

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:

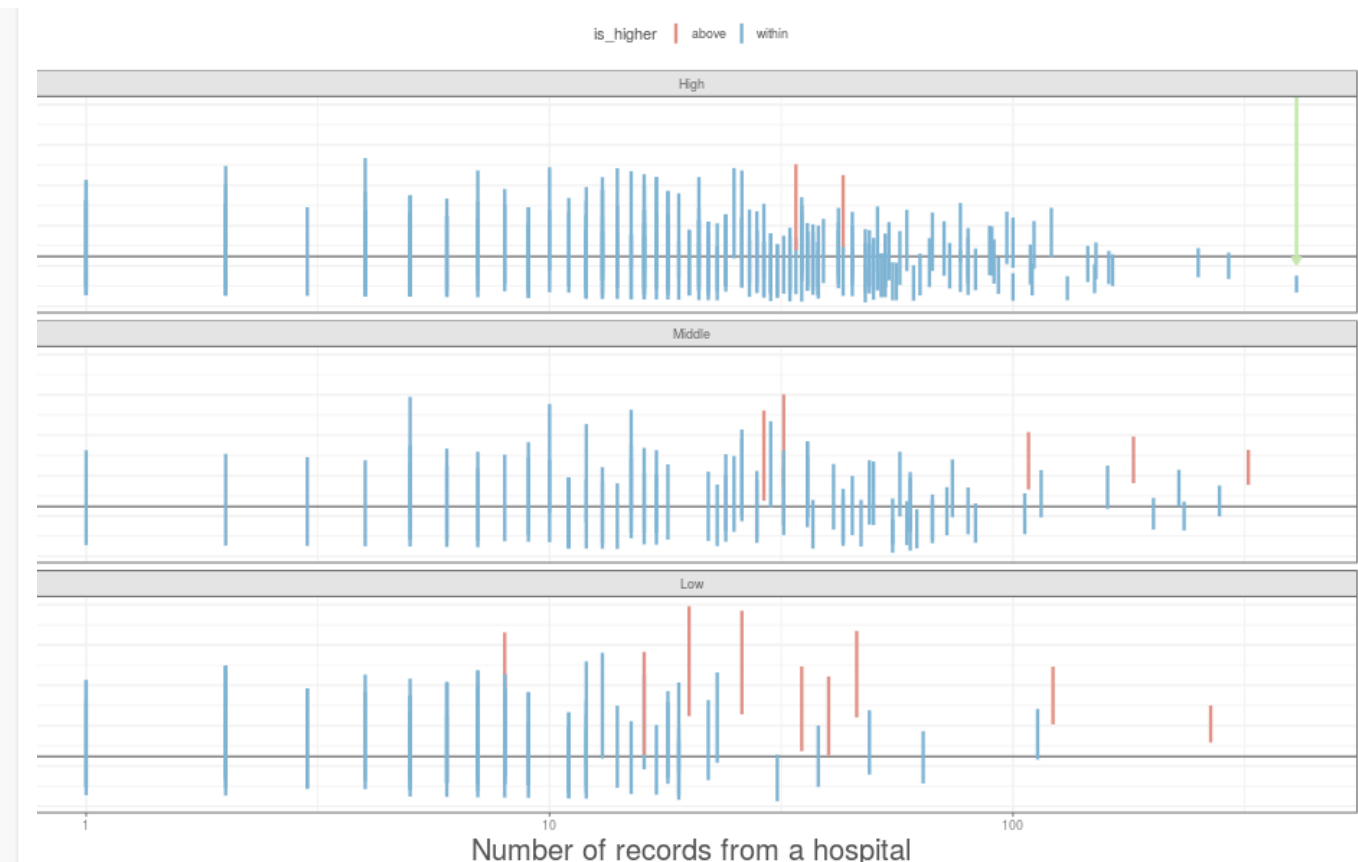
Test (Riinu)

Royal Western

Record ID:

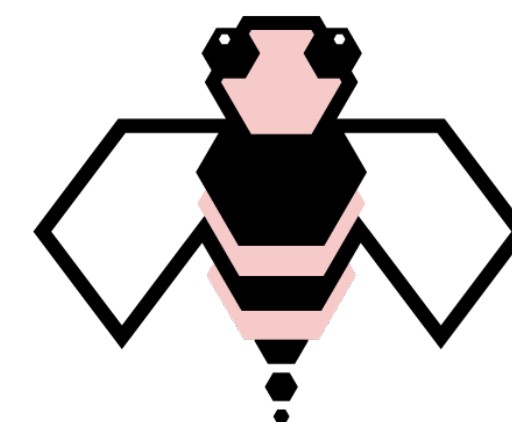
Royal: 1

SEND TEXT TO PATIENT



SHINY REPORTING APPS

RIINU OTS, PHD
DATA MANAGER:



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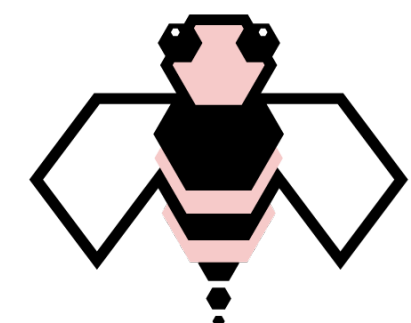
EDINBR: EDINBURGH R USER GROUP, 18-OCTOBER 2017

OUTLINE:

▶ **WHAT IS SHINY**

▶ **OUR PROJECTS/BACKGROUND**

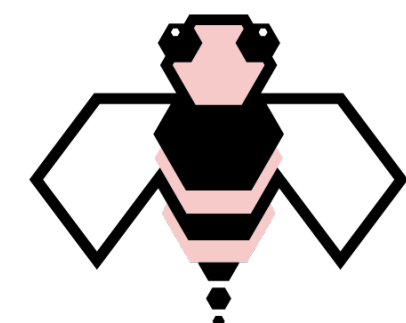
▶ **EXAMPLES OF OUR SHINY REPORTING APPS**



**SHINY IS - JUST - A PACKAGE:
INSTALL.PACKAGES(“SHINY”)**



**PRESENTATION WITHIN A PRESENTATION:
“YOUR FIRST SHINY APP” AT
[HTTP://RPUBS.COM/RIINU/SHINY](http://rpubs.com/riinu/shiny)**



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BACKGROUND:

GLOBALSURG STUDIES

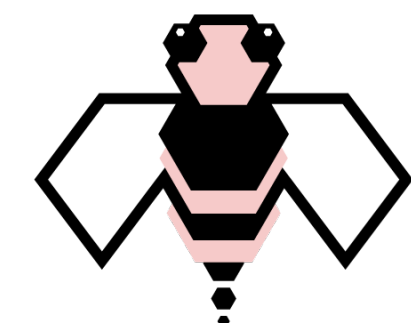
► WE CROWD-SOURCE DATA THAT IS:

- PATIENT LEVEL
- COMPREHENSIVE - 3 INSTRUMENTS, 34 VARIABLES
- GLOBAL



► FOR GLOBALSURG 2 (1-JAN - 31-JUL 2016), THIS MEANT:

- 3,277 REGISTRATION SURVEY RESPONSES
- 2,127 DATABASE USERS FROM 70 COUNTRIES
- 554 HOSPITALS
- 16,717 RECORDS



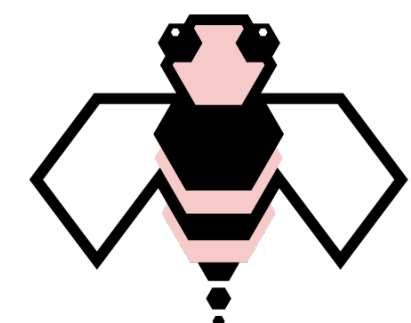
SHINY APPS

- ▶ **MONITOR DATA COLLECTION AND AID CLEANING**
- ▶ **REPORT AGGREGATED DATA BACK TO COLLABORATORS**
- ▶ **HELP DELIVER AN INTERVENTION***

***TWIST (TRACKING WOUND INFECTION USING SMARTPHONE TECHNOLOGY):**

A RANDOMISED CONTROL TRIAL WHERE THE INTERVENTION IS DELIVERED BY REDCAP+SHINY

REDCAP: RESEARCH ELECTRONIC DATA CAPTURE, [HTTPS://WWW.PROJECT-REDCAP.ORG/](https://www.project-redcap.org/)



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REPORTING APPS: MONITOR DATA COLLECTION AND AID CLEANING

Data collection timeline

Select a hospital:

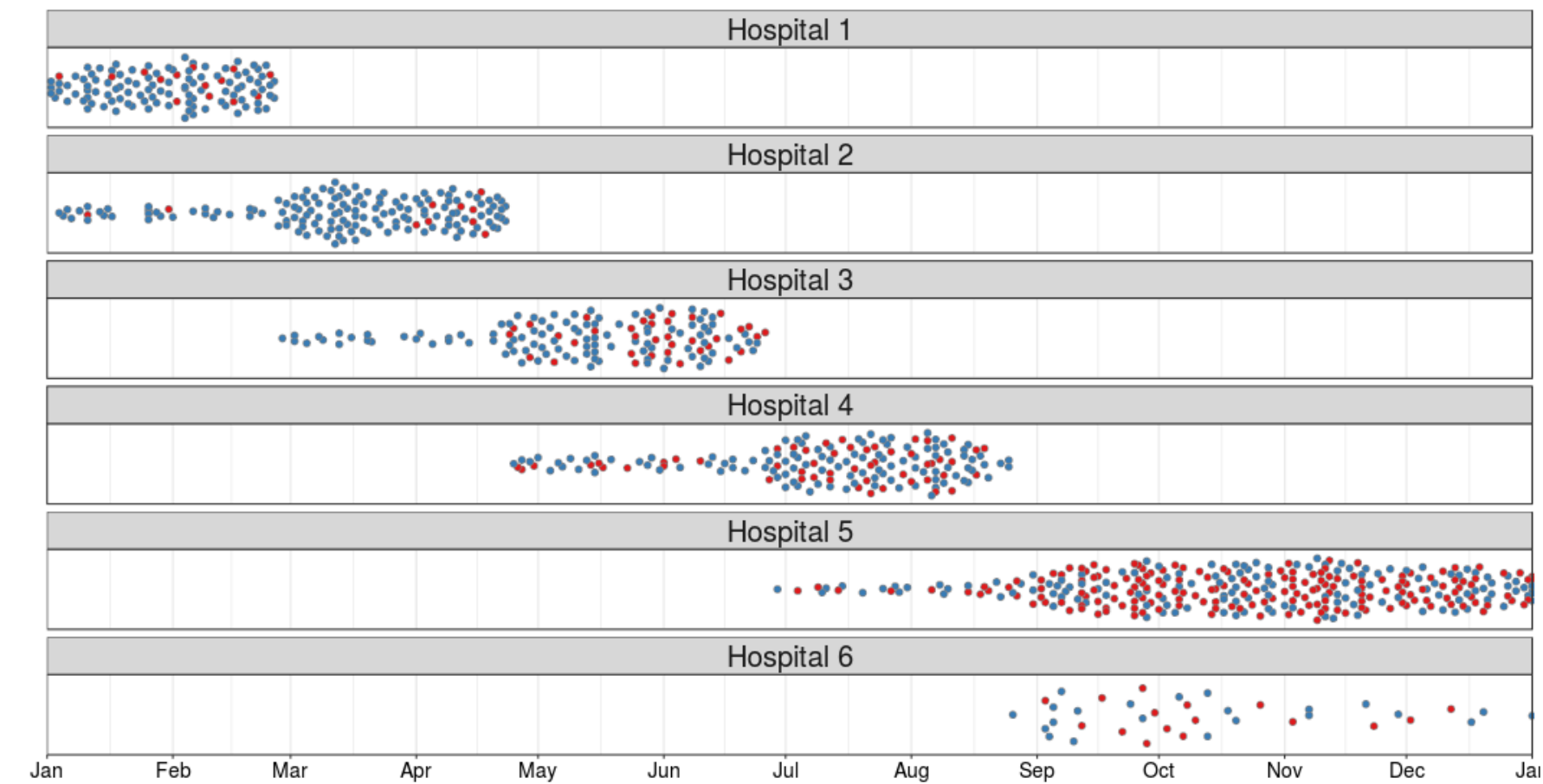
- ☒ Hospital 1
- ☒ Hospital 2
- ☒ Hospital 3
- ☒ Hospital 4
- ☒ Hospital 5
- ☒ Hospital 6

Timeline

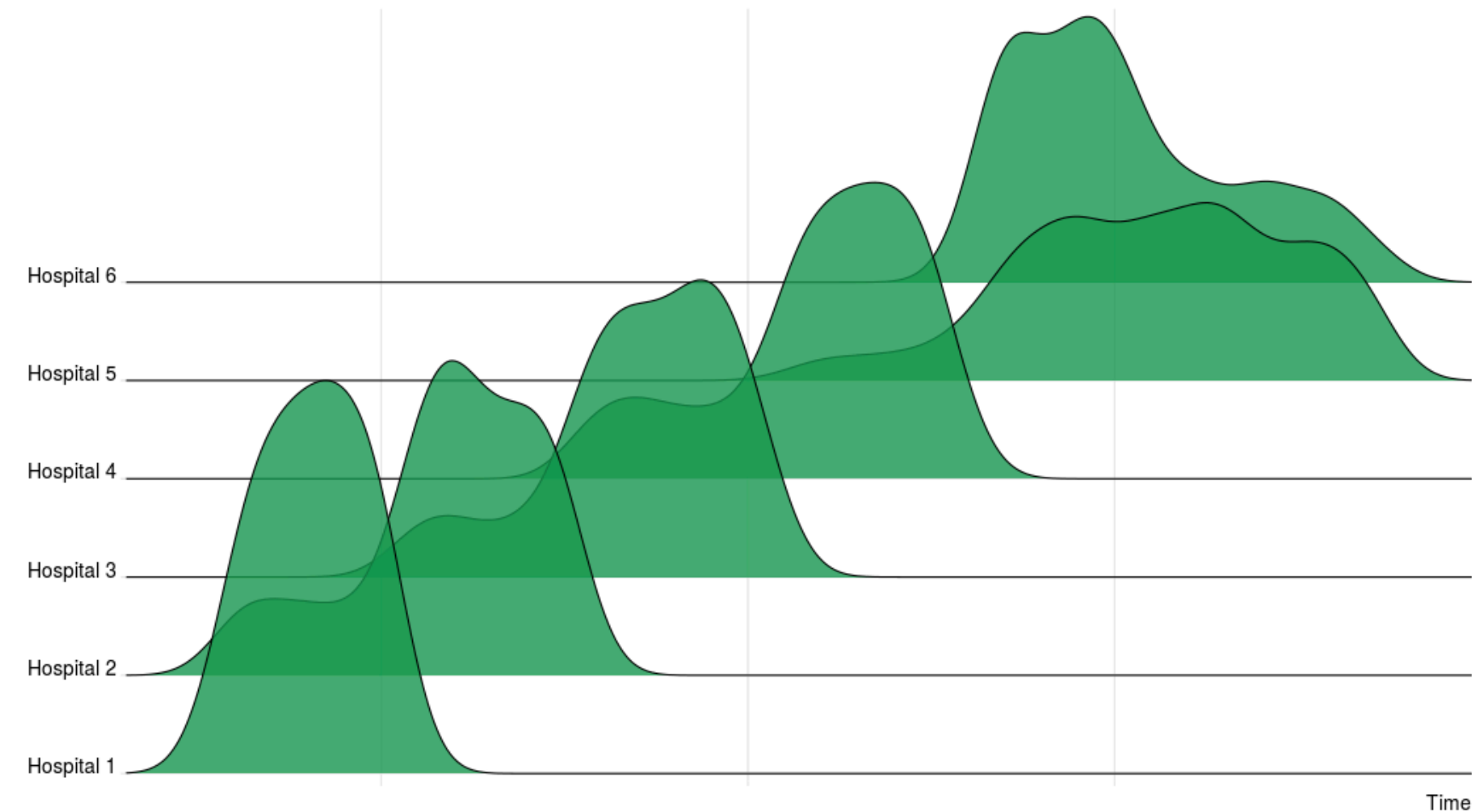
Summary table

Info

• Complete • Started



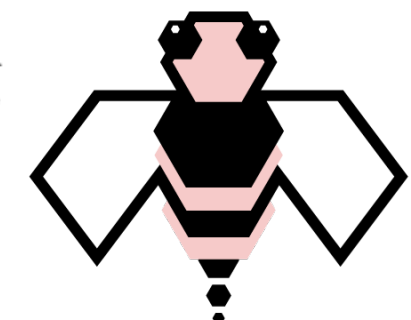
Records entered over time



LIVE AT:

[HTTPS://RIINU.SHINYAPPS.IO/REDCAPTME/](https://riinu.shinyapps.io/redcaptime/)

CODE: [GITHUB.COM/RIINUOTS/REDCAPTME](https://github.com/RIINUOTS/REDCAPTME)



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REPORTING APPS: REPORT AGGREGATED DATA BACK TO COLLABORATORS

GlobalSurg 2 dataset explorer

Main input parameters:

Explanatory variable:
HDI tertile

Split by:
ALL

Outcome variable:
Surgical Site Infection (SSI)

☐ Relative to total (x-axis to %)

Advanced parameters:

Reverse order:
☒ Explanat. ☐ Split ☒ Outcome

Shift outcome levels:
06

Plot Width (%)
2080100

Plot Height (px)
1004001,000

Subsetting: included countries
☒ High HDI
☒ Middle HDI
☒ Low HDI

Colour palette:
Paired

☐ Reverse colours
☐ 2-col legend

Legend columns
☐ 1 ☒ 2 ☐ 3

☒ % label:

☐ Black ☒ White

DataInfo

ALL

High: 9.4%

Middle: 14%

Low: 23%

Patients

Numbers:						
expl1	expl2	Yes	No	total	Yes_%	No_%
Low	ALL	298.00	984.00	1282	23.24	76.76
Middle	ALL	549.00	3369.00	3918	14.01	85.99
High	ALL	691.00	6648.00	7339	9.42	90.58

High

Middle

Low

Patients

EMPIRICAL BAYES CREDIBLE INTERVALS:

is_higher | above | within

High

Middle

Low

SSI credible interval

Number of records from a hospital

(REPRODUCIBLE CODE TO BE RELEASED SHORTLY.)

LIVE AT: [SSI.GLOBALSURG.ORG](https://ssiglobalsurg.org)
Code: https://github.com/riinuots/gs2_ssi_app
<https://github.com/riinuots/shinyviz>

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IN ACTION: SSI.GLOBALSURG.ORG

GlobalSurg 2 dataset explorer

Main input parameters:

Explanatory variable:

HDI tertile

Split by:

Operative approach

Outcome variable:

Pathology

☐ Relative to total (x-axis to %)

Advanced parameters:

Reverse order:

☒ Explanat. ☐ Split ☐ Outcome

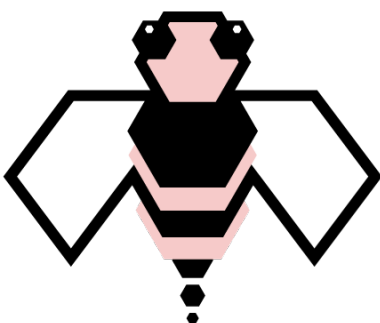
Shift outcome levels:

0

6

Remove from outcome:

☐ Unknown ☐ Missing



☐ Relative to total (x-axis to %)

Advanced parameters:

Reverse order:

☒ Explanat. ☐ Split ☐ Outcome

Shift outcome levels:

0

6

Remove from outcome:

☐ Unknown ☐ Missing

Plot Width (%)

20

80

100

Plot Height (px)

100

800

1,000

Subsetting: included countries

☒ High HDI ☒ Middle HDI ☒ Low HDI

Colour palette:

Paired

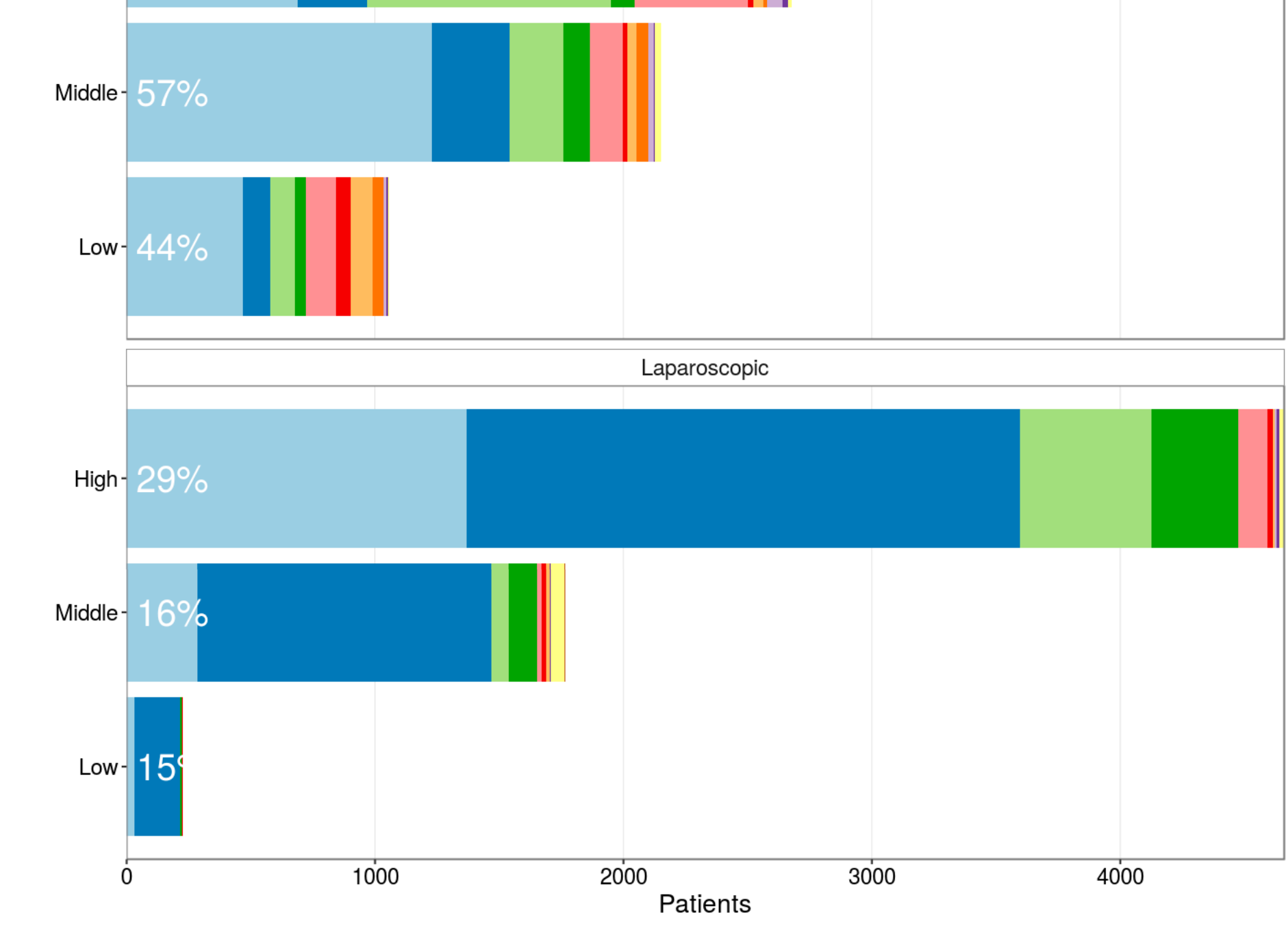
☒ Reverse colours

Legend columns

☐ 1 ☒ 2 ☐ 3

☒ % label:

☐ Black ☒ White



Table

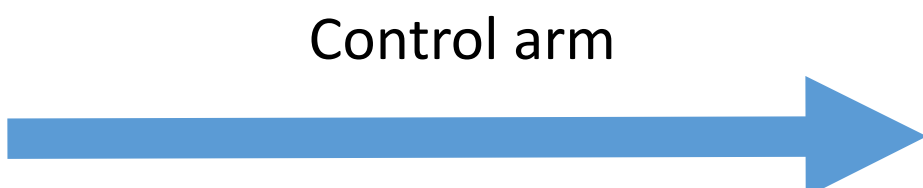
Explan.	Split	Appendicitis	Gallstone disease	Malignancy	Benign foregut	Benign midgut/hindgut	Infection	Congenital	Trauma/injury
Low	Open	469	109	102	44	119	61	85	44
Low	Laparoscopic	33	181	2	5	2	2	0	1
Middle	Open	1231	310	216	107	133	20	36	46
Middle	Laparoscopic	285	1183	71	113	17	21	13	1
High	Open	691	279	979	97	454	24	38	18
High	Laparoscopic	1370	2226	531	349	116	22	9	0

NO P-VALUES???

NO P-VALUES.

REPORTING APPS: DELIVERING AN INTERVENTION

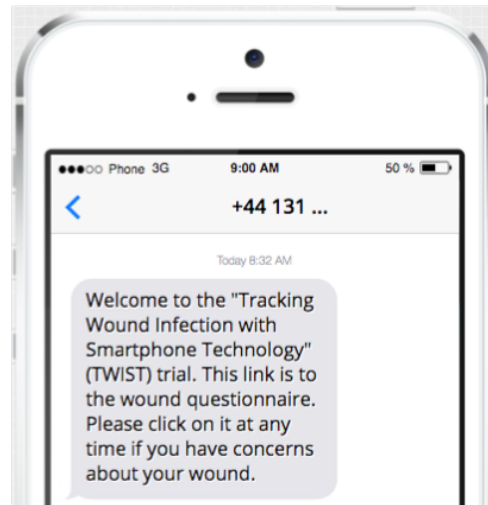
Patient consents to take part in the TWIST Randomised Control Trial



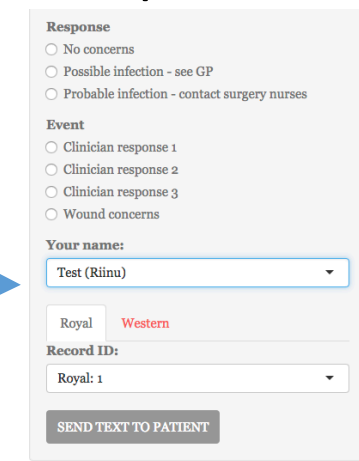
30-day follow-up
by a blinded
clinician



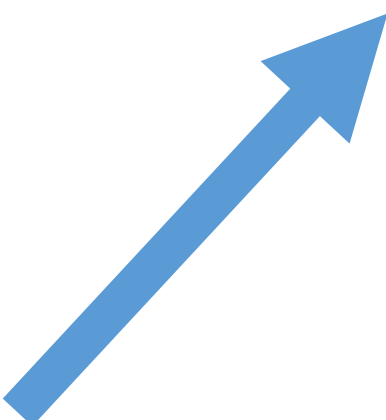
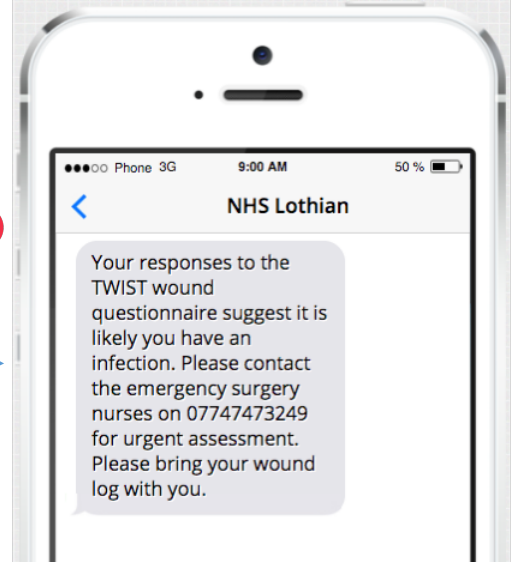
Patient's
phone:



Clinician's
response



Patient's phone:



Response
☐ No concerns
☐ Possible infection - see GP
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Event
☐ Clinician response 1
☐ Clinician response 2
☐ Clinician response 3
☐ Wound concerns

Your name:

Test (Riinu)

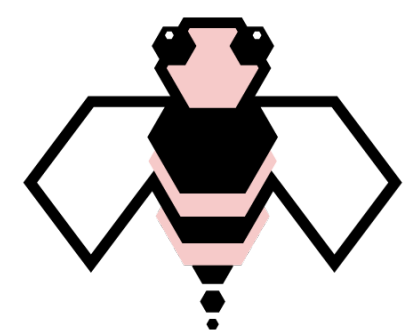
Royal

Western

Record ID:

Royal: 1

SEND TEXT TO PATIENT



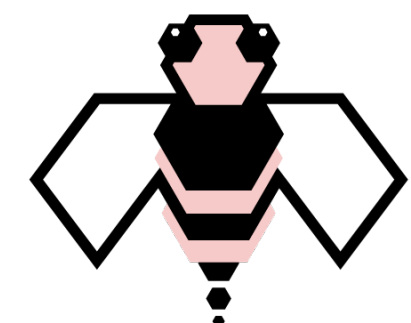


BUT HOW OFTEN SHOULD THEY TALK?

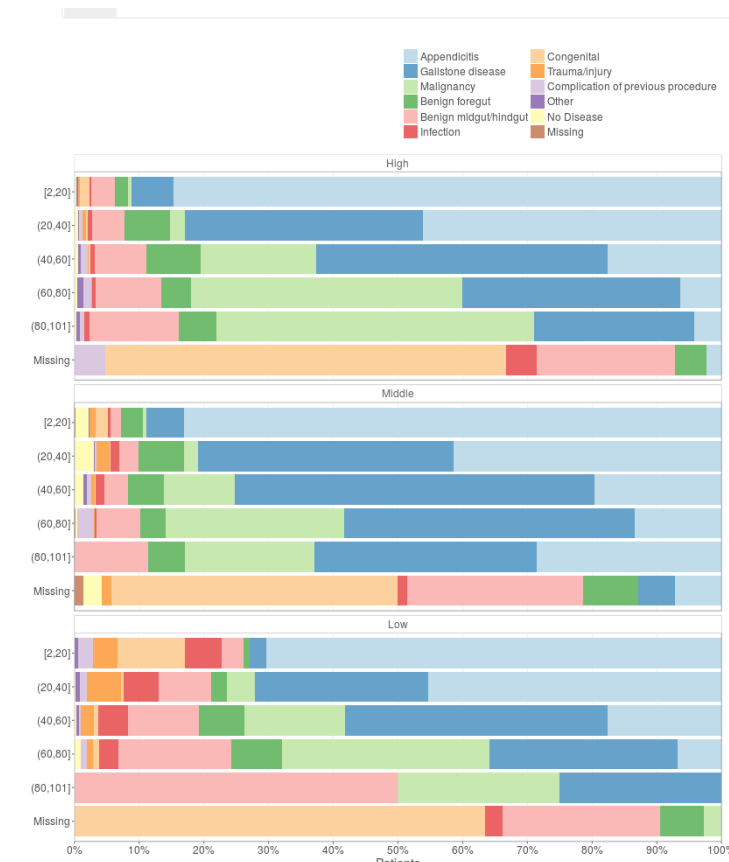
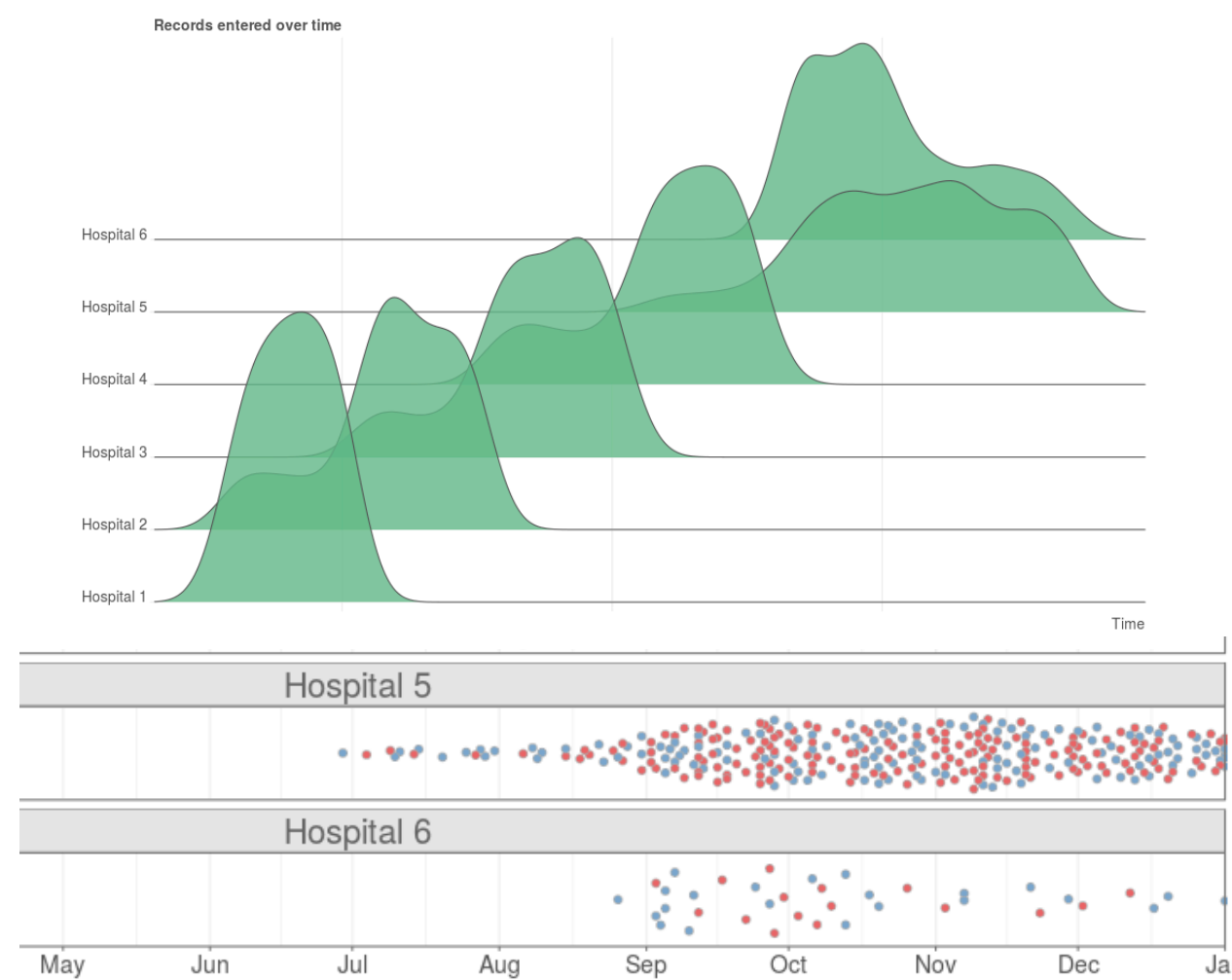
REALLY DEPENDS ON THE PROJECT, COULD BE:

- ▶ **EVERY TIME THE APP IS OPENED**
- ▶ **SCHEDULED (CRON JOBS)**
- ▶ **BASED ON A DATA ENTRY TRIGGER**
- ▶ **“MANUAL” UPDATE**

***REDCAP - RESEARCH ELECTRONIC DATA CAPTURE
(DATABASE MANAGEMENT SOFTWARE)**



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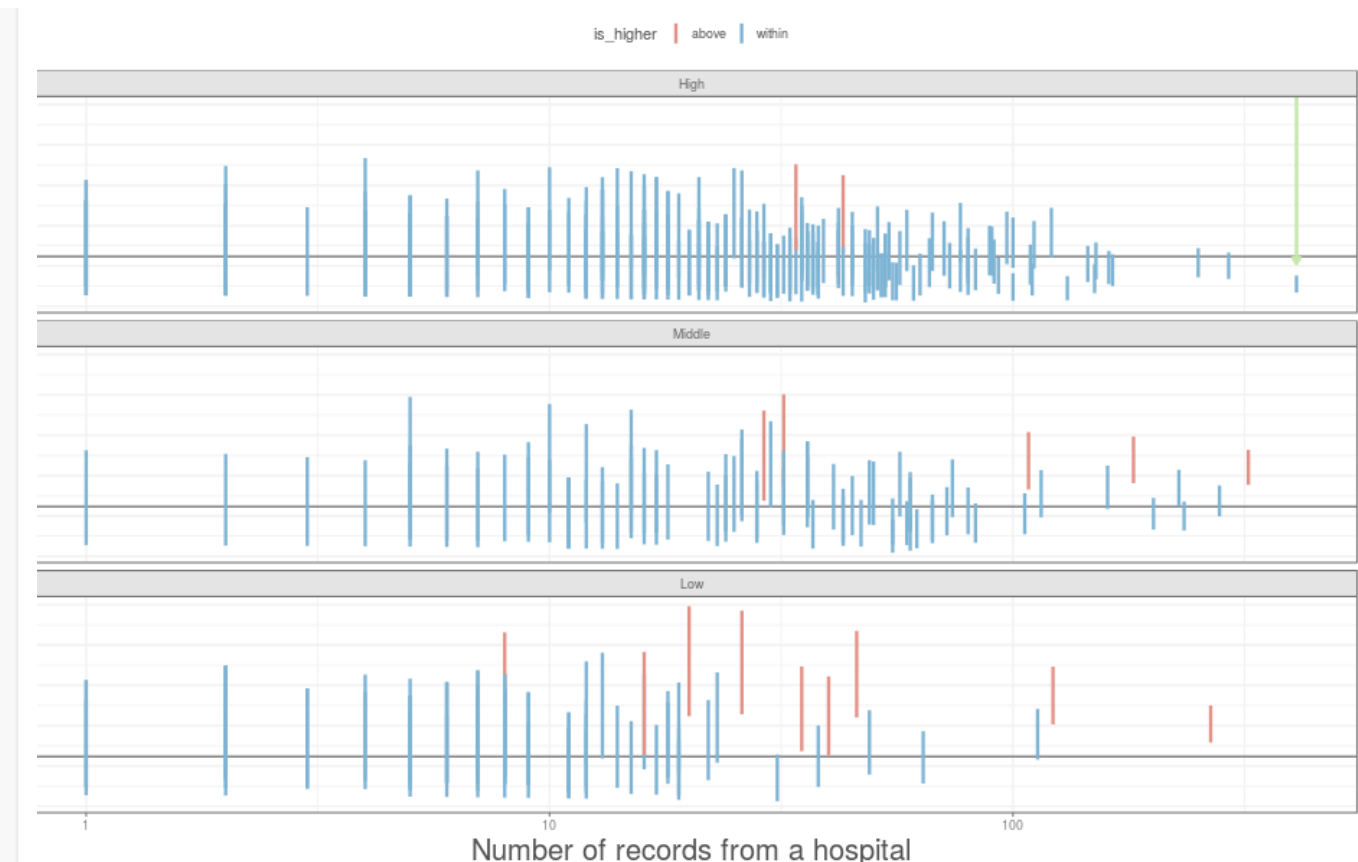
☐ Wound concerns

Your name:

Test (Riinu)

Record ID:

Royal: 1



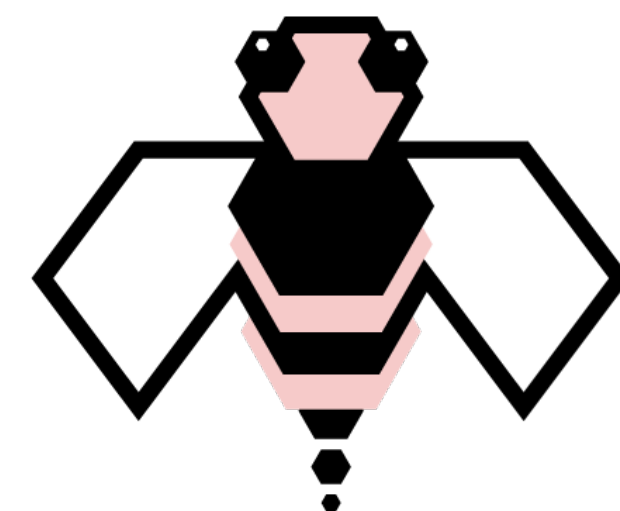
THANK YOU FOR LISTENING!

PRESENTATION WITHIN A PRESENTATION: [HTTP://RPUBS.COM/RIINU/SHINY](http://rpubs.com/riinu/shiny)

GET CODE: [GITHUB.COM/RIINUOTS](https://github.com/riinuots)

GROUP WEBSITE: [SURGICALINFORMATICS.ORG](http://surgicalinformatics.org)

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DATA MANAGER
R.OTS@ED.AC.UK**



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