EGAP Registry Form Schema

Note from EGAP: while the standard workflow is down, this form replaces the registration form on egap.org. For this alternate workflow, the time/date that your email is *sent* will become the timestamp for your registration. It may still take up to three business days to review, upload, and post your submission, but the timestamp will be locked in as described.

B1 Title of Study – *short text*

Increasing Compliance with the Hospital Hand Hygiene Protocol: Nudging or Boosting?

B2 Authors – *if you haven't registered a study with EGAP before, please provide name, title, institution, and email address for each author*

ANONYMIZED

B3 Acknowledgements – *short text*
-

B4 Is one of the study authors a university faculty member? – *multiple choice (SELECT ONE)*

N/A
Yes
No
Other (if selected, short text field appears)

B5 Is this Registration Prospective or Retrospective? – *multiple choice (SELECT ONE)*

N/A
Registration prior to any research activities
Registration prior to assignment of treatment
Registration prior to realization of outcomes
Registration prior to researcher access to outcome data
Registration prior to researcher analysis of outcome data
Registration after researcher analysis of outcome data
Other (if selected, short text field appears)

B6 Is this an experimental study? – *multiple choice (SELECT ONE)*

N/A

No
Yes

B7 Date of start of study – *date (MM/DD/YYYY format)*

01-04-2019

B8 Gate date – *date (MM/DD/YYYY format); gating is discouraged, but if necessary, EGAP policy limits the gate range to 18 months maximum. If you foresee any issues with this, please contact paps@egap.org.*

01-06-2019

B9 Was this design presented at an EGAP meeting? – *multiple choice (SELECT ONE)*
N/A
No
Yes

B10 Is there a pre-analysis plan associated with this registration? – *multiple choice (SELECT ONE)*
N/A
No
Yes

For the next three fields (C1-C3), the response box is a long answer plain text box. Please try to limit your response to ~300 words at most, and use your pre-analysis plan to elaborate further if necessary. Also, the plain text field limits formatting, so please do not include bullet point lists with multiple indentations or other complicated formatting.
C1 Background and explanation of rationale – *long answer*

A large-scale investigation in 2017 of 48 hospitals, carried out by the Health and Youth Care Inspectorate (IGJ), the governmental Dutch healthcare inspection, found that infection prevention in Dutch hospitals is currently still substandard. The Dutch minister of Healthcare consequently emphasized the urgency to improve infection prevention of hospitals and hospital employees (Benschop, 2018). However, stimulating employees to behave according to regulations appears easier said than done.

A promising solution to increase compliance can be found in the behavioural social sciences that study choice architecture (Münscher et al., 2016). The concept of *nudging* is developed to make small changes in the decision environment of actors that aim to influence their behaviour (Thaler and Sunstein, 2008). Nudging is being increasingly applied in health care and has led to promising results (Nagtegaal et al., forthcoming). Yet its normative implications as well as its long-term effects remain debated (Gingerich, 2015; Hertwig, 2017). In reaction to these shortcomings, a more recent approach has been developed that aims to increase the decision-making capacity of actors rather than influencing their decision environment. This approach is known as *boosting* (Hertwig and Grüne-Yanoff, 2017), yet its application has thus far been limited.

For a master's thesis, a field experiment will be developed that aims to increase compliance of nurses in a Dutch hospital with the hand hygiene protocol by testing both the effect of behavioural nudging and that of boosting. The research question that guides the thesis
is: *what is the effect of behavioural nudging and boosting on compliance with hand hygiene protocols?*

On basis of a pre-experiment analysis, two subtypes of nudging (i.e. reframing) and boosting (i.e. increasing risk literacy) are chosen and further developed, and will be tested in practice.

C2 What are the hypotheses to be tested/quantities of interest to be estimated? – *long answer*

The main hypotheses for this study express the expectation that both the nudge and the boost will be effective in increasing compliance:
H1: Compared to the control group and pre-tests, employees subject to the reframing intervention will have higher levels of in hand hygiene compliance.
H2: Compared to the control group and pre-tests, employees subject to the risk literacy intervention will have higher levels of hand hygiene compliance.

Besides, a difference in effectiveness over time is expected:
H3: The nudging intervention is likely to have a more immediate effect but decrease over time.
H4: The boosting intervention is likely to have a less immediate effect but increase over time.

C3 How will these hypotheses be tested? – *long answer*

Hypotheses 1-4 will be tested first by observations. In multiple close observations at four points in time (two before and two after the intervention), every potential moment of hand hygiene is noted including whether the employee complies to the protocol. Every observation session results into a percentage that depicts the number of hand hygiene moments where hand hygiene is applied, divided by the total amount of hand hygiene moments.

Besides, a pre- and post-intervention survey will be sent out to all employees in the wards. This serves two goals. First, hypotheses 1 and 2 will can be tested by means of *perceived* levels of compliance. Second, a number of post hoc analyses can be executed that assess differences in knowledge and perceptions of employees of the protocol.

The variance between the means (of compliance scores, compliance perception scores and additional analyses) will be analysed across the two treatment groups and one control group by means of ANOVA's. Additionally, the survey allows for some control variables to be tested along the compliance perception scores by means of regression analyses.

C4 Country – *short answer*

The Netherlands

C5 Sample Size (# of Units) – *short answer*

Unknown (Type of units for observations: potential hand hygiene moments, which cannot be decided prior to experiment; type of units for survey: employees).

C6 Was a power analysis conducted prior to data collection? – *multiple choice (SELECT ONE)*

Yes
No
N/A
Other (fill in the blank)

C7 Has this research received Institutional Review Board (IRB) or ethics committee approval? – *multiple choice (SELECT ONE)*

Yes

No
N/A
Other (fill in the blank)

C8 IRB Number – *short answer*
-

C9 Date of IRB Approval – *short answer*
-

C10 Will the intervention be implemented by the researcher or a third party? If a third party, please provide the name. – *multiple choice (SELECT ONE)*
Researchers
Other (fill in the blank)

C11 Did any of the research team receive remuneration from the implementing agency for taking part in this research? – *multiple choice (SELECT ONE)*
Yes (The executing student receives an internship remuneration for the hours spent in the hospital)
No
N/A
Other (fill in the blank)

C12 If relevant, is there an advance agreement with the implementation group that all results can be published? – *multiple choice (SELECT ONE)*
Yes
No
N/A
Other (fill in the blank)

C13 JEL classification(s) – *short answer; please provide alphanumeric code(s)*
-

Methodology – *select all that apply*
Experimental Design
Field Experiments
Lab Experiments
Mixed Method
Statistics

Survey Methodology

Policy – *select all that apply*

- Conflict and Violence
- Corruption
- Development
- Elections
- Ethnic Politics
- Gender
- Governance

Certification – *indicate agreement*

By submitting this form and accompanying documents with EGAP, I confirm that I have rights to put this information in the public domain and I understand that this information will remain on the EGAP registry in perpetuity, regardless of whether the research is subsequently implemented or not.

Confirmation – *indicate agreement*

You should receive a confirmation of your registration within three business days. Your registration is considered complete only when confirmation is received. If you do not receive confirmation within three business days please contact paps@egap.org. Hitting SAVE at the bottom of this page will submit the registration. Please only do so when you are ready to submit. ONCE YOU HAVE HIT SAVE AT THE BOTTOM OF THIS PAGE PLEASE DO NOT HIT THE BACK BUTTON. Doing so creates multiple registrations, and we will delete all but the most recent. If you accidentally created multiple registrations, please contact paps@egap.org

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Additional Documentation – *please attach your pre-analysis plan, survey instrument, or any other files associated with the registration (files must be under 5MB)*