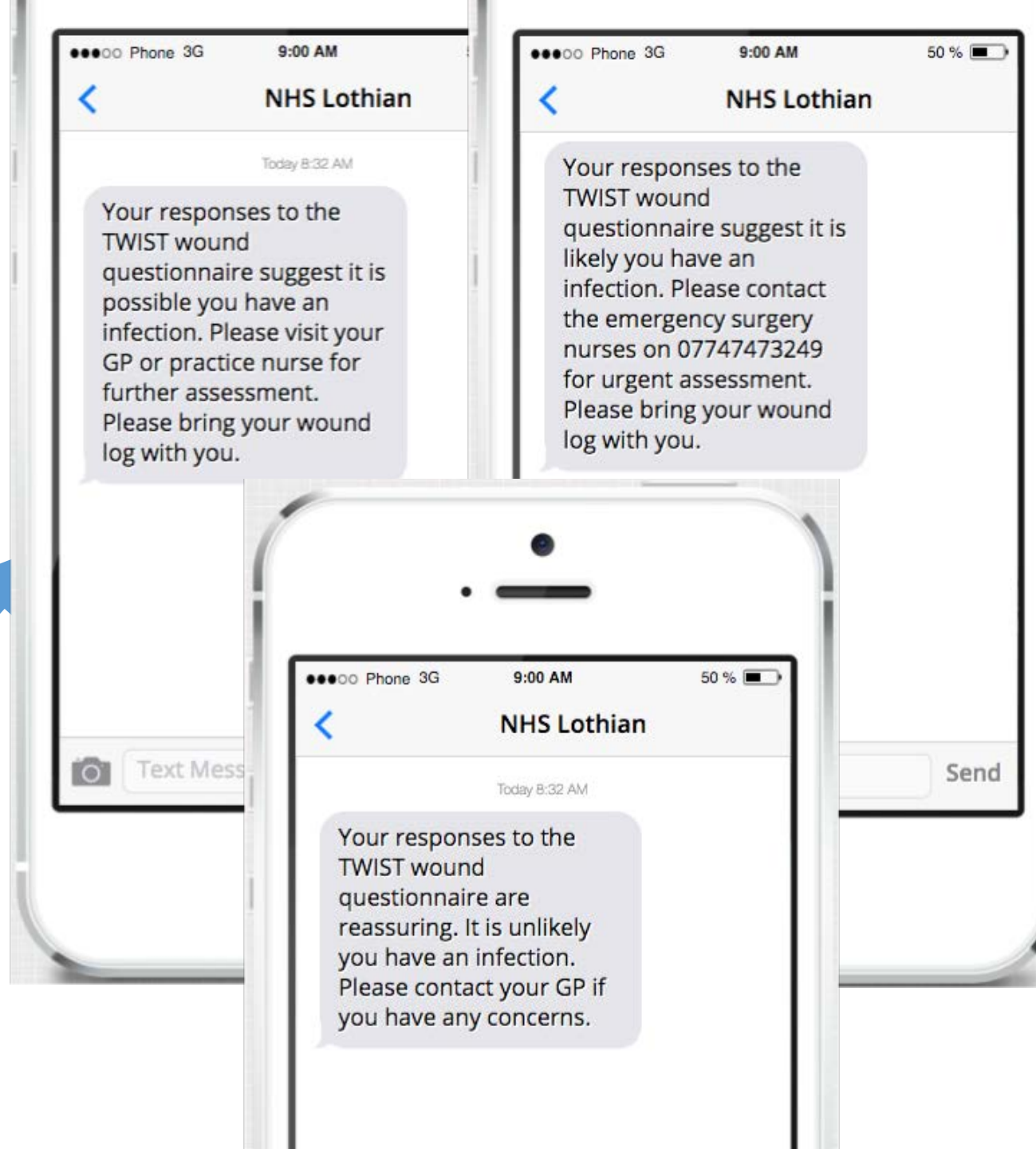
Test (Riina)

Royal Western

Record ID:

Royal: 1

SEND TEXT TO PATIENT



Patient consents to take part in the TWIST Randomised Control Trial

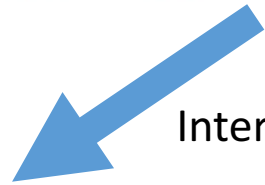


Control arm

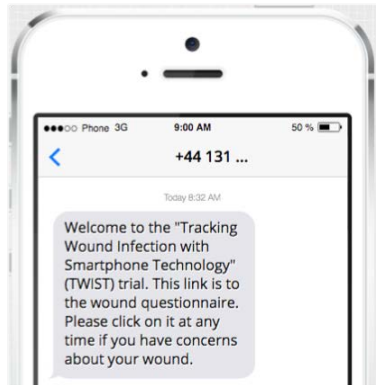


30-day follow-up
by a blinded
clinician

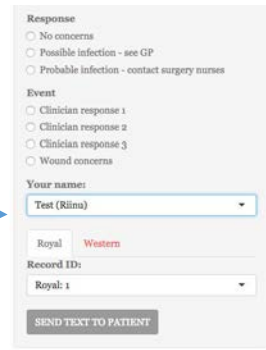
Intervention arm



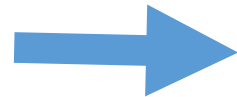
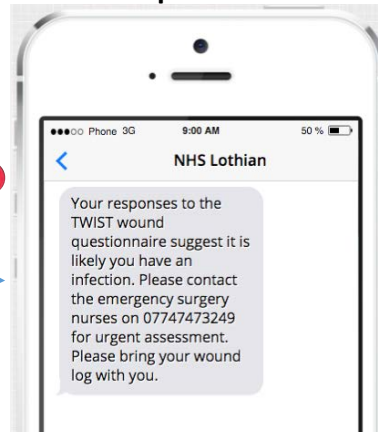
Patient's
phone:



Clinician's
response



Patient's phone:



Questions?

TWIST

Tracking Wound Infection with Smartphone Technology



For more information:
Contact the Emergency
Surgery Nurses on:
07747473249
(or find them on the Surgical
Assessment Unit)

What is TWIST?

- The TWIST trial is investigating whether a smartphone questionnaire can be used to help diagnose wound infection earlier.

Who can take part?

- We are looking for patients who have recently had (or are about to have) abdominal surgery
- Those taking part would also need a smartphone



THE UNIVERSITY
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TWIST TRIAL TEAM

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