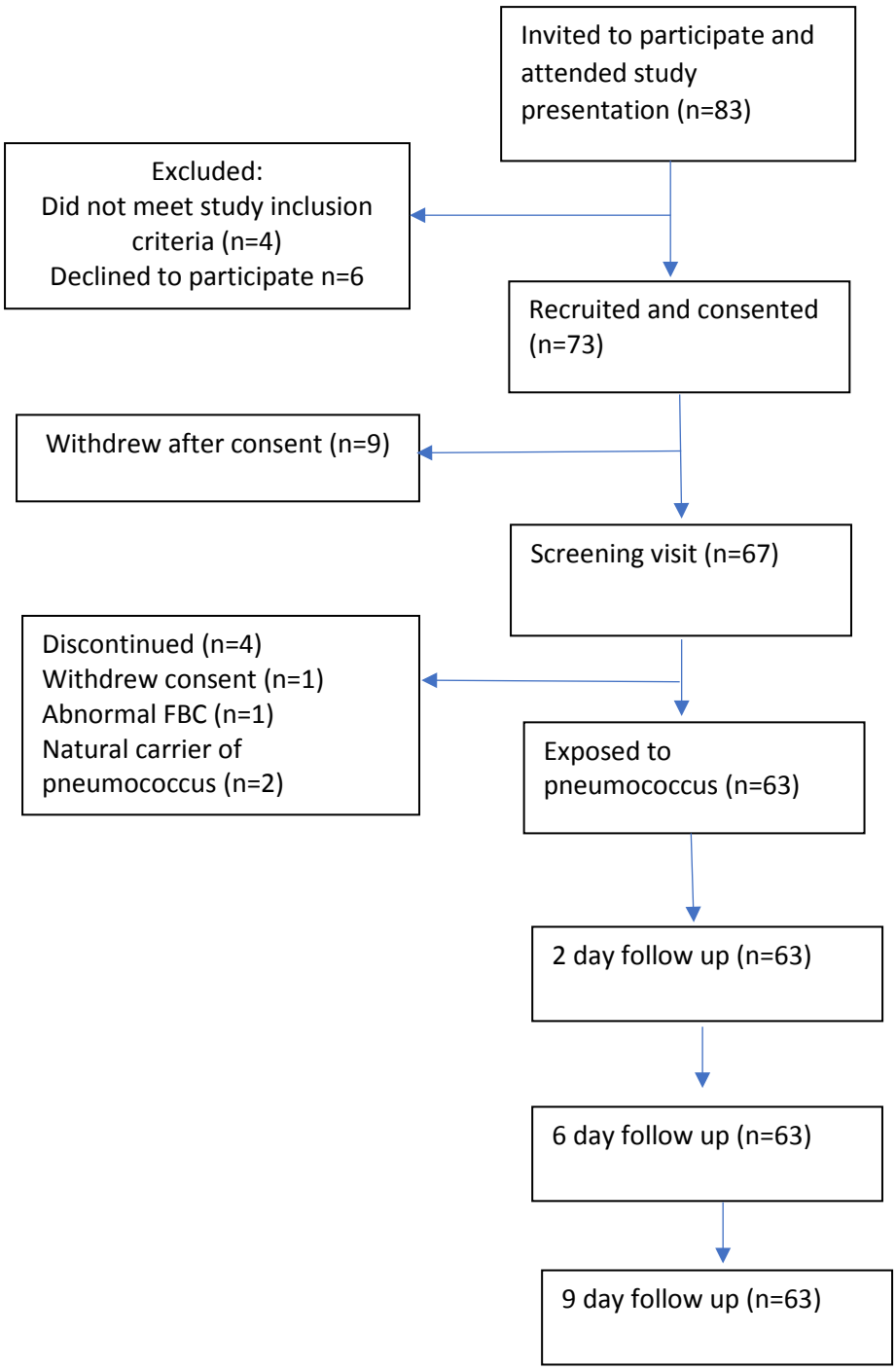
1. Participant flow:



2. Baseline characteristics

Mean age (min-max)	22.6 years (18-45)
Gender (male/female)	23:40

3. Outcome measures

Primary outcome:

Detection of 6B pneumococcus using classical culture at any time point	17.4% (11/63)

Recruitment rate recorded as the number of eligible participants who consent to participate in the study by 6 months

Fully recruited by 6 months.

To inform estimation of sample size for a future trial by measuring the colonization rates in one of the four transmission groups in a full cohort of participants

Wet sniff transmission method was taken forward to the full cohort of 33 people. This has allowed for improved precision of estimated colonization rate in this group for future studies. We can use the colonization rate of 18% (6/33) to inform future sample size calculations.

Secondary outcomes:

Rate of pneumococcal carriage among participants who were expose to and attempted transmission following drying of the bacterial stock is measured using classical culture methods from nasal wash recovered at day two, six and nine	23% (10/43)
Rate of pneumococcal carriage among participants who were expose to and attempted transmission with wet bacteria stock is measured using classical culture methods from nasal wash recovered at day two, six and nine	5% (1/20)

Density and duration of pneumococcus carriage is measured using classical culture methods from nasal wash recovered at day 2, 6 and 9

Median post-exposure colonisation densities (CFU/ml of nasal wash) of the 'wet sniff', 'wet poke' and 'dry sniff' groups were $5.6x10^{1}$ (range $4.3x10^{-1}$-$3.7x10^{6}$), 4.72 (range $4.5x10^{-1}$-$1.25x10^{2}$) and 2.42 (range 1.16-9.55) respectively.

Differences in densities between groups, when comparing the first 40 participants, were not statistically different using a one-way ANOVA test at any time point. Overall density over time for each participant was calculated using area under the curve (AUC), comparison of AUC of the different transmission groups was also not statistically different.

When the wet sniff group was extended, the AUC appeared statistically different between the wet sniff, wet poke and dry sniff groups (14.57 vs. 4.62 vs 4.02 respectively. P=0.04, one-way ANOVA test). However, when applying Dunn's multiple comparison test, no significant differences were observed.

Mean duration of carriage was not different between transmission groups by classical microbiology or by molecular methods of pneumococcal detection. Also, no difference was observed when comparing length of time colonised between wet and dry groups or the poke vs sniff transmission methods (see table below).

Mean and Median days of colonisation for each transmission group, detected by both culture and qPCR methods

	Median – culture (days)	Median-qPCR (days)	Mean- culture (days)	Mean -qPCR (days)
Wet sniff n=33	9	9	9	6.2
Wet poke n=10	9	9	7.3	7.3
Dry sniff n=10	9	6	9	5.7
Dry poke n=10	NA	6	NA	6.1
Full wet group n=43	9	9	8.3	6.5
Full dry group n=20	9	6	9	6
Full sniff group n=43	9	7.5	9	6.1
Full poke group n=20	9	9	9	6.7

Trial participation does not lead to unexpected serious adverse reaction for our participants

No SAE or AE's occurred for any participants during this study.

Assessment of any serious concerns about the acceptability of the interventions and feasibility of the trial procedures

No evidence of any serious concerns from participants for this trial. Fully recruited to the study within 3 months and fully completed the study within 6 months of starting the study. No issues or concerns with contamination/spread of the bacteria into the environment on clothes or other objects.

Colonization rates showed the feasibility of the transmission procedures to allow for movement of the bacteria from the hands to the nose allowing for the study of these colonization episodes.

4. Adverse events

One un-related serious adverse event prior to inoculation but after screening appointment- hospitalisation due to swallowing sewing pin.

No related adverse events associated with this trial.