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Using behavioural insights to reduce gift-giving in a Tanzanian public hospital

Findings from a mixed-methods evaluation

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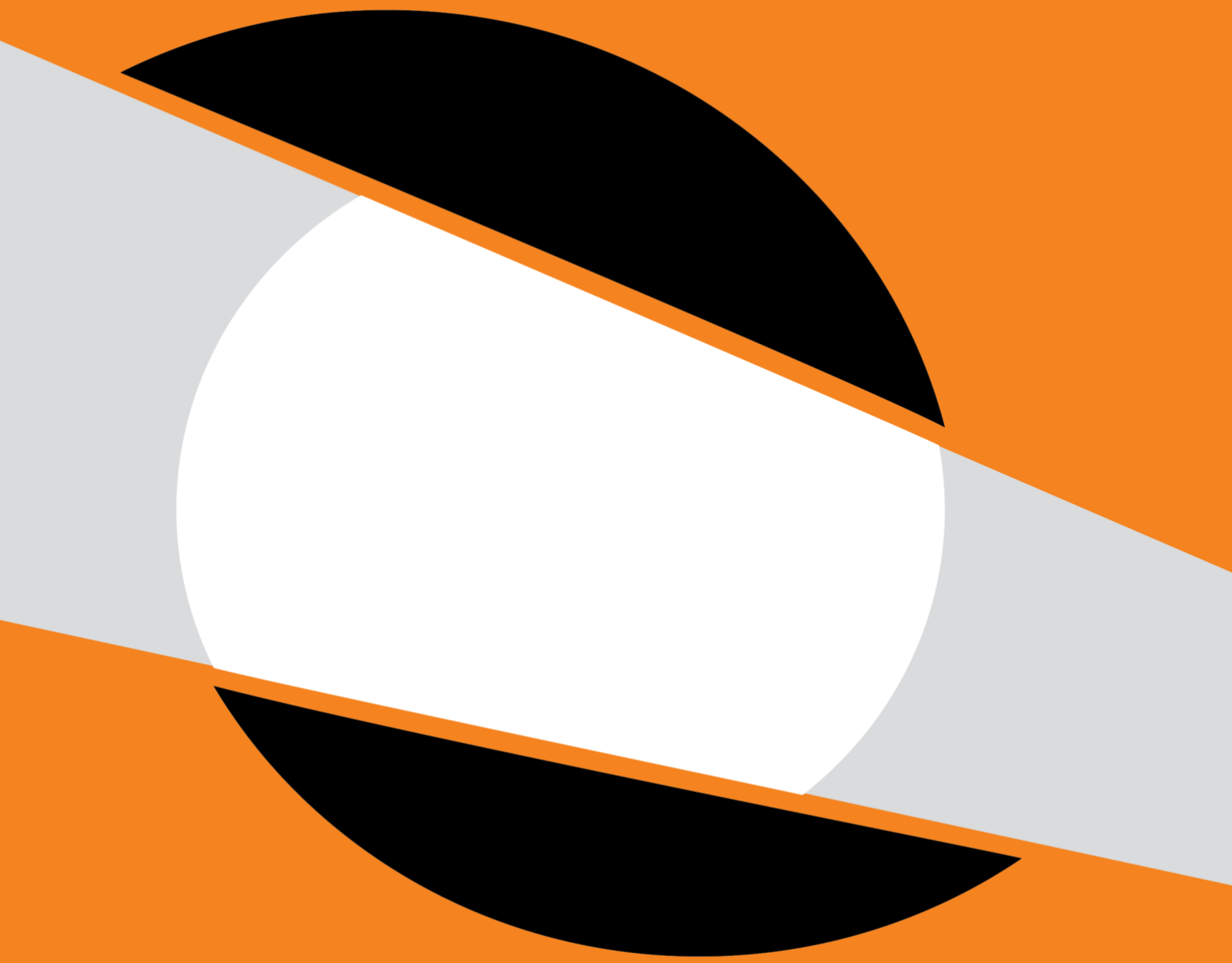

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1 Executive summary

Previous research has shown that social norms of gift-giving and reciprocity are linked to patterns of bribery in the Tanzanian health sector.[1,2] Health facility staff that do not accept a gift or reciprocate a favour are often punished by means of gossip, criticism, and even social isolation, further enforcing the norms. On the other hand, gift-giving and bribery exacerbate inequality in access to healthcare, as patients who are able and willing to give gifts might receive preferential treatment at the expense of those who cannot afford them. At the extreme, gifts and other unofficial payments become a requirement for access to services, with life threatening consequences for the most vulnerable groups.

In this mixed-methods evaluation we aimed to understand the feasibility and potential impact of a multi-component behavioural intervention on rates of gift exchange between users and staff of a public regional referral hospital in Dar es Salaam, Tanzania. The intervention aimed to shift users' (i.e. patients and individuals accompanying them to the health facility) and health providers' attitudes and perceived social norms around gift-giving, and to reduce actual exchange of gifts (i.e. the behaviour). It included the following components:

- **Posters** placed around the hospital, clarifying the hospital's and the Ministry of Health's stance that all forms of gift-giving from patients to staff are considered corruption, and may have consequences for staff, and asking hospital users not to give gifts.
- **Desk signs** placed in consultation rooms, on one side reiterating the message shown on the poster, and on the other side providing simple steps for healthcare providers to politely refuse gifts.
- The selection and training of **Staff Champions**, whose role was to persuade their peers about the need to refuse gifts and to support them in doing so.
- Messages sent to **Staff Champions**, via a WhatsApp group, encouraging and supporting them to continue playing their role.
- **Letters** sent to healthcare providers at the hospital, clarifying the Ministry of Health's stance towards gift-giving, and introducing the other components of the intervention.

1 Baez Camargo, C., R. Sambaiga, E. Kamanyi, S. Kassa and C. Stahl (2017). Behavioural influences on attitudes towards petty corruption: a study of social norms, automatic thinking and mental models in Tanzania. Basel Institute on Governance.

2 Baez Camargo, C and R. Sambaiga (2016). Between condemnation and resignation: a study on attitudes towards corruption in the public health sector in Tanzania. In Torsello D. (ed.), Corruption in Public Administration: An Ethnographic Approach, Edward Elgar Publishing.

The evaluation was run at a single hospital and was not designed to provide a definitive causal estimate of the effect of the intervention on target behaviours.[3] We did, however, attempt to triangulate a range of quantitative and qualitative data, along with the intervention's theory of change, to assess the impact of the intervention and the mechanisms through which it worked. We also used this pilot to increase understanding of how anti-corruption messages spread through social networks. In particular, we attempted to gauge how perceptions of the intervention spread through the professional and social networks of healthcare staff, and draw implications for the implementation of anti-corruption campaigns in similar contexts.

Overall, this evaluation aimed to generate evidence that will be useful for understanding both the potential of the specific intervention we are piloting and anti-corruption efforts of a similar nature more broadly.

Findings:

- The intervention was highly feasible at the hospital at which we piloted it, and it was implemented at relatively high fidelity. The most intensive part of the intervention, the selection and training of 'Staff Champions', was enabled by a supportive hospital administration and the availability of a skilled local workshop facilitator. Other intervention materials largely remained in place during the pilot, partly due to the role of Staff Champions in maintaining them.

- Relative to the baseline period (the 4 weeks immediately prior to intervention delivery), we find substantial reductions (14 – 44%) in survey-based measures of gift-giving intentions, attitudes and positive beliefs among hospital users after approximately 8 weeks following the start of the intervention.

- In-depth interviews with hospital users, Staff Champions and other healthcare providers suggest that the intervention had helped to discourage gift-giving in some cases, but not in others. The intervention was reported to be less effective when patients or providers held a strong belief that offering and accepting gifts out of gratitude is acceptable if it occurs at the discretion of the user and after a service is provided.

- Staff Champions mainly informed their colleagues at staff meetings about the interventions. Personal conversations about gift-giving among providers required a certain level of trust. Information at staff meetings led to follow-up conversations of the

3 Note that we developed the final evaluation approach after considering various experimental and quasi-experimental designs (QEDs) to conduct a rigorous impact evaluation. However, due to practical considerations (implementation capacity, budget, timeline) and uncertainty around assumptions required for certain QEDs (e.g. parallel trends), we settled on the described mixed-methods approach.

participants with their colleagues. This way, Staff Champions disseminated information about the intervention also to providers who worked in non-treated departments of the hospital.

- Staff Champions who were doctors and nurses mainly informed colleagues in other departments who had the same professions (e.g., at meetings of head nurses). Staff Champions with technical professions (e.g., radiologists) reached colleagues with a more diverse set of professions. This implies that the recruitment of Staff Champions from various professions was helpful in disseminating information about the intervention widely.

- Some parts of the intervention (e.g. the posters, and the role of Staff Champions in persuading colleagues) appeared to be more effective than others (e.g. letters to providers and tips on the back of desk signs for how to refuse gifts). More generally, the intervention was perceived to work via raising awareness of the injunctive norm (i.e. that all forms of gift-giving from users to providers are considered corruption and could have consequences for the healthcare provider) at the hospital, and in changing attitudes by highlighting the negative consequences of gift-giving, rather than changing perceptions of the descriptive norm (i.e. of gift-offering and gift-accepting being a common practice at the hospital).

- The high levels of support from the hospital administration and the presence of research assistants throughout the pilot appear to have supported the implementation and promise of the intervention. Further pilots of this intervention at different locations and with less intensive / visible monitoring could assess the generalisability of these findings.

2 Gift-giving in the Tanzania health sector

Previous research by members of the research team found that social norms of gift-giving and reciprocity are linked to patterns of bribery in the Tanzanian health sector.[4,5] Health facility staff that do not accept a gift or reciprocate a favour are often punished by means of gossip,

4 Baez Camargo, C., R. Sambaiga, E. Kamanyi, S. Kassa and C. Stahl (2017). Behavioural influences on attitudes towards petty corruption: a study of social norms, automatic thinking and mental models in Tanzania. Basel Institute on Governance.

5 Baez Camargo, C and R. Sambaiga (2016). Between condemnation and resignation: a study on attitudes towards corruption in the public health sector in Tanzania. In Torsello D. (ed.), Corruption in Public Administration: An Ethnographic Approach, Edward Elgar Publishing.

criticism, and even social isolation, further enforcing the norms. On the other hand, gift-giving and bribery exacerbate inequality in access to healthcare, as patients who are able and willing to give gifts might receive preferential treatment or, at the extreme, informal payments are a requirement for access to services.

During in-depth exploratory work, we found that outright 'bribes', i.e. informal payments to staff in medical facilities to obtain faster or better services or to access services at all, had decreased significantly since 2015, as a consequence of tangible anti-corruption activities by the government of President Magufuli and citizens' fear of being caught in and punished for activities of corruption. However, gift-giving from patients to health facility staff remains a relatively common and accepted practice. We therefore decided to focus on a reduction in gift-giving as the target of this project.

We defined gift-giving as money or goods given from a patient/caregiver to facility staff after a service has been obtained. This may happen either during the same visit (e.g. at the end of consultation) or later. We identified two main purposes of gift-giving: 1) instrumental, i.e. giving of a gift in order to form a good relationship with the recipient and obtain preferential treatment or some informal benefit at a later occasion; 2) gratitude, if treatment was seen as successful.

In interviews, we found that many but not all participants (both healthcare users and providers) viewed gift-giving as a normal and indeed positive part of Tanzanian society. Our exploratory research also uncovered that gift-giving is viewed as distinct from corruption and thus that, even where respondents agreed that corruption was problematic, gift-giving (especially when given out of gratitude) was not necessarily included in this category.[6]

However, certain Tanzanian stakeholders, including the Medical Association of Tanzania (MAT), which represents doctors across the country, see gift-giving as a gateway to corruption and a potential driver of unequal access to health services and thus as an undesirable practice, regardless of the term used to describe it.

6 We used the Swahili word 'zawadi' to describe gifts, and 'rushwa' to describe corruption. This was based on exploratory research where participants had indicated these terms as the most adequate to describe the intended concepts.

3 The intervention

In light of this exploratory research, we developed and implemented an intervention to shift users' (i.e. patients and individuals accompanying them to the health facility) and healthcare providers' attitudes and perceived social norms[7] around gift-giving, and to reduce actual exchange of gifts (i.e. the behaviour). The intervention aimed to address both the 'demand' and 'supply' side of gift-giving. We planned the following components of the intervention:

1. **Champions workshop:** A half-day workshop for selected medical staff in the intervention departments (the 'Staff Champions') to prepare them for their peer-to-peer role in the intervention.[8] Champions were also invited to join a WhatsApp group with other champions so that they can exchange tips and support.
2. **Messages to champions:** Weekly group WhatsApp messages sent over a period of 4 weeks to remind the champions to promote the intervention messages, to encourage them, and to provide tips on how to be an effective champion.
3. **Letter sent to all staff in intervention departments:** Signed by the president of the Medical Association of Tanzania, these letters highlight the need to refuse gifts offered by patients.
4. **Desk signs:** Placed on desks in reception area and consultation rooms, with two sides:
    a. Patient-facing: Message asking patients not to offer gifts to hospital staff and suggesting a substitute behaviour.
    b. Provider-facing: Message reinforcing that gift-giving is corruption and providing four steps to refuse a gift.
5. **Posters**: Displayed in the waiting and reception areas, highlighting that gift-giving is considered corruption and asking users not to offer gifts.
6. **Follow-up visits to maintain posters and desk signs**: Research assistants, with the help of Staff Champions, visited the facility twice during the pilot period to check the intervention materials and replace them where necessary.

Intervention materials can be found in the Appendix.

7 This includes both expectations of what others do ('descriptive norm' or 'empirical expectations') and expectations about what others think they should do ('injunctive norm' or 'normative expectations') (see: Cialdini, R. B., Demaine, L. J., Sagarin, B. J., Barrett, D. W., Rhoads, K., & Winter, P. L. (2006). Managing social norms for persuasive impact. Social influence, 1(1), 3-15; Cristina Bicchieri, Norms in the Wild. How to Diagnose, Measure, and Change Social Norms. Oxford University Press, 2016).

8 Champions were asked to a) work with the implementation team to put up posters and desk signs (see below) in the intervention departments, b) speak to their colleagues about gift-giving to encourage them to decline any gifts offered.

A detailed logic model for the intervention can be found in the next section, along with a list of data sources used to evaluate the intervention.

4 Evaluation design

We used a mixed-methods, theory-based design to evaluate the intervention. This involved collecting a range of quantitative and qualitative data from before, during and after the intervention to trace through the intervention theory of change. While this evaluation design does not allow us to be definitive about the causal effect of the intervention, it can assess evidence of promise, feasibility and sustainability, and shed light on the ways in which it might have affected outcomes.

The theory of change we developed the intervention is shown below, along with data sources we planned to collect in order to investigate the theory:

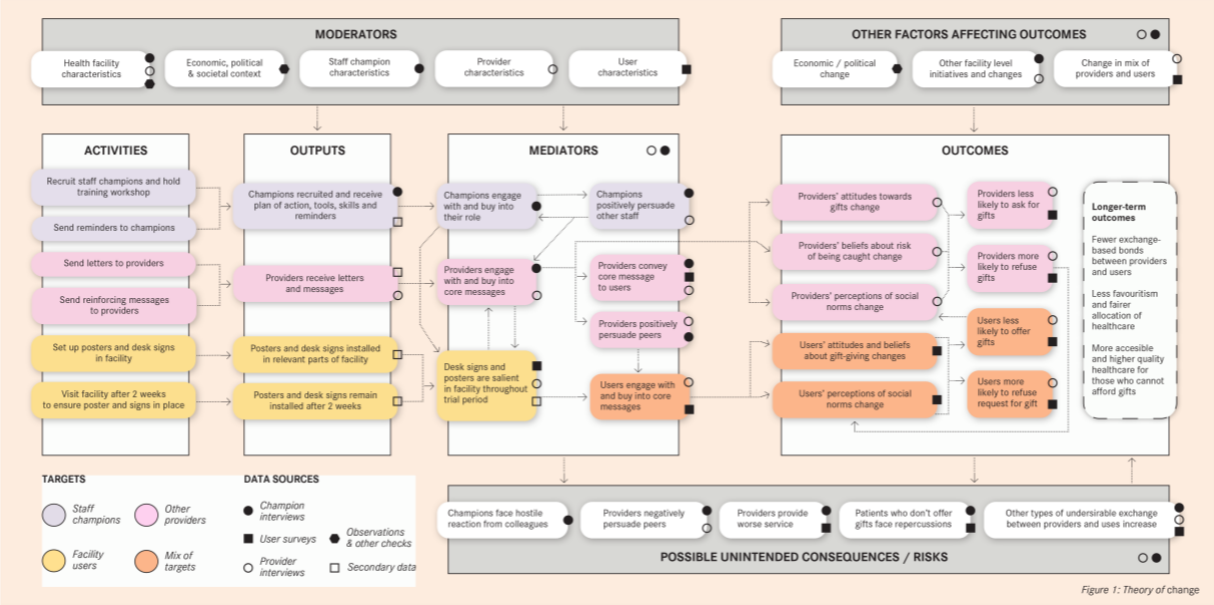


Figure 1: Theory of change

We aimed to answer the following high-level research questions:

1. **Feasibility and fidelity:** Can the intervention be implemented as planned in large public hospitals of the type found in Dar es Salaam?
2. **Reach, dose and engagement:** Do Champions, healthcare providers and users notice and remember the different components of the intervention? How do they engage with it (if at all)?
3. **Role of social networks:** How do staff members' social networks facilitate the spreading of the intervention message and mediating the impact of the intervention?
4. **Impact:** What is the impact of the intervention on gift-giving and gift-accepting behaviour, social norms and attitudes among facility staff and users?
    a. **Measured changes:** How do average user experiences and perceptions change after the intervention is installed? To what extent can this be attributed to the intervention?
    b. **Perceived impacts:** What is the range of healthcare providers and users' perceptions of the impact of the intervention? What mechanisms appear to affect these perceived impacts?
    c. **Potential backfire effects:** Does the intervention appear to have any backfire effects?
5. **Sustainability:** What are healthcare providers and users' perceptions on the sustainability of the intervention and its impacts beyond the pilot period?

To answer these questions, we planned to combine the following sources of information. Due to implementation issues, the actual data collection deviated slightly from what was planned, as described in the *implementation, data collection and analytical methods* section below.

- **Exit surveys of hospital users** conducted before and after the intervention was implemented. We planned to conduct the baseline survey over a 3-week period immediately preceding the intervention start date (measured from the date of the staff champions training workshop). The endline survey was planned for a roughly 4-week period beginning 4 weeks after the posters and desk signs had been installed inside the hospital.
- **Observations and other monitoring** assessing implementation of the intervention and engagement with it. This consisted of observations of the Staff Champions' training workshop, and monitoring of the posters and desk signs for 4 weeks after they were installed.
- **Interviews of Staff Champions, other healthcare providers, and facility users,** assessing the reach of the intervention and how it was experienced and perceived by these groups, as well as their perceptions of its impact. To answer the qualitative research questions, we planned to conduct semi-structured one-on-one interviews with

a diverse sample from each group, starting 4 weeks after the intervention materials had been installed inside the facility.

- **Network survey of medical providers** to understand how the intervention messages spread through the social network of facility staff. To facilitate this analysis, we planned to 'treat' some but not all departments/units within the pilot hospital (see more on treatment assignment in the setting section below). During the post-intervention interviews, we planned to obtain information from staff in both the 'treated' and 'untreated' departments/units about which other staff in the facility they interact with and whether/how these staff perceived the intervention, and use this information to construct a model of the staff social networks and their role in spreading information about the intervention.
- **Administrative data and implementation checks** regarding messages and letter delivery/receipt (where possible) and reports of poster and desk sign installation at the time of installation and two weeks after.
- **Secondary and anecdotal data** about the health facility in which the intervention is implemented and the broader socioeconomic and political context surrounding implementation (e.g. from official health statistics, hospital administrators, and local research assistants).

5 Implementation, data collection and analytical methods

Below we describe the implementation of the pilot (including deviations from the evaluation protocol) and then describe the data that was collected.

5.1 Setting

We initially planned to implement and evaluate the intervention in at least two public hospitals in Dar es Salaam. Following formative interviews and focus groups with providers and patients, we targeted large health facilities where gift-giving was believed to be relatively prevalent. We also considered practical factors that would affect our ability to implement the intervention and run the evaluation. Unfortunately, due to delays and lack of engagement from management at some hospitals, we eventually conducted the pilot at only one hospital.

The pilot was conducted at **Mwananyamala Hospital** – one of three Regional Referral Hospitals in Dar es Salaam. To our best knowledge, Mwananyamala has around 350 patient beds. According to a 2018 report, it served over 1,600 outpatients per day and employs around

350 staff across 10 Departments and 20 Sections. [9] During exploratory research, Mwananyamala was mentioned as a facility where gift-giving is known to occur.

To facilitate the social network analysis, the intervention was not implemented in all parts of the hospital. Table 1 below lists the 'treated' and 'untreated' parts of the hospital.

Intervention areas	Non-intervention areas
The main courtyard building: • A registration and payment window • General Outpatient Services • Minor Surgery • Surgical services Orthopaedic • Surgical specialities Eye Clinic • Surgical specialities Dental • Radiology and imaging services / X ray • Rehabilitative services Physiotherapy **Maternal and Child Health Block:** • Obstetric/gynaecology department • Radiology and imaging services / Radiology • Paediatric and child health department	**RCH Building:** • Insurance • The Medical Outpatient Department-Clinic • ENT clinic • Paediatric clinic • Reproductive, maternal, newborn, and child health (RMNCH)-clinic • Dermatology clinic **CTC building** **Wards:** • Male wards (surgery and medical) • Female wards (surgery, medical, and gynaecology) • Labour ward

Table 1: Assignment of parts of the hospital for intervention implementation

9 http://www.tzdpg.or.tz/fileadmin/documents/dpg_internal/dpg_working_groups_clusters/cluster_2/health/Key_Sector-Documents/External_Evaluation_Documents/Revised_EHPA_2018_Report_signed_27_11_2018.pdf, accessed 4 February 2021

5.2 Implementation activities and timeline

The pilot was launched with baseline data collection on 25 October 2021, while endline data collection was completed on 25 February 2022. The full list of implementation activities is listed in the table below:

Activity	Timing	Notes
Baseline survey data collection	25 October to 17 November 2021	3.5 week period
Champions training & observations	23 November	Intervention launch *~1 week after end of baseline data collection*
Posters and desk signs installed	24 – 25 November	
Implementation checks and adjustments	29 November, 10 December, 27 December	
Champion interviews & network survey	24 December to 7 January 2022	*~1 month after intervention launch* Christmas holidays occurred between 24 and 26 December New year holidays occurred on 1-2 January
End user interviews	20 December to 31 December	
Endline survey data collection	10 January to 3 February	3.5 week period *~7.5 weeks after end of baseline data collection*
Other provider interviews and network surveys	8 February to 17 February	*~2.5 months after intervention launch*
Intervention sustainability observations	25 February	*~2 months after last implementation check*

Table 2: Timing of implementation activities

Due to project delays, driven primarily by the COVID-19 pandemic and uncertainty about funding, the pilot was launched later than initially planned. The pilot period ended up spanning the Christmas and New Year holidays. While this is not ideal, we do not have clear reasons to believe that this would have biased the pre-post exit survey comparison in a specific direction. It may, however, limit the extent to which the results generalise to periods when gift-giving is

less salient. It may also reduce generalisability by affecting the composition of individuals who were available to be surveyed or interviewed during the pilot.

While the COVID-19 pandemic was ongoing at the time of the pilot, there is little evidence to suggest that the state of the pandemic in Dar es Salaam changed significantly over the pilot period. According to official statistics (which are heavily influenced by the rate of testing) the number of new confirmed cases in Tanzania averaged less than 50 per day from November 2021 to early December, before peaking at roughly 200 cases per day at the end of December. It then fell below 50 per day by the end of January 2022 and remained relatively low for the rest of the pilot period. We did not receive any reports from research assistants or members of the project team in Dar es Salaam that conditions at the hospital were affected by these fluctuations. We therefore do not believe that it affected the pre-post comparison to any significant degree, though again the ongoing pandemic may affect the generalisability of the results.

The timing of the endline data collection activities, relative to intervention implementation, also deviated slightly from what was planned. This was due to constraints on the availability of research assistants.[10] While these activities were planned to begin in parallel roughly 4 weeks after the installation of desk signs and posters, the actual timing was:

- Champion interviews and network surveys; end user interviews: ~4.5 weeks after
- Endline end user exit survey: ~7.5 weeks after
- Other provider interviews and network surveys: ~10.5 weeks after

The relative delay of the endline surveys and the interviews of other providers may affect our results in two ways. Firstly, it allows more time for unrelated factors or time trends to affect the comparison between baseline and endline survey responses. Secondly, it hampers providers' recall of the intervention in interviews. Since we are not relying on any single source of information for this evaluation, we do not believe these factors have substantially affected our overall conclusions.

5.3 Exit surveys of hospital users

We conducted surveys of hospital users (patients, or people visiting or accompanying patients) as they were leaving the hospital. The same questionnaire was used during both baseline and endline data collection (see Appendix – data collection materials for a link to the full questionnaire). The questionnaire, which was developed using numerous rounds of cognitive

10 This was partly driven by losing one research assistant during baseline survey data collection over concerns regarding fabricated data. See next section for more details.

interviews and user-testing to maximise participants' comprehension and candour, asked about:

- Perceived social norms around gift-giving at the hospital, including perceptions about both other users' behaviour and providers' behaviour
- Whether the user offered a gift during their visit that day, details about any gift, and the health provider's reaction to the offer (i.e. whether they accepted it)
- Reasons for offering or not offering a gift during their visit
- Exposure to posters, desk signs or any message conveyed by the health provider regarding gift-giving
- Whether the user would consider offering a gift in the future at the hospital
- Attitudes towards gift-giving
- Demographic characteristics and other variables expected to be moderators, including whether the user had health insurance, the reason for visiting the hospital, and satisfaction with the service provided during the visit.

In the survey, we also differentiated between two distinct motivations for giving gifts: "to ensure a good relationship with the provider and get better service in the future" and "to say thank you to the provider for good treatment". We asked about perceptions, attitudes and behaviour around both motivations for gift-giving in order to ensure we captured data about gift-giving regardless of motivation.

These questions were combined into three composite outcome measures, specified in Table 3 below.

Outcome measures	Survey suggestions
Primary outcome	
Gift-offering propensity score[11]	• Whether respondent offered a gift during their visit (0, 1) • Whether respondent would consider offering a gift to staff at this facility in the future (0, 1) • Score is the sum of these measures (0, 1, 2)
Secondary outcomes	
Enabling social norms score	• What percentage of users at the facility the respondent believes offers gifts out of gratitude (converted to a binary score, 1 = around half or more; 0 = less than half or don't know) • What percentage of users at the facility the respondent believes offers gifts for instrumental reasons (scored as above) • What percentage of doctors at the facility the respondent believes refuses gifts given out of gratitude (1 = fewer than half; 0 = half or more, or don't know) • Whether respondent believes their family would want them to offer a gift out of gratitude (1 = yes; 0 = no or would not mind either way) • Whether respondents' believes their family would want them to offer a gift for instrumental reasons (i.e. to get better service in the future) (1 = yes; 0 = no or would not mind either way) • Whether respondent believes a user who offers a gift for instrumental reasons is likely to get better service at the facility than those who do not bring fits (1 = better service; 0 = same, worse or not sure) • Whether respondent believes a user who offers a gift out of gratitude is likely to get better service at the facility than those who do not bring gifts (coded as above) • Whether respondent believes that health providers at the facility generally give better service in the future to users who give gifts (1=strongly agree or agree; 0 = neither agree/disagree, disagree, strongly disagree or not sure) • **Score is the sum of these measures (0, 1, 2, 3, 4, 5, 6, 7, 8)**
Enabling attitudes score	• Whether respondent reports that offering a gift to a health worker to show gratitude is sometimes or always the right thing to do (vs. the wrong thing to do) (0, 1)

11 Prior to running the trial, we committed to this composite measure rather than whether or not the respondent offered a gift during their visit. This was because we were uncertain about how frequently people offer gifts, and therefore believed a measure combining behaviour during the visit and intentions for future visits would be better at detecting the impact of the intervention.

	• Whether respondent reports that offering a gift to a health worker to get better service in the future is sometimes or always the right thing to do (vs. the wrong thing to do) (0, 1) • Whether the respondent feels that a health provider is obliged to accept a gift from a patient (1 = yes, obliged or 'it depends'; 0 = no, not obliged) • **Score is the sum of these measures (0, 1, 2, 3)**

Table 3: Outcome measures and underlying survey items

In total, 1,313 survey responses were recorded across baseline and endline by four research assistants standing in various outdoor locations of the hospital. However, we dropped all responses from one research assistant after it became apparent during baseline data monitoring that there was a high chance that this data was being fabricated.[12] Subsequent data collection proceeded with three research assistants. This resulted in a final sample of 1,192 responses – 622 at baseline and 570 at endline. Just over 5% of this sample (n = 66) started the survey but did not complete it.

Table 4 (below) shows the composition of the survey sample by data collection period. It reveals that while the sample composition was similar between the two periods in terms of age, gender, and health insurance, there were differences in terms of whether the respondent was the one receiving medical treatment, and the type of medical service being received. A higher proportion of respondents in the endline period was receiving treatment themselves, and this was more likely to be for a chronic condition, maternity-related or preventative reason and less likely to be for a non-severe acute condition compared to during baseline.

12 Surveys conducted by this research assistant had different distributions across characteristics we monitored compared to surveys conducted by the other research assistants, including narrower and lower distribution of survey completion times. The data characteristics we monitored during data collection included: the number of completed surveys per day, response rates and missing data rates, the times at which surveys were started, survey completion times, the time between surveys, the location of the survey, the distribution of respondent characteristics, the distribution of responses to key questions, entries into free-text fields, and consistency between responses to key questions.

Covariate	Percentage (total)	Percentage per period		Chi-square test (*p*-value)	Significant differences by period?
		Baseline N = 622	*Endline N = 570*		
Age category of respondent					
18 to 27	31.2	30.9	31.6	0.88	No
28 to 38	34.7	34.4	35.1		
39 and over	34.1	34.7	33.3		
Gender of respondent					
Men	37.3	38.4	36.0	0.38	No
Women	62.7	61.6	64.0		
Person being treated					
Respondent	61.6	56.8	66.8	<0.01	Yes
Someone else (i.e. respondent visiting / accompanying)	38.4	43.2	33.2		
Health insurance for person being treated					
Yes	25.4	24.4	26.5	0.41	No
No	74.6	75.6	73.5		
Type of medical service / severity of condition					
Chronic condition	10.9	8.9	13.0	<0.01	Yes
Acute condition (severe)	15.4	15.7	15.1		
Acute condition (not severe)	42.6	47.1	37.7		
Antenatal / maternity	15.0	13.2	16.9		
Preventive service	16.2	15.2	17.3		

Table 4: Exit survey sample composition by time period

These differences may reflect changes in the broader population of people visiting the hospital or other uncontrollable factors. Such differences are to be expected in a pre-post comparison. While we adjust for observed differences in our analysis of survey responses (see below), not all differences are observed and therefore some differences between the samples may be affecting the change we observe in the pre-post comparison. It is difficult to say in which direction these differences would be expected to affect the estimated effect.

5.3.1 Analytical methods

As pre-specified, we conducted quasibinomial regressions to estimate the difference in the outcome measures between the baseline and endline surveys, controlling for differences in observed covariates:

$$Y_i \sim quasibinomial(n, p_i, \phi)\ ;\ logit(p_i) = \alpha + \beta_T T_i + \Psi_i \Gamma$$

$$var(Y_i) = n\phi p_i(1 - p_i)$$

Where:

- Yi is the score on the primary or secondary outcome measure for observation i (see Table 3 above for outcome measures)
- n is the maximum possible score for the outcome measure
- Ti is an binary variable indicating whether i comes from the endline sample (=1) or the baseline sample (=0)
- Ψi is a vector of covariates for observation i:
    - Age category of respondent (cut into 3 equally sized buckets – this was not pre-specified but seemed like the most parsimonious specification that did not involve assuming a linear effect of age)
    - Gender of respondent
    - Whether they came for themselves or to visit/accompany someone else
    - Whether the patient had health insurance
    - Whether the patient visited the hospital for a severe illness/trauma vs. mild illness/trauma vs. preventative or maternity related reasons
- ϕ is the dispersion parameter, the ratio of the variance to what it would have been in a simple independent binomial model

Note that because we cannot link respondents between baseline and endline periods, we treat the two samples as independent. This may somewhat underestimate the standard errors estimated in the regression.

Also as pre-specified, we used multiple imputation to address missing data in the analysis due to respondents skipping questions or not completing the survey. While this does not address the possibility of data missing not at random ('MNAR'), we stated in the Evaluation Protocol that conducting sensitivity analysis to explore the implications of this possibility was not justified given the pre-post comparison has other more important limitations and is only one part of this evaluation. In any case, as shown in Table 5, the extent of missing data is low in absolute terms and generally does not vary much between baseline and endline periods. Where there is variation, missingness is generally lower in the endline period, which is not what we'd expect if the intervention caused people with higher propensity to offer gifts to provide incomplete responses. We therefore do not expect the pattern of missing data to be exaggerating any reduction in our outcome measures, or for the multiple imputation to be meaningfully affecting our estimates.

Variable	Baseline N=622 (% missing)	Endline N=570 (% missing)
Gift-offering propensity score	**4.3**	**2.6**
Offered a gift during visit	3.1	1.6
Would consider offering a gift in future	4.3	2.5
Enabling social norms score	**6.4**	**5.1**
Perceives at least half of facility users offer gifts out of gratitude	1.0	0
Perceives at least half of facility users offer gifts for instrumental reasons	2.6	1.2
Perceives fewer than half of doctors at facility would refuse a gift	4.5	3.5
Perceives family would want them to give gift out of gratitude	2.6	0.7
Perceives family would want them to give gift for instrumental reasons	3.4	1.8
Perceives people who give gifts for instrumental reasons receive better service at facility	3.2	1.6
Perceives people who give gifts out of gratitude receive better service at facility	1.1	0

Perceives health providers at facility give better service to users who have given a gift in the past	6.0	4.6
Enabling attitudes score	**9.3**	**5.3**
Believes that offering a gift to show gratitude is sometimes or always the right thing to do	6.9	5.1
Believes that offering a gift to get better service in future is sometimes or always the right thing to do	7.9	4.4
Believes that a health provider is socially obliged to accept a gift from a patient	6.3	4.4
Covariates		
Age	0	0
Gender (observed by research assistant)	0	0
Reason for visit	0	0
Severity of reason for visiting hospital	0.3	0.2
Has health insurance	0	0.2

Table 5: Extent of missing survey data by time period

As robustness checks, we also conducted the following variations of this analysis:

- Using complete case analysis rather than multiple imputation of missing data (i.e. running the analysis after dropping any observations with missing data);
- Not including any covariates in the regression, since some of the covariates may be affected by the intervention and therefore obscure the full effect of the intervention when included in the regression;
- Accounting for research assistant fixed-effects, by including indicators for the research assistant conducting the survey (in case the proportion of surveys conducted by each research assistant changes shifts between baseline and endline);
- Including separate baseline and endline linear time trends, to see what extent these trends can explain any change in outcomes, rather than the intervention.

5.4 Interviews of hospital users, staff champions and other medical providers

Research assistants conducted 28 semi-structured interviews (in Swahili) with the key groups of actors after the intervention was implemented in order to understand their experiences and perceptions of gift-giving at the facility and their impressions of the intervention (if any). A purposive sampling approach was used to capture a wide range of views and experiences. The characteristics of this interview data samples are described in Table 6.

Type of participant	Hospital user	Staff champion	Other health provider in 'treated' departments	Other health provider in non-treated departments
Number of interviews	8	8	6	6
Timing	20 Dec – 31 Dec 2021	24 Dec 2021 – 7 Jan 2022	8 Feb – 16 Feb 2022	9 Feb – 17 Feb 2022
Sampling outcomes	**Reason for visit *(primary criteria)*:** 4 illness/trauma; 2 maternity; 2 preventative health **Attitudes *(primary criteria)*:** 4 believe it's right to give a gift; 4 believe it's wrong **Exposure to intervention *(secondary criteria)*:** 8 reported seeing a poster about gift-giving at facility	**Main work location *(primary criteria)*:** 4 in Courtyard Building; 4 in New Building (the two 'treated' locations) **Tenure *(primary criteria)*:** 4 above-average; 4 below-average **Unit *(secondary criteria)*:** 2 Radiology; 2 Maternity + Children; 1 Pharmacy; 1 Surgical; 1 Outpatient; 1 Laboratory **Gender *(secondary criteria)*:** 3 female; 5 male	**Main work location *(primary criteria)*:** 3 in Courtyard Building; 2 in New Building; 1 unknown **Occupation *(primary criteria)*:** 2 nurse; 2 doctor; 1 health attendant; 1 'other' **Gender *(primary criteria)*:** 5 female; 1 male **Tenure *(secondary criteria)*:** not recorded **Unit *(secondary criteria)*:** not recorded	**Main work location *(primary criteria)*:** 3 in RCH building; 3 VB ward **Occupation *(primary criteria)*:** 2 health attendant; 2 doctor; 2 nurse **Gender (*primary criteria)*:** 3 female; 3 male **Tenure *(secondary criteria)*:** 2 above-average; 4 below-average **Unit *(secondary criteria)*:** 2 Internal Medicine Clinic, 5 Not recorded

Deviations from planned sampling	Interviewers did not conduct interviews with users who did *not* report seeing posters about gift-giving	None – as planned	Interviewers did not obtain an even mix of genders, and secondary criteria (tenure, unit) were not recorded	None – as planned (though unit was not recorded in all cases)

Table 6: Interview data collected

5.4.1 Analytical methods

We managed and analysed translated interview transcripts according to the principles of the Framework approach. [13] This involved reviewing the data, looking across different categories/topics (e.g. experience of visit, attitudes to gift giving) and cases (where a case is defined as the data collected from one participant), as part of a case and theme analysis process. We aimed to identify the range of views and experiences, identify similarities within and between cases, and interrogate the data to identify any explanatory patterns that exist – for instance, whether specific characteristics of champions can explain how they experience and deliver their role in the intervention.

5.5 Observations and other implementation checks

To supplement the self-reported survey data and the findings from interviews, we also conducted a range of observations to understand how the intervention was implemented and received in practice. These consisted of:

- Observation of the Champions training workshop.
- Regular monitoring of the Champions WhatsApp group for 5 weeks.
- Confirmation from hospital administrators that letters were sent to providers.
- Three implementation checks and adjustments of the posters and desk signs, at approximately 1 week, 2 weeks and 4 weeks after initial installation.
- A follow-up 'sustainability' check of the poster and desk sign intervention, approximately 3 months after initial installation.
- An informal interview with the head research assistant about her perceptions of the intervention and people's responses to it.

One limitation of both the observation and interview data is that it was collected by research assistants who were also involved in the initial installation of the posters and desk signs, and responsible for day-to-day liaison with hospital administrators. Some of their observations may

13 Ritchie, J., Lewis, J., Nichols, C.M. and Ormston, R. (2014). Qualitative research in practice (2nd ed.). London, UK: Sage.

therefore be biased towards depicting the fidelity of the implementation more positively than what happened in reality.

5.5.1 Analytical methods

The observation data was also managed and analysed according to the principles of the Framework approach, mentioned above in relation to the interview data analysis.

5.6 Network survey of medical providers

We used social network analysis (SNA) to assess how the information about the intervention was disseminated through the hospital, after the intervention took place. Social network analysis is the mapping and measuring of relationships and information flows between people, groups, or organisations. In this project, we encouraged trained champions to inform their colleagues about the intervention. We then followed up with a sample of these champions to evaluate how they made use of their social network within the hospital to disseminate information. We also interviewed non-champion providers to examine through which communication channels they learned about the intervention. This approach highlights the opportunities and challenges of the champion approach to disseminate information about a gift-giving intervention in a hospital.

In the social network survey of this project, we mapped who talks to whom about the gift-giving intervention within treatment departments (see Setting section above for list of treated and non-treated departments) and to what extent providers perceive support or opposition to the intervention among their colleagues. We also examined how frequently the participants talk to their colleagues and what kind of relationship they have with each other. This allows understanding through which communication channels information about the intervention travels among medical professionals.

We also mapped the communication of medical professionals with colleagues from other, non-intervention, departments. Asking questions about whom they talked to about the intervention outside of the treatment department allows for mapping how information about the intervention is disseminated in the wider hospital.

The network survey was implemented in the software Network Canvas. During the qualitative interviews, research assistants presented a tablet computer to the providers and asked them to complete the survey on the tablet. The survey contained a preloaded list of all hospital employees from which the providers could select the colleagues with whom they talked regularly. Subsequently, they could answer questions about their colleagues (e.g., with whom they had talked about the intervention) by dragging and dropping the names of the colleagues

into
answer buckets (see Figure 2).

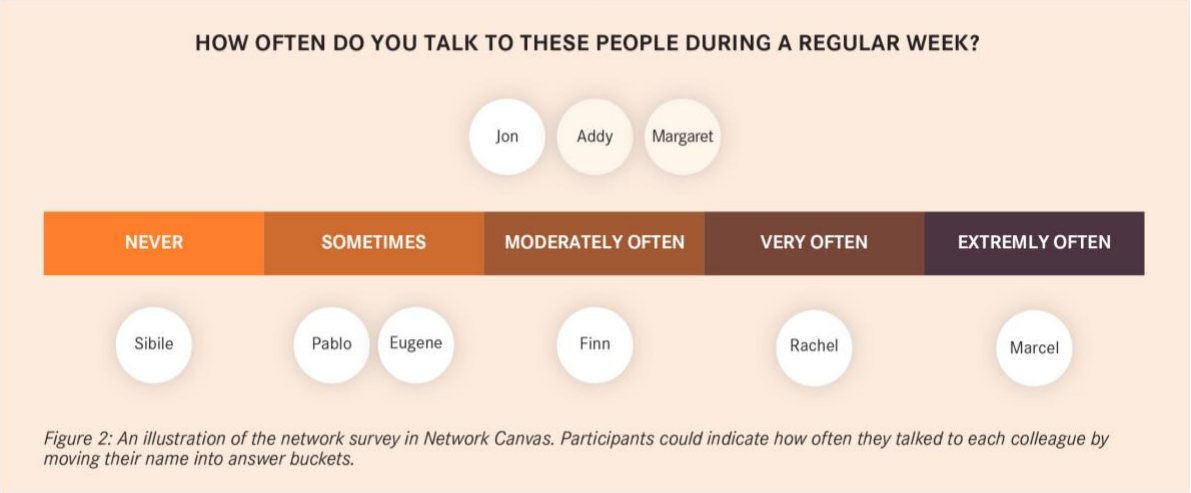


Figure 2: An illustration of the network survey in Network Canvas. Participants could indicate how often they talked to each colleague by moving their name into answer buckets.

Figure 2: An illustration of the network survey in Network Canvas. Participants could indicate how often they talked to each colleague by moving their name into answer buckets.

To get an understanding of how information about the intervention was disseminated to other departments in the hospital, providers were asked to indicate which of their colleagues in other departments talked to each other as well. This created a graphical representation of the providers' social networks across the hospital (see Figure 3).

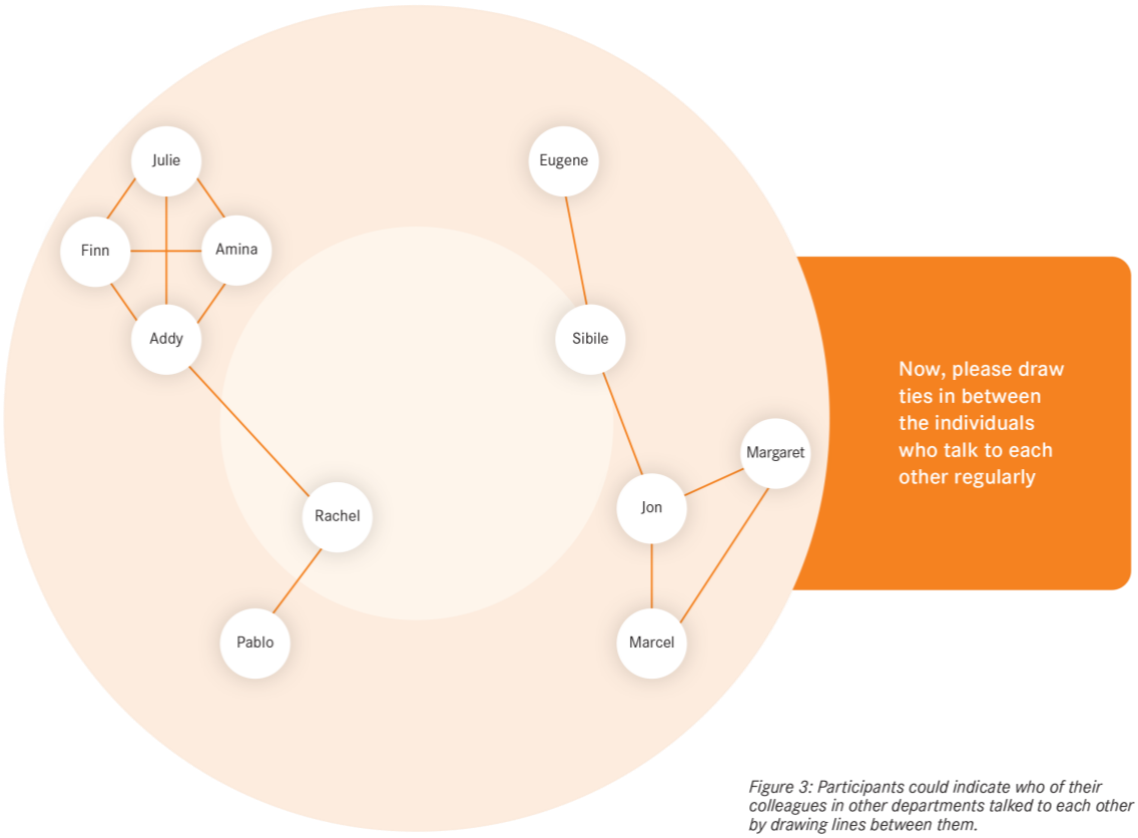


Figure 3: Participants could indicate who of their colleagues in other departments talked to each other by drawing lines between them.

Figure 3: Participants could indicate who of their colleagues in other departments talked to each other by drawing lines between them.

5.6.1 Analytical methods

The network data was analysed with a mixed-methods approach that entailed descriptive statistics of the type of relationships that were used to disseminate information and who was likely to communicate with colleagues about the intervention as well as graphical representations of the network structure that underlies medical professionals' communication patterns. These analyses help to explain the narrative medical providers provided during the qualitative interviews.

6 Results

6.1 Feasibility and fidelity of intervention implementation

Summary of findings:

- All elements of the intervention were feasible within the pilot setting and implemented at relatively high fidelity.
- Several hospital-specific factors appeared to contribute to feasibility and fidelity, including the support from hospital administrators for the intervention, their willingness to nominate staff to play the role of Staff Champions, the availability of a skilled and experienced facilitator for the Champions workshop, and the willingness of Staff Champions to help research assistants (employed by the project team) to set up and monitor the posters and desk signs throughout the hospital.

The initial setup and delivery of all aspects of the intervention seemed feasible within the pilot setting, and were therefore carried at relatively high fidelity. More detail on each element, including aspects that seemed to help or hinder implementation, is provided below:

- **Obtaining buy-in from hospital management:** The willingness to engage was notably more positive in the case of the Mwananyamala management as opposed to the members of the management team from the other large public hospital we engaged with. This might have had to do with the fact that the in-charge at Mwanayamala Regional Referral Hospital is relatively new in the position and we can consider him to be a "champion" in his own right in the sense that he is very much motivated to improve the performance of the hospital (and associated public perceptions). It should be noted that Mwananyamala had in the past been notorious for being a place where corruption is prevalent, which may partly explain the interest in the intervention on the part of the in-charge. This may have implications on scalability; however, this would have to be found out empirically as we do not know what the average attitude of the management heads in other regional referral hospitals may be vis-a-vis a similar intervention.

- **Sending letters to providers at hospital:** The content of the letter was developed by the project team, with input from MAT and the hospital administration. The letter was

signed by MAT and the hospital in-charge. Research assistants delivered the letters directly to staff in the intervention departments.

- **Recruiting Staff Champions:** Hospital administrators nominated the heads of each 'treated' unit to play the role of Staff Champion, and these heads then chose other staff members from their units to also play the role. This resulted in 22 staff attending the champions workshop. The recruitment process was facilitated by specific staff being asked to play the champion role by hospital administrators, instead of using a call for volunteers. The champions we interviewed thought this process was acceptable since they still had the option to withdraw their participation following the workshop.

- **Training Staff Champions:** The champions we interviewed generally reported feeling knowledgeable about their role and sufficiently prepared to undertake it by the end of the Champions workshop. The workshop was run over half a day at an external venue organised by the research team at the offices of the external facilitator. The external facilitator was experienced in training and public speaking and used a workshop guide developed by the project team. Project team members and research assistants were present during the session. Participants were generally observed to be highly engaged during the workshop, asking questions, sharing personal experiences of gift-giving, discussing concerns and making suggestions.

  Champions reported that the workshop was helpful because it included a clear explanation of the role, a convincing rationale for the overall intervention, the inclusion of realistic scenarios and exercises, and the provision of tips for how to educate patients and
  colleagues. Champions also spoke positively of the facilitator, perceiving him to be knowledgeable, respectable and trustworthy. The facilitator was able to answer questions from the participants, made them feel comfortable, and checked that they understood the content being delivered.

- **Sending messages to Staff Champions:** The workshop facilitator set up a WhatsApp group as planned at the end of the workshop and added the 15 consenting Champions to it. The workshop facilitator sent all 5 planned messages on the dates we specified.

- **Installing posters and desk signs:** Research assistants reported placing 40 desk signs and 11 posters in the two 'treated' areas of the hospital, with the help of Staff Champions and hospital administrators.

- **Monitoring and adjusting posters and desk signs over time:** Almost all posters remained in place during the 4-week implementation period, as well as at the 3-month follow-up visit, while a small number of desk signs either went missing or became placed in the wrong orientation. Research assistants conducting these checks (at 1, 2 and 4 weeks post-installation) reported that one poster was removed because it was damaged by heavy rain and wind. They also reported that a handful of desks signs went missing (for unknown reasons), or had been placed back down the wrong way after patients and providers picked them up to engage with them. The research assistants, with the help of Staff Champions, replaced or adjusted posters and desks signs where necessary with little difficulty during the 4-week implementation period.

6.2 Perceived and measured impact

Summary of findings:

- The intervention appears to have reduced the likelihood of hospital users offering gifts, though the magnitude of this change may be overstated by the before-after change in the survey outcomes.

- Both interviews and survey data suggest this was more due to a change in attitudes towards gift-giving and beliefs about the consequences of gift-giving, rather than a change in perceptions about the prevalence of gift-giving (i.e. the descriptive norm).

- Interviewees reported that healthcare providers were less likely to accept gifts, and also less likely to solicit gifts (though this was not a targeted behaviour).

- Again this seemed more due to a change in attitudes and awareness of the injunctive norm (that gift-giving is considered to be corruption), rather than a change in perceptions about descriptive norms more broadly.
- Some users and providers remained unconvinced that gift-giving was problematic and therefore said they and others would continue offering or accepting gifts. Users continuing to react negatively to the refusal of gifts also appeared to limit behaviour change among providers in refusing gifts.

- We did not find any evidence that the intervention had backfire effects, aside from the possibility that some people may be making more of an effort to hide gift-giving, which in itself suggests a reduction in the social desirability of gift-giving. There were, however, reports of positive side-effects of the intervention, including improved perceptions of the hospital and improved interactions between providers and users.

- There was a belief among those who reacted favourably to the intervention that it should be continued, and that if it is, its impacts will accumulate since behaviour change requires time.

6.2.1 Changes in survey outcomes measures

We find large and statistically significant declines in our survey measures of gift-giving among hospital users, after controlling for any changes in observed characteristics of participants. The qualitative findings (described below) suggest that at least part of this decline appears to be attributable to the intervention, though we cannot rule out the possibility that some of this decline would have happened in the absence of the intervention. It is also possible that some

of this decline reflects a change in awareness of the injunctive norm, given the susceptibility of self-reported measures to desirability bias (see *discussions* section below).

The primary survey outcome, the 'gift-offering propensity score', fell by 10 percentage points, from 22.9% to 12.8% (44% decline; p<0.01) (Figure 4, Table A1).[14] This was almost entirely driven by an 18 percentage point reduction in the proportion of people who said that they would consider offering a gift to staff at this facility in the future (from 43% to 25%). The other component of this score, the proportion of people who said they had offered a gift on the day of the survey, was already very low at baseline (3%) and had declined further by endline (1%).

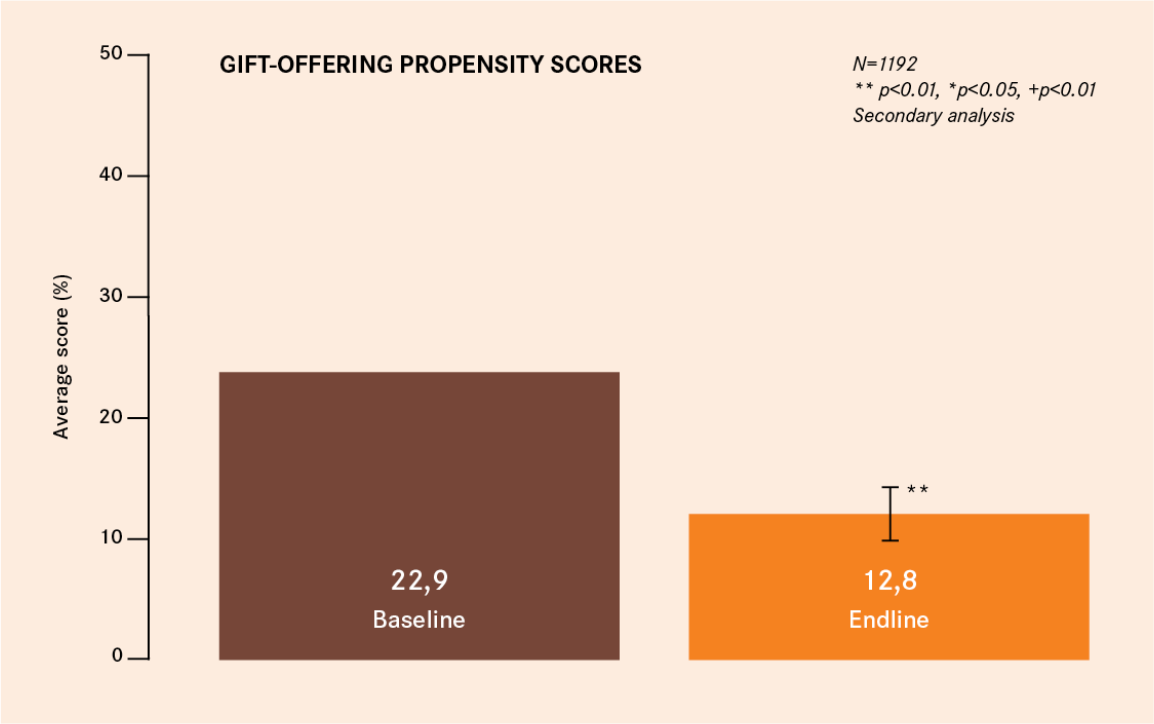


Figure 4: Change in primary survey outcome before and after intervention, controlling for observed covariates

The first secondary outcome, the 'enabling norms score', fell by 7 percentage points, from 46.3% to 39.7% (14% decline; p<0.01) (Figure 5, Table A2). Of the 8 components of this score, the biggest declines were in the proportion of people who believed their family would want them to offer a gift out of gratitude (64% to 45%) or for instrumental reasons (37% to 22%) (see Appendix 6 for graphs of the underlying survey responses, which were in most cases not binary). This is surprising, since the intervention was not expected to change the minds of

14 The quasibinomial regression models we used take into account the maximum possible score on each outcome measure and model the scores in percentage terms. For example, the average score of 22.9% on the primary outcome corresponds to an average score of 0.46 out of 2 in raw terms.

family members. Instead, this result may reflect a change in the perceived injunctive norm at the hospital, or a change in personal attitudes, which respondents may have then extrapolated to their family members. Changes in other components of this score ranged from moderate to minimal, as shown in Table 7.

Survey item	Baseline	Endline	Change
Believes their family would want them to offer a gift out of gratitude	64%	45%	-19pp
Believes their family would want them to offer a gift to get better services in the future	37%	22%	-15pp
Perceives that at least half of the doctors at the facility accept gifts given out of gratitude	71%	63%	-8pp
Perceives that offering a gift to say thank you results in better service in the future	50%	43%	-7pp
Perceives that at least half of the users at the facility offer gifts out of gratitude	31%	28%	-3pp
Agrees that healthcare providers at the facility generally give better service in the future to users who offer gifts	23%	21%	-2pp
Perceives that offering a gift for instrumental reasons results in better service in the future	54%	54%	0pp
Perceives that at least half of the users at the facility offer gifts for instrumental reasons	41%	43%	+2pp

Table 7: Changes in survey responses underlying the enabling norms score

The granular results underlying this outcome appear noisy and likely reflect some measurement error. Nevertheless, they point to some change in perceived norms at the facility away from believing that gift-giving (even to show gratitude) is socially acceptable and results in better treatment in the future.

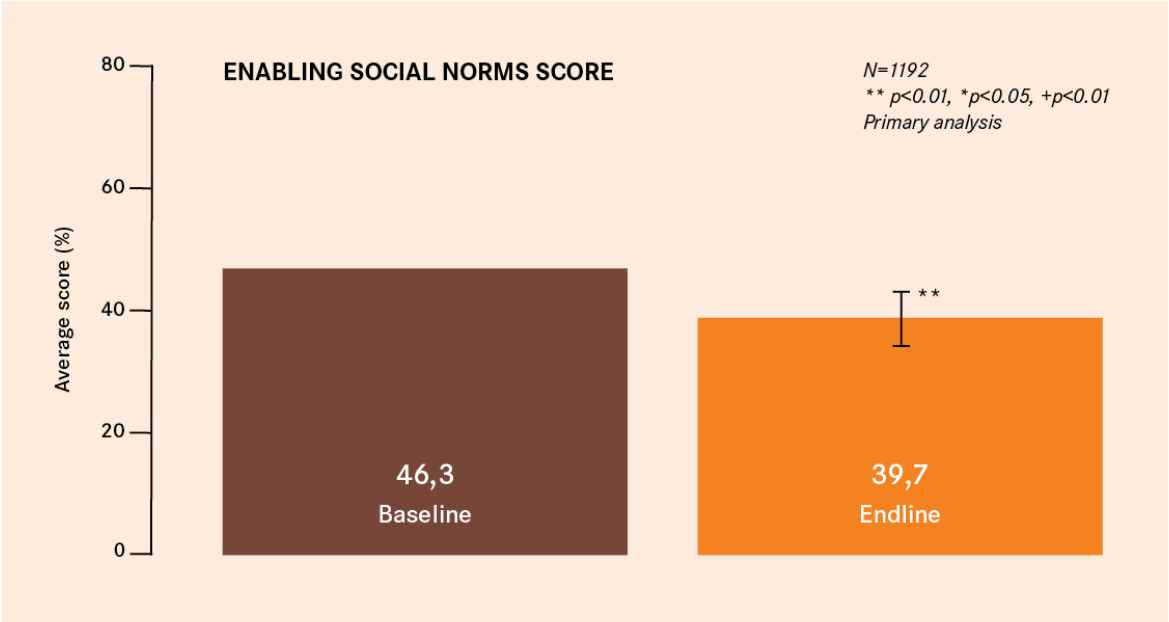


Figure 5: Change in secondary survey outcome 1 before and after intervention, controlling for observed covariates

The second secondary outcome, the 'enabling attitudes score', fell by 12 percentage points, from 55.6% to 43.1% (22% decline; p<0.01) (Figure 6, Table A3). This reflected a similarly sized fall in all three components of this measure, as shown in Table 8 (see Appendix 6 for graphs of the underlying survey responses).

Survey item	Baseline	Endline	Change
Thinks that healthcare providers should accept a gift offered by a hospital user	60%	47%	-13pp
Thinks that offering a gift to say thank you is sometimes or always the right thing to do	77%	65%	-12pp
Thinks that offering a gift to get better service in the future is sometimes or always the right thing to do	30%	20%	-10pp

Table 8: Changes in survey responses underlying the enabling attitudes score

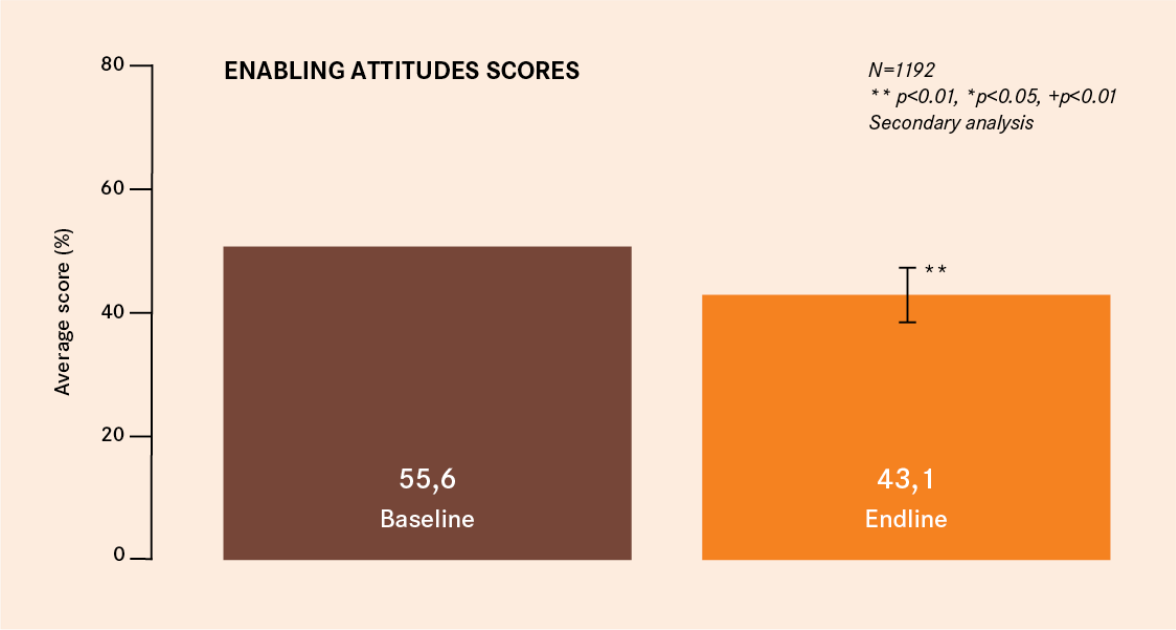


Figure 6: Change in secondary survey outcome 2 before and after intervention, controlling for observed covariates

6.2.2 Robustness of survey outcome analysis

The estimated changes in all three outcome measures are robust to three out of the four alternative regression model specifications we pre-specified: the inclusion of research assistant fixed-effects; not controlling for any covariates; and the use of complete case analysis rather than multiple imputation. This can be seen by comparing model 2 (the main specification) with models 1, 3 and 4 (the alternative specifications) in Tables A1-A3.

However, we find weak evidence that some of the changes observed between baseline and endline could be due to time trends rather than the intervention. As pre-specified, we fitted separate baseline and endline time linear time trends on our outcome measures by including a daily time variable in the regression.[15]

In the case of the gift-offering propensity score, a negative linear time trend can be fitted to the data in both the baseline and endline periods (Appendix Figure A1). Because the estimated slopes of these trends are similar between periods and sufficiently large, they account for more than 100 percent of the change observed between periods, implying that the intervention slightly *increased* the gift-offering score. However, these linear time trends are not statistically

15 For ease of interpretation, we conduct this analysis using complete cases only, and a linear regression rather quasibinomial. We do not expect these modelling choices to affect our conclusions.

significant (p=0.28; Appendix Table A4) and we have no other reason to expect a linear time trend in this outcome, and therefore assess this to be only weak evidence that the change is due to a pre-existing trend rather than the intervention.

In the case of the enabling norms score, although a negative linear time trend can be fitted in the baseline period, there is minimal trend in the endline period (Appendix Figure A2). This discontinuity in the estimated trend allows for the intervention to still have a sizable effect in explaining the change in outcomes (5 percentage points, compared to 7 percentage points in the main analysis). However, it is difficult to empirically disentangle the effect of the trends vs. the effect of the intervention, meaning neither the intervention nor the time trend coefficients are statistically significant (Appendix Table A5). Again, we interpret this as weak evidence that the change could be due to a pre-existing trend.

Finally, in the case of the enabling attitudes score, the linear time trend that is fitted is positive in the baseline period and mildly negative in the endline period (Appendix Figure A3; Table A6). This does not provide any evidence that the change we observe between baseline and endline periods in measured attitudes can be attributed to time trends.

6.2.3 Perceived impacts reported in interviews

Interview participants (hospital users, Staff Champions, and other healthcare providers) were first asked about any changes related to gift-giving they had observed over recent weeks, and then asked what factors led to those changes. According to participants, the intervention was successful in changing behaviours in some but not all cases. These behaviours include both gift-offering by users, and gift-accepting by providers. There were also reports of providers *soliciting* gifts less frequently, though this was not a behaviour we targeted. These behavioural changes were attributed largely to an increased awareness of the injunctive norm that gift-giving is considered to be corruption and therefore prohibited. There were also reports from Champions and other providers during interviews that conversations between Champions and other providers, as well as between providers and users[16], helped to foster an understanding of the negative impacts of gift-giving and users' right to equal access to treatment.

Outside of gift-giving, some participants also reported other positive changes due to the intervention. This included improved perceptions of the hospital among hospital users and improved relationships between providers and users due to greater communication. These positive but unintended effects seemed to occur despite some users becoming upset that their

16 This provider-user interaction was reported largely by providers and Staff Champions, rather than by users themselves. In the exit surveys, less than 1% of respondents in the endline period reported hearing a doctor discouraging gift-giving during their visit. This discrepancy may reflect either an uncommon phenomena that was not picked up in our exit survey sample, or some positive inflation of the effects of the intervention reported by Champions and other providers during interviews.

gifts were being refused. There were few reports of negative unintended effects of the intervention, aside from a few providers being upset about the intervention, and the possibility that it was encouraging some gift-giving to occur more covertly (see below).

On the other hand, interviewees reported that the intervention failed to change the attitudes of some stakeholders, particularly users who wanted to give gifts out of gratitude. Interviewees reported that some users still offered gifts, and that some users still felt offended when gifts were rejected. As a result, some providers still faced difficulties in refusing gifts, particularly small, in-kind gifts. There appears to remain a view among some users and providers that giving and accepting gifts (particularly out of gratitude) is a private matter between patients and providers, and cannot be considered to be corruption since it occurs after the service has been provided and at the discretion of the patient. Some Champions reported a concern that users were being more careful about giving gifts openly, but that some may still give gifts covertly, and that some providers still accepted these gifts. Overall, this finding is consistent with the survey data in that it suggests a decline in the social desirability of gift-giving while still showing scope for further reductions in gift-giving behaviours and enabling attitudes.

We also used the interviews to ask about factors other than the intervention that may have led to the observed changes. Providers (including Staff Champions) largely mentioned a negative stance towards gift-giving from the hospital administration that had begun before the pilot was implemented. They also mentioned that the new hospital administration is more reliable than their predecessor in paying staff on time (overtime), hence reducing the motivation to accept gifts. Finally, they also mentioned the GoTHOMIS hospital information system, which changed the way official payments are recorded and tracked.[17] Since all three of these factors were in place well before the pilot period, we do not believe they account for the majority of the changes observed, though it is possible that they had a lingering downward effect on the indicators we measured. However, these factors may have facilitated the intervention being studied in having the intended effects, limiting generalisability to other settings where these factors aren't present.

6.2.4 Sustainability of intervention and persistence of effects

Staff Champions and other providers we interviewed generally reported that the intervention (that is, both the intervention materials and the role played by Staff Champions) was likely to be sustained. This reflected a perception that hospital management were committed to the intervention and its underlying goals, as well as Champions themselves being willing to

17 GoTHOMIS is a cross-hospital initiative of the Government of Tanzania, and was being used at the pilot hospital as early as 2017. See https://www.healthdatacollaborative.org/fileadmin/uploads/hdc/Documents/Country_documents/Tanzania_GOT-HOMIS_presentation_12Sept2017.pdf

continue fulfilling their role. As evidence of this, we heard that the hospital management organised a customer service seminar for all staff in February, at which gift-giving was discussed. Providers reported that this seminar helped to reinforce awareness of negative impacts of accepting gifts from users.

Champions also reported that the *impact* of the intervention would be sustained or even increased if it remained in place for a longer period of time, since not all providers and hospital users would change their behaviour immediately. At the same time, they suggested regular meetings of Champions, as well as additional outreach efforts (e.g. flyers distributed to patients) in order to ensure the impact is enhanced and spread further, potentially beyond the hospital at which we conducted the pilot. Some providers also expressed interest in being trained as Champions, and believed that an increased number of Champions would ensure the intervention's impacts would be sustained.

Similar sentiments were shared by other healthcare providers as well as hospital users. One hospital user noted that if the intervention was extended to other places it would create a more general norm that users don't have to give gifts to receive the service they are entitled to. Another hospital user reported that ongoing implementation of the intervention may be necessary to remind people of the message, since some people may forget if they were only exposed to it once.

At the same time, a few of the staff and users we interviewed were ambivalent towards the intervention being continued. This either reflected uncertainty about its impact or disagreement with the message that giving gifts out of gratitude should be considered to be corruption. Related to this, some participants suggested we clarify the message by referring to 'corruption' (*'rushwa'*) rather than 'gift-giving' (*'zawadi'*), though we note that part of the intent of the intervention was to highlight that any sort of gift-giving would be considered corruption.

6.3 Reach, engagement and other mechanisms of impact

Summary of findings:

- The posters, and to a lesser extent the desk signs, were noticed by many users and providers. Reported exposure to these materials can account for some of the reduction in the exit survey gift-giving measures between the baseline and endline periods, suggesting they were an important mechanism.

- The letter sent to providers appears to have been less memorable than the other materials. The tips for how to refuse gifts, shown on the provider-facing side of the desk signs, were also rarely mentioned during interviews.

- It is unclear how important interactions between doctors and patients were in discouraging gift-giving, since the offer of a gift was a rare occurrence in the post-intervention sample.

- Conversations between Staff Champions and other healthcare providers appear to have been important in convincing providers to refuse gifts and in enabling them to do so successfully. But not all providers reported such conversations, and Champions reported difficulties in persuading some of their peers.

- Staff Champions discussed the intervention with colleagues in their own department in staff meetings and personal conversations. They had more frequent conversations the more opportunities they had and the closer their relationship with these colleagues was. This suggests that gift-giving is a sensitive topic that requires some level of trust for Staff Champions to disseminate the information in personal conversations.

- Dissemination of information about the interventions to colleagues in other departments took mainly place during staff meetings and was predominantly directed at colleagues with the same profession (e.g., in meetings of all head nurses). Staff Champions with a technical profession (e.g., radiologists) reached colleagues with a more diverse set of professions.

- Dissemination of information about the intervention at staff meetings might still have a wide reach. The network survey further revealed that most of the colleagues in Staff Champions' social networks worked in different departments. After learning about the intervention, the network contacts could inform their colleagues in other parts of the hospital.

- Providers who were not Staff Champions mainly learned about the intervention through staff meetings and had subsequently personal conversations with trusted colleagues in their department about the intervention. They also had conversations about the intervention with colleagues from other departments during meetings. These conversations were more limited than for the Staff Champions and they were mainly directed at colleagues in the same profession.

- Interviews with six providers who worked in non-treated departments showed that the champion approach reached non-treated parts of the hospital. Five of the six providers knew about the intervention and perceived no opposition to it in their social network. These providers were particularly likely to have had conversations about the intervention when they had a Staff Champion in their network who had the same profession.

- Engagement with and attitudes towards the intervention was more mixed among non-Champion providers and hospital users, consistent with reports that it was effective at changing the behaviour of some but not all of these actors.

6.3.1 Salience and contents of intervention materials

A fair proportion of users in the exit survey reported being exposed to the desk signs and posters, and exposure seems to have been important in affecting outcomes. Even after subtracting the proportion of respondents who reported seeing these elements in the *baseline* period (these respondents either misreported or were referring to materials that were not part of our intervention), around 1 in 2 reported seeing the posters, while 1 in 5 reported seeing the desk signs. The users we interviewed recalled that the main message was that gift-giving was being discouraged (with some users likening it to an anti-corruption campaign), while some users also reported that the intervention materials raised awareness of the negative impacts of gift-giving.

For the gift-giving propensity and enabling attitudes measures, indicators for exposure to the posters and desk signs help to explain roughly half of the reduction in the outcome measure between the baseline and endline periods (see Appendix Table A7-A9). This provides suggestive evidence that the salience of posters and desk signs was a key reason for change observed in the survey-based outcome measures.

Awareness of the intervention materials generally seemed to be high among healthcare providers, with all 6[18] providers we interviewed reporting that they had noticed the posters and desk signs. On the other hand, not all providers remembered receiving the letter, and only one could recall what the letter said. It is not clear whether these providers did not actually receive

18 Those in treated units, aside from the Staff Champions.

the letter, or if the letter was simply not salient or memorable enough to be opened and remembered.

While all providers in the interview sample reported seeing the posters and desk signs, recall of the contents of these materials was generally limited to raising awareness about the problems with gift-giving and clarifying the general injunctive norm (that gifts should not be offered or accepted, and that gift-giving is considered corruption). There was little recall among providers of the tips for refusing gifts shown on the provider-facing side of the desk signs. Perhaps reflecting the weakness of this mechanism, some providers reported that they weren't sure how to refuse gifts, or that patients felt upset when their gifts were refused – a scenario we anticipated and attempted to address via the tips on the desk signs.

6.3.2 Users' engagement with intervention materials

Users' engagement with the intervention materials was mixed. Some reported having little time to engage deeply (or expressed doubt that other users were engaging), while others reported discussing the intervention materials with other users. One facility user even reported attempting to 'test' a provider by offering a gift.

Opinions towards the intervention were also mixed. While some were happy to see the message and reported that it was relevant and had potential to improve outcomes for users, others disagreed with or did not understand the core message (that all forms of gift-giving are undesirable).

6.3.3 Staff Champions' engagement with the intervention and interactions with other staff

Champions generally felt favourably about the intervention, and in particular noted that its 'participatory' approach (which referred to both the inclusion of staff members in delivering the intervention, and the interviews conducted as part of the evaluation) made it stand out from previous anti-corruption campaigns. They understood the role as being about educating their peers and hospital users about gift-giving practices.

The Champions WhatsApp group was reported to be a useful source of information and tips, but there also appeared to be some reluctance to use it actively. This is consistent with the fact that not all Champions sent messages in the group (in the first week, 15 people sent messages, and many of these were simply thanking the facilitator for adding them to the group), and after 2 weeks there were fewer than half of the original number of Champions sending messages. There were, however, in-person discussions between Champions, as reported in interviews.

Champions embraced the role they were given to various degrees. An overall positive attitude was associated with a rejection of gift-giving behaviours and buy-in to the overall intervention, a perception that it was relevant to the day-to-day work, and a belief that they had the relevant personality traits and authority for the role (e.g. self-efficacy, ability to persuade others, outgoing, head of unit). Those who were more ambivalent about the role suggested that in the future, selection of champions could be more targeted towards people who are more inclined to speak up. Some Champions also noted that the intervention was more relevant in some departments than others, because of variation in the baseline incidence of gift-giving.

Discussions between Champions and other healthcare providers appeared to be an important channel through which the effects of the intervention propagated. However, not all providers reported having such discussions. Those who did have these discussions reported learning about the reasons why gift-giving should be discouraged, and what to do if they were offered a gift, while those who didn't mention having such discussions reported various barriers to engaging with users about gift-giving (e.g. not knowing how to refuse gifts).

Some Champions reported challenges in persuading their peers about the need to refuse gifts. These Champions reported that some departments at the hospital were known to have widespread gift-giving behaviours, and that staff in these departments were reticent to change or felt like they were being investigated. Successful interactions also seemed less likely to occur if the Champion was not in a position of power relative to their colleague, or if there wasn't a natural opportunity to have the conversation. There were also Champion-level factors that
limited this mechanism in some cases, including being in busy departments where there were competing priorities, being too busy themselves, or simply finding the task difficult or uncomfortable.

6.3.4 Staff Champions' utilisation of their social networks

The network survey revealed that the Staff Champions talked to most of the colleagues in their own department about the intervention. Of the eight champions that were interviewed, six talked to ten or more direct colleagues about the intervention. However, in about half of the cases, champions had only one or two conversations about the intervention with their colleagues (see Table 9).

Champion ID	N colleagues	Frequency of talking about intervention		
		Never	*Once or twice*	*Multiple times*
CH1	9	0	3	6

CH2	20	10	10	0
CH3	8	0	0	8
CH4	19	0	14	5
CH5	16	0	8	8
CH6	62*	25	11	17
CH7	11	2	3	6
CH8	19	0	9	10
Total	186	37	58	60

Table 9: Frequency of talking about the intervention with colleagues from the intervention departments

** The champion skipped to the next question without answering for the last 9 colleagues.*

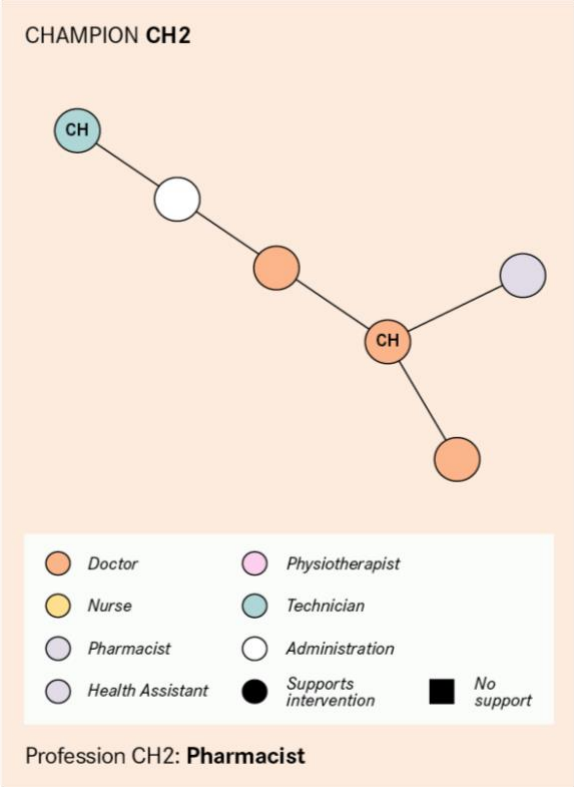
We found that Staff Champions were significantly more likely to talk to colleagues in their department about the intervention more often, the more frequently they talked with these people in general (r = .43, p <.001)[19]. Moreover, champions were significantly more likely to talk to colleagues in their department about the intervention more often, the closer their relationship was with these people (r = .52, p <.001). Closer relationships could imply more opportunities to talk with each other or that personal conversations about gift giving require some level of trust. The latter explanation (trust) appears frequently in the qualitative interviews (e.g., CH 5). This suggests that gift-giving is a sensitive topic that requires some level of trust for champions to disseminate the information in personal conversations. Last, there was a tendency of most Staff Champions to mainly talk about the intervention with colleagues who had the same profession (e.g., nurses with other nurses). However, all except one champion also had conversations about the intervention with colleagues who had different professions.

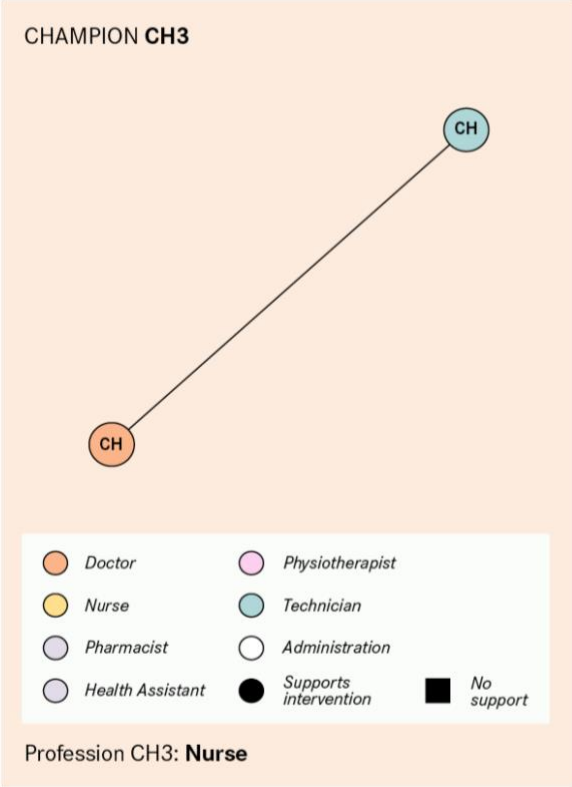
Dissemination of information about the intervention to colleagues from other departments looked different than the dissemination to colleagues in their own department. Having a closer relationship with colleagues from other departments did not increase the likelihood to talk about the intervention. Instead, having more frequent conversations in general increased the likelihood to also talk about the intervention. This suggests that conversations about the

19 The tests for statistical significance are based on fixed-effects models that account for the repeated observations within Staff Champions.

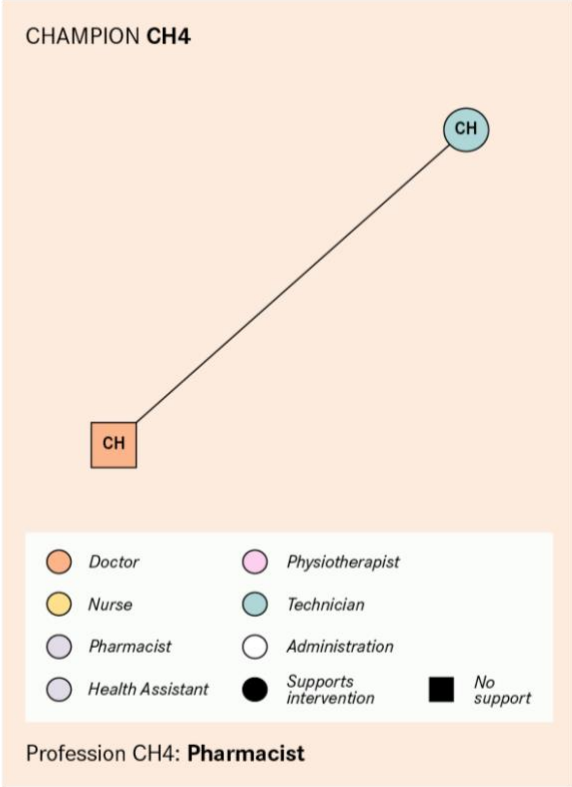
interventions between staff in different departments were often of an opportunistic rather than deliberate nature.

Dissemination to other departments took place much more within the same profession than within Staff Champions' own department. Figure 7 visualises the social network of each Staff Champion across the hospital to show how champions made use of their social networks.

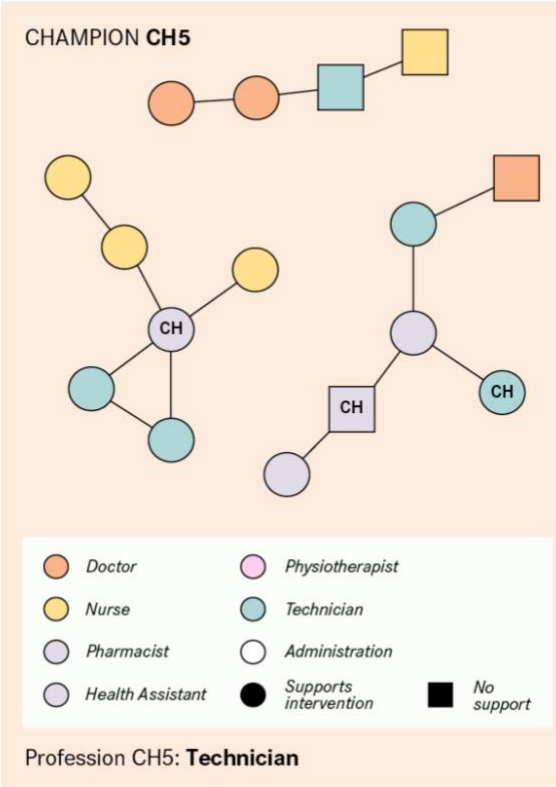




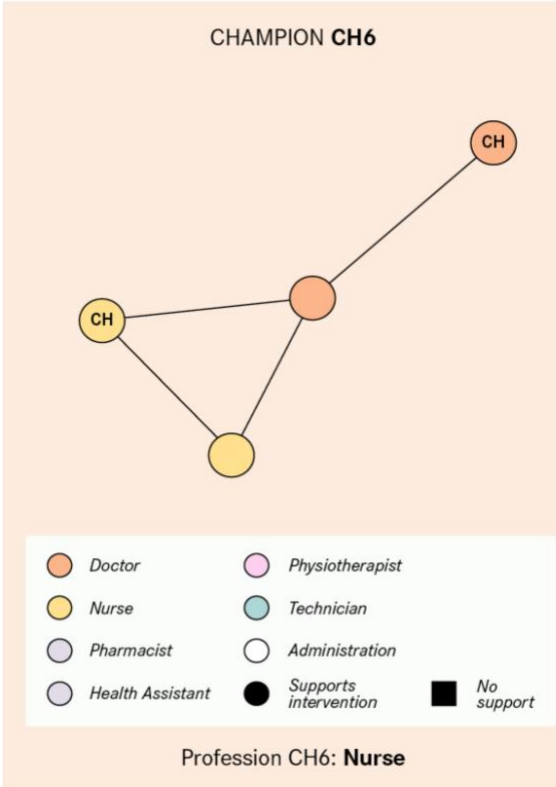
Profession CH3: **Nurse**



Profession CH4: **Pharmacist**



Profession CH5: **Technician**



Profession CH6: **Nurse**

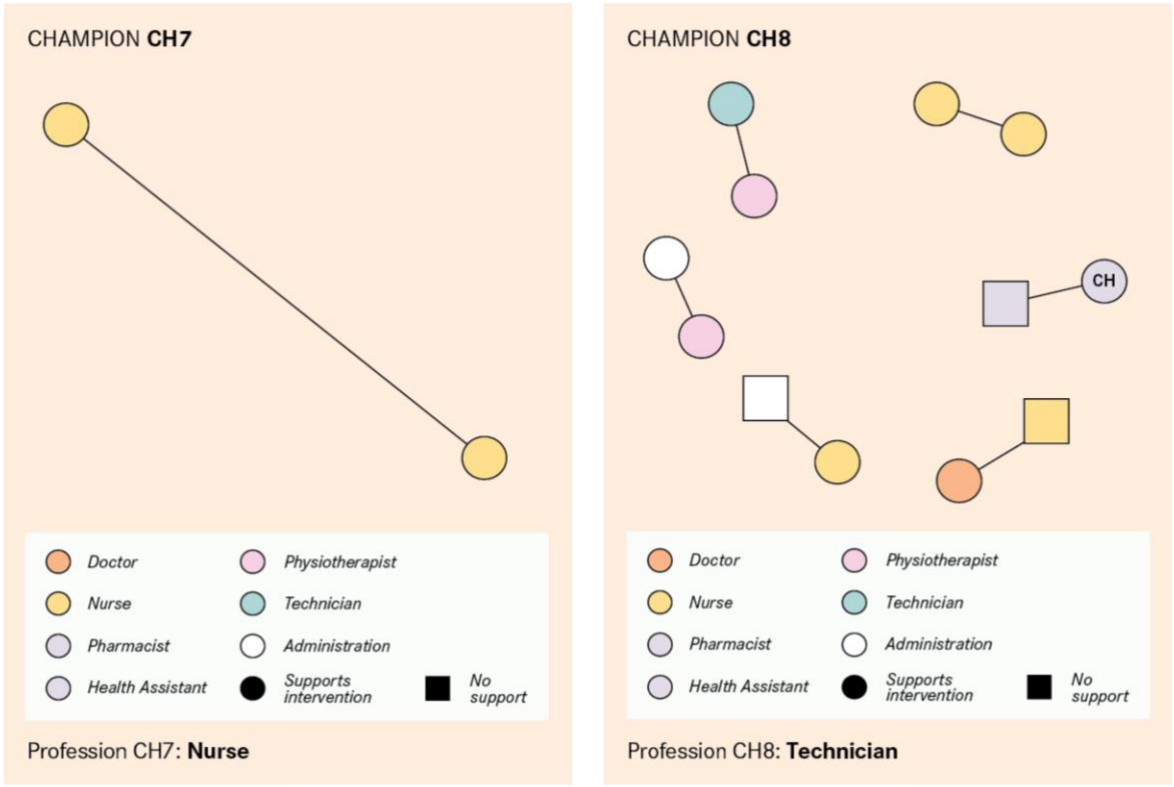


Figure 7: Visualisations of the Staff Champions' social networks of colleagues in other departments (excluding the Staff Champions themselves). The colours indicate the profession of the colleagues. The shapes indicate whether a colleague is supportive of the intervention (circle) or not (square). Lines indicate that two providers regularly talk to each other.

The network visualisation in Figure 7 reveals several patterns of how Staff Champions utilised their social networks. First, Staff Champions tended to mostly (but not exclusively) talk about the intervention to colleagues in the same profession. That is, nurses were unlikely to talk to doctors and doctors were unlikely to talk to nurses in other departments. Dissemination via vertical ties (to other professions) was mainly done by technicians (CH 5 and CH 8). They are more likely to talk to people with other professions than doctors and nurses.

There is a tendency of ”clustered dissemination”: Most Staff Champions directed the dissemination at one group of colleagues who also talk to each other. Less than half of the champions (CH 1, CH 5, CH8) have addressed individuals or several small groups who do not talk to each other. The qualitative interviews revealed that the clustered dissemination often took place during staff meetings at which many of the network contacts were present. This also explains why dissemination to other departments was typically directed at colleagues in the same profession. These colleagues often met in staff meetings (e.g., of all head nurses) in which the Staff Champions could inform others about the intervention.

Despite the clustered dissemination, Staff Champions' approach to inform colleagues at staff meetings might still have a wide reach. The network survey further revealed that most of the colleagues in Staff Champions' social networks worked in different departments (for more details, see Stark 2022)[20]. This suggests that participants in the meetings in which the intervention was discussed could have spread the information further among the colleagues in their own departments. In this way, the information about the intervention could potentially be further disseminated to other parts of the hospital.

The network visualisation in Figure 7 further shows that the two technicians (CH 5 and CH 8) not only reached the most diverse set of professions but have also directed their communication at several small unconnected clusters of colleagues. This suggests that their dissemination had a wide reach to different parts of the hospital. Perhaps thanks to their professions (e.g., radiologists), technicians have more opportunities to talk to colleagues from various departments and in different professions.

6.3.5 Medical providers' engagement with the intervention and interactions with peers

Similarly to users, providers' engagement with the intervention were mixed. There were some reports of providers discussing the intervention (and gift-giving more broadly) with peers in team meetings. But others reported that they had not discussed gift-giving with their colleagues outside of conversations with Staff Champions. Some providers noted that the posters were useful in justifying their refusal of gifts to patients who offered gifts, while others reported not paying close attention to these materials and not having conversations with patients about it (possibly because they had not been offered a gift).

6.3.6 Role of medical provider social networks

Providers who were not Staff Champions but worked in a treatment department in which the intervention took place mainly learned about the intervention during staff meetings according to the qualitative interviews. The network survey revealed that providers were *not* more likely to have conversations about gift-giving or the intervention with Champions than with other colleagues ($p = .773$). Of the 15 Staff Champions in the providers' social networks, 8 did not have a conversation about the intervention with the providers. Instead, there was a tendency to talk more often about the intervention when providers had a closer relationship with their

20 Stark, T. (2022) Adopting a peer-led approach to disseminate anti-corruption messages: Results of the network survey, Basel Institute on Governance. See: https://baselgovernance.org/publications/adopting-peer-led-approach-disseminate-anti-corruption-messages-results-network-survey

colleagues (r = .32, p < .001). This suggests that the information about the intervention during staff meetings led to follow-up conversations about gift-giving with trusted colleagues.

Providers who were not Staff Champions also had conversations about the intervention with colleagues who worked at other departments. However, the dissemination to other departments was more limited than among the Staff Champions. The network survey shows that providers mainly talk to only one or two groups of closely connected colleagues from other departments (for more details see Stark, 2022). From the qualitative interviews, it became clear that the conversations about the intervention often took place during staff meetings. Just like among the Staff Champions, providers' social networks are mainly horizontal. That is, nurses talk to nurses, and doctors talk to doctors. This can limit the reach of the information about the intervention.

Interviews with six providers who worked in non-treated departments (see Setting section above for list of treated and non-treated departments) gave additional insights into the reach of the champions. Five of the six providers heard about the intervention. From the qualitative interviews, it becomes clear that all but one provider saw the posters about the intervention. All of these providers were positive about the posters and the aim of the intervention. Moreover, three providers attended meetings in which someone (potentially a Staff Champion but that is not clear) discussed gift giving and why the hospital opposes it. Yet, none of the providers mentioned a personal conversation with a Staff Champion. This suggests that champions can effectively disseminate the information to the wider hospital through workshops and meetings. The network survey among the providers further suggests that these workshops led to follow-up conversations about gift-giving with colleagues.

The network survey further revealed that dissemination to other parts of the hospital was most effective when providers had a champion in the network who had a similar occupation (e.g., nurses with a nurse champion) (for more details see Stark, 2022). Providers who had Staff Champions in their network who had another profession were less likely to have had conversations about the interventions than providers with Staff Champions who had the same profession. This suggests that it might be important to recruit champions for the intervention from all relevant occupational groups in the hospital.

Despite not working in a treatment department, the five providers who had heard about the intervention also perceived no opposition to it in the hospital. The network data show that the providers perceived a positive reception of the intervention in their wider social network. Of the 88 colleagues these providers name, they indicated that the vast majority (71) were supportive of the intervention. For 17 colleagues, they indicate not knowing their attitude toward the intervention. This suggests that the Champions' approach had a wide reach in the hospital.

6.3.7 Medical providers' interactions with users

The importance of providers conveying the anti-gift-giving message to users during their interactions was unclear. On the one hand, some Staff Champions and other providers we interviewed reported that providers had productive conversations with users about gift-giving, and that while some users were initially upset or disagreed with the message, they were usually persuaded in the end. On the other hand, less than 1 percent of users in the endline exit survey reported that a provider conveyed an anti-gift-giving message to them, and few of the users we interviewed reported discussing the intervention with staff. This may reflect the fact that the offer of a gift was an uncommon event in the post-intervention sample, and providers generally did not feel a need to discuss gift-giving with users unless the user offered a gift. However, the fact that some providers reported continued difficulties in refusing gifts suggests that there remains an opportunity to further reduce gift-giving by supporting providers during this interaction.

7 Discussion

We find that the intervention we piloted at a regional referral hospital in Dar es Salaam, Tanzania, is both feasible and shows potential for impact in reducing gift-giving, at least within the pilot setting. The evidence of its potential for impact comes from both a before-after comparison of responses to an exit survey of hospital users, and in-depth interviews with healthcare providers and users at the hospital. However, it should be noted that both of these data sources are susceptible to a common source of bias, which is discussed in the limitations section below.

To the extent that the intervention did reduce gift-giving, this seems to have come about by increasing the shared awareness between users and providers that gift-giving was not acceptable at the hospital. Both the static intervention materials (posters and desk signs), and the presence of 'Staff Champions', who spread information and reinforced these messages and helped to maintain the static materials, appear to have contributed to this increased awareness.

The evaluation also finds that despite these initial indicators of success, there is also scope for improving the effectiveness of the intervention. Staff Champions reported that it was difficult to convince some colleagues that all forms of gift-giving were problematic; this was reinforced by reports from some providers and users who held this view. Providers also reported that it sometimes remained difficult to refuse gifts from users, suggesting that more could be done to make this easier for them (e.g. a Staff Champion reported that the training they received should be offered to all providers at the hospital). And we did not find evidence from hospital users

that the intervention changed perceptions about how many other people offer gifts or perceptions about the potential benefits of offering a gift in order to get better service in the future.

The network survey further revealed that Staff Champions mainly used meetings to inform their colleagues from their own and other departments. Often, this led to follow-up conversations among the colleagues. Whereas the spread of the information during meetings seems to be effective, personal conversations about gift-giving seem to require some level of trust. This has limited the amount of private conversations the Staff Champions had about the intervention.

Dissemination of the information by Staff Champions to other departments took mainly place between providers who had the same profession. That is, nurses informed nurses and doctors informed doctors. This suggests that Staff Champions' dissemination mainly built on existing opportunities to reach many colleagues (e.g., meetings of head nurses) and less so on personal conversations and/ or that Staff Champions might feel more comfortable engaging with colleagues from the same profession. Accordingly, to have a wide reach in the hospital, the champion approach requires that Staff Champions are being recruited from all relevant professions. Alternative, Staff Champions with a more technical occupation (e.g., radiologists) might be more effective in reaching colleagues from various professions because these champions tend to have more diverse networks.

7.1 Limitations

7.1.1 Reliance on self-reports

A key limitation of this evaluation is that we could not directly observe the target behaviours of gift-offering by hospital users and gift-accepting by healthcare providers. This is inherent to the study of corruption, which looks at behaviours that, almost always, take place in secret. We therefore relied on self-reports, either via surveys or interviews. It is possible that participants provided 'desirable' answers (either socially desirable, or desirable to the research team) and that the intervention merely changed what was seen to be desirable, rather than changing actual attitudes or behaviours.

To address desirability bias in the exit survey, we used a range of techniques. This included using vignettes to first focus on the behaviour of others (Finch, 1987) and flagging in advance that the participant would have the opportunity to explain their response to sensitive questions. We also conducted multiple rounds of cognitive interviews and user-testing when developing the survey questions to improve the chances that participants would answer candidly. Informed consent forms and statements guaranteeing anonymity to interviewees as well as survey respondents were also used.

One indicator that these techniques worked to some extent is the percentage of respondents who reported that they believed that giving a gift out of gratitude is sometimes or always the right thing to do. This remained at over 60% in the endline period. In addition, there is some evidence that responses varied according to the type of treatment being received by the patient, which we would not expect to observe if social desirability bias was the dominating factor in patterns of responses (see Tables A1-A3). Nevertheless, it seems likely that, at the margin, there were some survey respondents for whom the intervention merely discouraged them from being candid about their gift-giving intentions and attitudes.

Desirability bias (or more precisely, 'demand effects') is also likely to be leading some interview respondents to be overstating the positive impacts of the intervention. We expect this is particularly the case for Staff Champions, who may have felt more of an interest in reporting the intervention as having been successful given their role in delivering it. Nevertheless, the range of reports we received from both Staff Champions and other providers, about the intervention being effective in some cases but not in others, suggests that at least some of the positive effects reported are genuine.

Taking all available information into account, we believe that this particular limitation of the evaluation suggests that the positive effects are smaller than they first appear, but still non-negligible. At the very least, the intervention appears to have changed perceptions of the social desirability of gift-giving for a substantial share of hospital users. We suspect that at least some of this change in perceptions translates into a change in behaviour.

7.1.2 Research assistants involved in both intervention implementation and data collection

Due to limited availability of experienced local research assistants, the individuals who collected survey and interview data were also involved to some extent in implementing the intervention. This included being present at the Staff Champion workshop and liaising with Staff Champions to install and maintain posters and desk signs.

This may be affecting the results in two ways. First, research participants who were aware of the research assistants' involvement in delivering the intervention may have over-reported its positive effects and under-reported its negative effects. This concern is discussed in the previous section. Second, research assistants may have been motivated to collect data in such a way as to exaggerate the positive effects of the intervention. While we cannot completely rule out this possibility, the pattern of survey data we observe makes this seem unlikely. In particular, a number of changes observed in this data are not aligned with our expectations about both the setting and the effects that the intervention would have. These include the very low levels of self-reported gift-giving (we expected this would be higher during the baseline

period and fall more by endline), the minimal changes in perceptions of how many other users give gifts (we expected the intervention cause more of a change in perceived norms), and the surprisingly large changes in perceptions of family members' attitudes towards gift-giving (we did not expect the intervention to directly affect this). If the research assistants attempted to exaggerate the positive effects of the intervention, we would not expect to observe these surprising findings.

7.1.3 Uncertain generalisability to other settings

Some characteristics of the hospital that hosted the pilot, and the way in which the pilot was evaluated, may reduce the generalisability of the findings to other settings. The supportive attitude of the hospital management towards the intervention and its goals seems to have supported its feasibility, the fidelity of implementation, and its perceived impact. In addition, the presence of research assistants throughout the pilot was perceived by both providers and users as reinforcing the intent behind the trial.

Whether this intervention shows similar promise in health facilities where management is more ambivalent, and where there is no evaluation or perceived channel of feedback, remains to be seen. The potential role played by the research team in strengthening the credibility of the intervention also increases the uncertainty about whether any impacts of the intervention will be sustained following the end of the research project.

7.2 Implications

We interpret the evaluation findings as suggesting that the intervention shows enough evidence of promise to be maintained in place at the pilot setting. Its impact on gift-giving could be sustained or increased by considering refinements or additional activities suggested by interview participants and the pattern of responses at the endline period. These include:

- Offering the 'Champions Workshop' training to a wider range of staff;
- Recruiting more Staff Champions to help persuade and support a larger number of colleagues;
- Recruiting Staff Champions from all professions in the hospital that may be confronted with patient gifts;
- Considering basing the recruitment of subsequent champions at least partially on voluntary participation as (self-perception about) individual characteristics seem to have influenced perceived effectiveness as a Champion;
- Equipping Staff Champions with supporting materials, such as flyers, to use in their interactions with colleagues and hospital users; and

- Broadcasting audio versions of the intervention messages, to reach users who cannot read;
- Correcting inflated perceptions about how many other users give gifts (given the low level of reported gift-giving, in both baseline and endline periods)
- Emphasising that offering gifts will not result in better service in the future, regardless of the motivation behind the gift-giving

In addition, the design, content and placement of the desk signs as well as the letter to providers may need to be iterated in order for them to be more salient and useful to providers when faced with a hospital user offering a gift. This would likely involve further user-testing with providers to understand what would work best for them.

The intervention also appears to be feasible and promising enough to be piloted in other public healthcare facilities in similar contexts. While this will necessarily require some buy-in from hospital management, particularly in order to recruit and train Staff Champions, the results from the current pilot may make this buy-in easier to achieve going forward.

7.3 Suggested future research

One potential avenue of future research is following up at the pilot hospital to understand the longer-term sustainability and impact of the intervention. For example, a visit at 6 or 12-months, including observations, interviews and a repeat exit survey would help us learn whether the effects of the intervention expanded (as some interviewees predicted) or faded (as others predicted).[21]

Another productive source of follow-up work would be to monitor the scaling up of this intervention in other public health facilities. This would help us to understand how generalisable our findings are, and whether this intervention can be effective in a range of settings. As noted in the feasibility and fidelity section above, we were unable to implement the current pilot at another large public hospital in Dar es Salaam, because of limited engagement from the hospital management within the time we had available. However, this does not rule out the possibility of this hospital being engaged in a future trial. In designing such a trial, researchers should balance the need to collect sufficient information from stakeholders with the need to minimise the salience of researchers given the possibility that their presence might have artificially strengthened the intervention during the current pilot.

21 Similar to the current evaluation, the lack of a 'control group' would prevent such a follow-up study from conclusively quantifying the causal impact of the intervention. However, it would still be useful to observe whether support for the intervention was sufficient for it to have been maintained in the absence of the research team, whether the reduction in survey measures of gift-giving was sustained, and whether stakeholders perceived the intervention to still be playing a role in discouraging gift-giving (and indeed whether they recall the intervention at all).

A third avenue of follow-up work would involve refining the measures of gift-giving used here, or developing new measures that rely less on self-report. For example, a more accurate measure of users' behaviour could be obtained if there was regular, systematic reporting by providers of any offers of gifts. A 'mystery shopper' exercise, where individuals are tasked with offering a gift to providers and reporting how they respond, could also be considered in order to obtain better measures of provider behaviour.[22]

Finally, there is a case for conducting more research to design effective messages to convey the idea that even gift-giving out of gratitude provides a slippery slope towards corruption, especially in a context where 'gifts' are often used to obtain access to public services. While it is difficult and perhaps not even desirable to change the social norm around gifts being something positive, MAT and other key stakeholders agreed that this behaviour was problematic in a healthcare setting. However, our research indicated that, despite the intervention aiming towards making the link between gifts and corruption clear, some participants either did not pick up on this message or disagreed with it.

22 We considered this methodology for the current pilot, but did not proceed due to the concern that 'mystery shoppers' would be taking time away from providers who could otherwise spend the time treating real patients. This concern would be alleviated in less resource-constrained settings, or through other procedures such as the recruitment of real patients to help implement the mystery shopper exercise.

8 Appendix

8.1 Intervention materials

- Champion workshop outline for the facilitator and guide on mental contrasting exercise
- Text of letter to medical staff, provider messages and champions messages: English and Swahili. The format of the letter that was sent is shown in the image below:

THE MEDICAL ASSOCIATION OF TANZANIA

Tel. +255 655 400 823
Fax: +255 22 2153514
e-mail: doctorsmat@gmail.com
website: www.mat.or.tz

MuhimbiliUniversity Complex,
Ruvu Block – Ground Floor,
P.O. Box701,
Dar es Salaam,
Tanzania.

KUMB. MAT/GE/21/602 **10.11.2021**

Mpendwa mfanyakazi katika Hospitali ya Rufaa ya Mkoa Mwananyamala,

Wizara ya afya maendeleo ya jamii jinsia wazee na watoto, Chama cha madaktari Tanzania na vyama vingine vya wataalamu wa huduma za afya Tanzania, huchukulia kukubali zawadi kutoka kwa mgonjwa kuwa ni rushwa. Haijalishi zawadi imetolewa kabla au baada ya huduma, kama ni pesa au kitu kingine chochote. Haijalishi imetolewa kama shukrani au kwa ajili ya kupata kitu au unafuu katika huduma. Hatutavumilia mtoa huduma kujihusisha na rushwa. Baki safi na thamini maadili na taratibu za taaluma kama sharia ya kazi inavosema. Kataa zawadi yoyote.

[Jina la bingwa] anaamini katika haja ya kukataa zawadi ili kuruhusu watoa huduma za afya kutoa huduma za afya sawa na zinazoweza kupatikana kwa wagonjwa wote. Kwa kuidhinishwa na chama cha madaktari Tanzania (MAT) na kwa sababu ya nia yake amejiandikisha kuwa bingwa kwenye hili. Tayari ameshapata mafunzo na atasaidia [wodi / idara yako - ipasavyo] kusimama dhidi ya rushwa.

Kukusaidia kueleza dhamira yako kwa wagonjwa, tunatoa **bango na bango la mezani kwenye chumba cha daktari na eneo la mapokezi.** Bango la mezani linatoa ukumbusho na msaada wa mapendekezo ya namna ya kukataa kupokea zawadi.

Kinachotakiwa kufanyika katika kituo chako ni:

1. Kuongeza sahihi ya mfawidhi kwenye bango na kuweka mahali ambapo wagonjwa wanaposubiri kupata huduma wataliona na kusoma;
2. Kuweka bango la mezani kwenye kila chumba cha daktari (consultation room) na meza ya mapokezi, upande wenye hatua 4 rahisi ukimuelekea mtoa huduma wakati anatoa huduma.

[Jina la bingwa] atajibu maswali yako na kutoa mabango na mabango ya mezani iwapo yatahitajika.

Pamoja, tutapambana na rushwa!

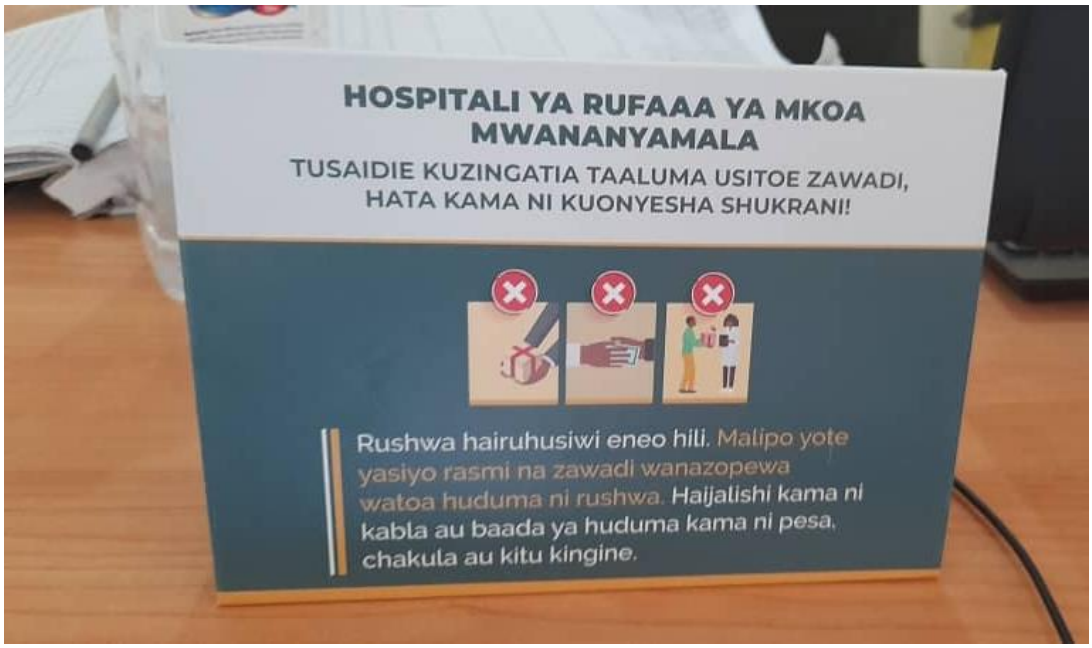
Kila la kheri,

.....
Dkt Shadrack S Mwaiba
Rais – Chama cha madaktari Tanzania (MAT)

Page 1 / 1

- Posters:

- Desk signs – patient-facing (top) and provider-facing (bottom) sides:



8.2 Data collection materials

- Staff Champions workshop observation guide
- Intervention materials observation guide
- Hospital user exit survey questionnaire
- Hospital user interview guide
- Staff Champion interview guide
- Medical provider interview guide
- Social network interview guide – for providers in intervention departments; for providers in non-intervention departments

8.3 Full regression tables for primary and secondary outcomes

Table A1: Regressions of gift-giving propensity score (primary outcome)

	(1)	(2)	(3)	(4)
	MI	MI	MI	CCA
Endline period	**0.498****	**0.496****	**0.488****	**0.502****
	(0.0529)	(0.0534)	(0.0522)	(0.0536)
Age group (reference: 18-27)				
28-38		1.020	1.048	1.035
		(0.121)	(0.125)	(0.122)
39 and over		0.728*	0.784+	0.740*
		(0.0941)	(0.104)	(0.0967)
Male		1.019	1.005	1.023
		(0.107)	(0.106)	(0.107)
Respondent is the patient		0.905	0.940	0.933
		(0.0953)	(0.0994)	(0.0968)
Nature and severity of service received by patient (reference: Severe illness / trauma)				
Mild illness / trauma		0.821	0.766*	0.815
		(0.108)	(0.102)	(0.107)
Preventative health / maternity services		0.850	0.871	0.850
		(0.122)	(0.125)	(0.122)
Patient has health insurance		1.187	1.230+	1.161
		(0.140)	(0.146)	(0.134)
Research assistant fixed effects	No	No	Yes	No
Observations	1192	1192	1192	1145
Baseline mean (score out of 2)	0.458	0.458	0.458	0.455
Baseline mean (%)	22.9%	22.9%	22.9%	22.8%

Exponentiated coefficients; Standard errors in parentheses
MI = multiple imputation; CCA = complete case analysis.
Quasibinomial regression models.
Model 2 is the pre-specified version, while other models are shown as robustness checks.
+ p < 0.10, * p < 0.05, ** p < 0.01

Table A2: Regressions of enabling norms score (secondary outcome 1)

	(1)	(2)	(3)	(4)
	MI	MI	MI	CCA
Endline period	**0.765****	**0.763****	**0.764****	**0.755****
	(0.0367)	(0.0370)	(0.0366)	(0.0374)
Age group (reference: 18-27)				
28-38		0.998	0.992	0.993
		(0.0603)	(0.0594)	(0.0609)
39 and over		0.850**	0.847**	0.833**
		(0.0505)	(0.0505)	(0.0503)
Male		1.109*	1.127*	1.118*
		(0.0562)	(0.0565)	(0.0575)
Respondent is the patient		0.978	0.978	0.998
		(0.0497)	(0.0494)	(0.0516)
Nature and severity of service received by patient (reference: Severe illness / trauma)				
Mild illness / trauma		0.962	0.942	1.013
		(0.0614)	(0.0610)	(0.0668)
Preventative health / maternity services		1.010	0.988	1.035
		(0.0705)	(0.0682)	(0.0739)
Patient has health insurance		1.044	1.042	1.072
		(0.0584)	(0.0570)	(0.0606)
Research assistant fixed effects	No	No	Yes	No
Observations	1192	1192	1192	1118
Baseline mean (score out of 8)	3.70	3.70	3.70	3.72
Baseline mean (%)	46.3%	46.3%	46.3%	46.5%

Exponentiated coefficients; Standard errors in parentheses
MI = multiple imputation; CCA = complete case analysis.
Quasibinomial regression models.
Model 2 is the pre-specified version, while other models are shown as robustness checks.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Table A3: Regressions of enabling attitudes score (secondary outcome 2)

	(1)	(2)	(3)	(4)
	MI	MI	MI	CCA
Endline period	**0.621****	**0.604****	**0.604****	**0.612****
	(0.0493)	(0.0485)	(0.0486)	(0.0492)
Age group (reference: 18-27)				
28-38		0.827+	0.820*	0.834+
		(0.0817)	(0.0809)	(0.0822)
39 and over		0.652**	0.620**	0.650**
		(0.0635)	(0.0615)	(0.0653)
Male		0.977	0.965	0.990
		(0.0812)	(0.0803)	(0.0834)
Respondent is the patient		1.085	1.056	1.099
		(0.0891)	(0.0868)	(0.0931)
Nature and severity of service received by patient (reference: Severe illness / trauma)				
Mild illness / trauma		0.784*	0.843	0.774*
		(0.0833)	(0.0900)	(0.0823)
Preventative health / maternity services		0.810+	0.821+	0.805+
		(0.0961)	(0.0971)	(0.0938)
Patient has health insurance		1.217*	1.198*	1.181+
		(0.110)	(0.109)	(0.106)
Research assistant fixed effects	No	No	Yes	No
Observations	1192	1192	1192	1099
Baseline mean (score out of 3)	1.67	1.67	1.67	1.67
Baseline mean (%)	55.8%	55.8%	55.8%	55.8%

Exponentiated coefficients; Standard errors in parentheses
MI = multiple imputation; CCA = complete case analysis.
Quasibinomial regression models.
Model 2 is the pre-specified version, while other models are shown as robustness checks.
+ p < 0.10, * p < 0.05, ** p < 0.01

8.4 Time trend analysis of survey outcome measures

Figure A1: Linear time trends in primary outcome within baseline and endline periods. These trends are not statistically significant.

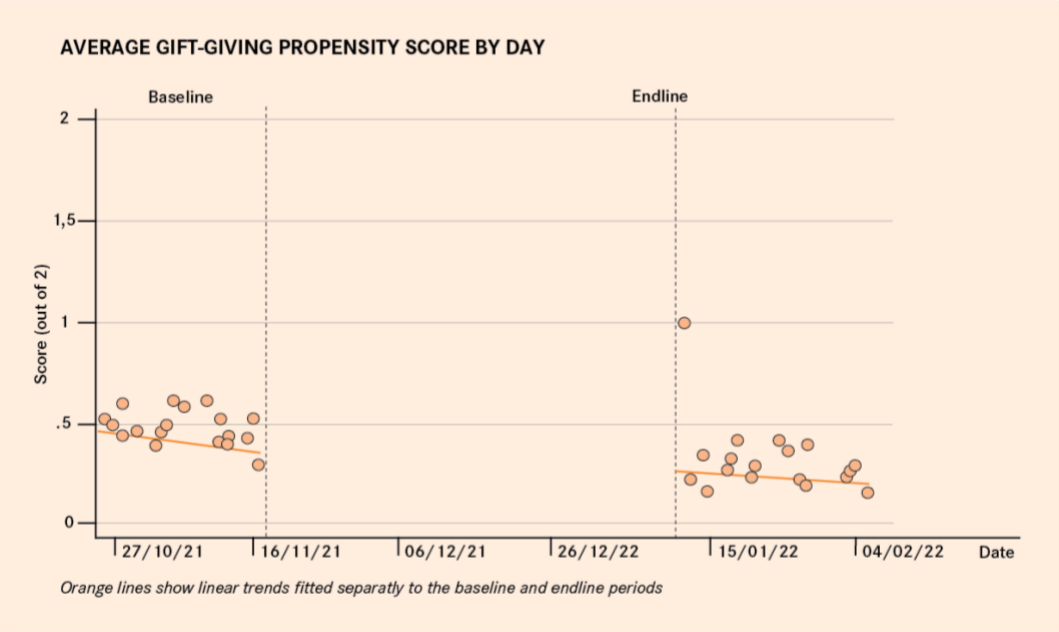


Table A4: OLS regressions of gift-giving propensity scores, with and without linear time trends

	(1)	(2)	(3)
	No trends	Trends 1	Trends 2
Endline period	**-0.198****	**0.0434**	**-0.118**
	(0.0294)	(0.252)	(0.112)
Age group (reference: 18-27)			
28-38	0.0113	0.0138	0.0138
	(0.0360)	(0.0362)	(0.0362)
39 and over	-0.0853*	-0.0852*	-0.0852*
	(0.0365)	(0.0365)	(0.0365)
Male	0.00638	0.00457	0.00457
	(0.0306)	(0.0305)	(0.0305)
Respondent is the patient	-0.0214	-0.0180	-0.0180
	(0.0306)	(0.0308)	(0.0308)
Nature and severity of service received by patient (reference: Severe illness / trauma)			
Mild illness / trauma	-0.0621	-0.0635	-0.0635
	(0.0402)	(0.0402)	(0.0402)
Preventative health / maternity services	-0.0498	-0.0524	-0.0524
	(0.0432)	(0.0432)	(0.0432)
Patient has health insurance	0.0444	0.0432	0.0432
	(0.0345)	(0.0347)	(0.0347)
No. days since pilot launch		-0.00317	
		(0.00294)	
Endline period * No. days since pilot launch		0.000121	
		(0.00402)	
Day of data collection			-0.00317
			(0.00294)

Endline period * day of data collection			0.000121
			(0.00402)
Constant	0.527**	0.561**	0.561**
	(0.0499)	(0.0586)	(0.0586)
Observations	1145	1145	1145

Standard errors in parentheses.
The 'Trends 1' model counts the period in between baseline and endline data collection while 'Trends 2' does not.
OLS regression models; complete case analysis.
+ p < 0.10, * p < 0.05, ** p < 0.01

Figure A2: Linear time trends in secondary outcome 1 within baseline and endline periods. These trends are not statistically significant.

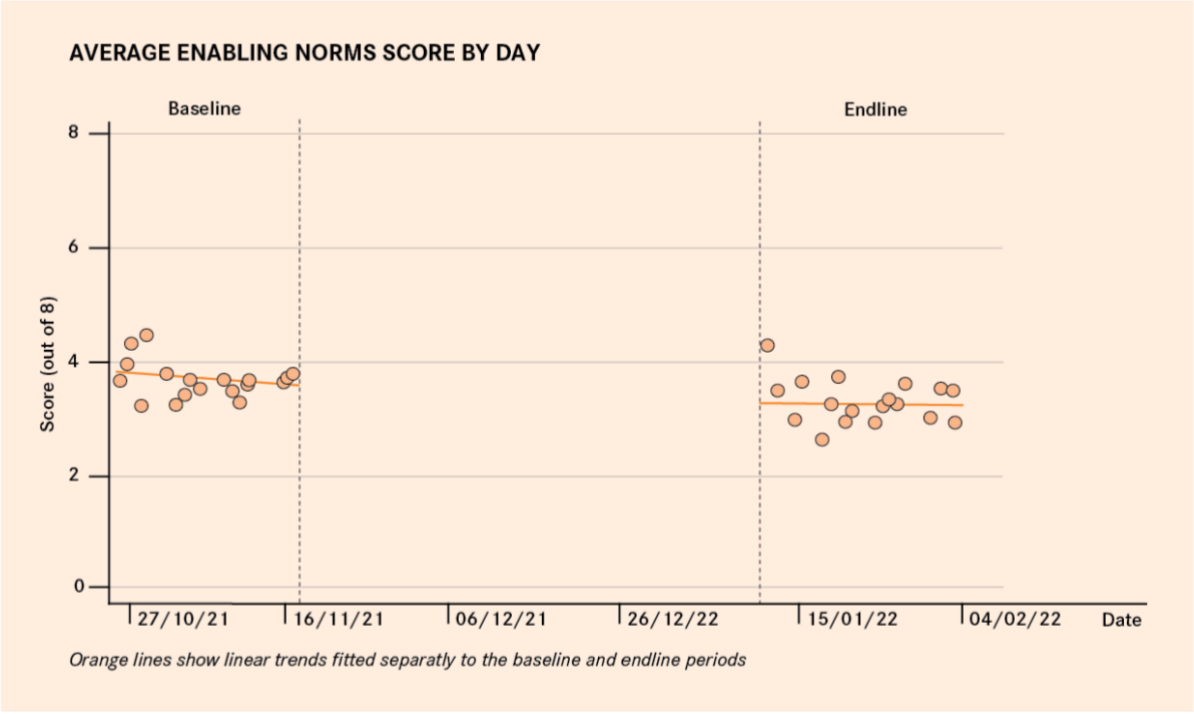


Table A5: OLS regressions of enabling norms scores, with and without linear time trends.

	(1)	(2)	(3)
	No trends	Trends 1	Trends 2
Endline period	**-0.548****	**-0.418**	**-0.550**
	(0.0966)	(0.863)	(0.379)
Age group (reference: 18-27)			
28-38	-0.0137	-0.0120	-0.0120
	(0.121)	(0.121)	(0.121)
39 and over	-0.356**	-0.356**	-0.356**
	(0.118)	(0.118)	(0.118)
Male	0.218*	0.216*	0.216*
	(0.101)	(0.101)	(0.101)
Respondent is the patient	-0.00484	0.00179	0.00179
	(0.101)	(0.102)	(0.102)
Nature and severity of service received by patient (reference: Severe illness / trauma)			
Mild illness / trauma	0.0247	0.0213	0.0213
	(0.129)	(0.129)	(0.129)
Preventative health / maternity services	0.0655	0.0583	0.0583
	(0.139)	(0.140)	(0.140)
Patient has health insurance	0.135	0.130	0.130
	(0.111)	(0.111)	(0.111)
No. days since pilot launch		-0.00884	
		(0.00915)	
Endline period * No. days since pilot launch		0.00637	
		(0.0132)	
Day of data collection			-0.00884
			(0.00915)
			0.00637

Endline period * day of data collection			(0.0132)
Constant	3.699**	3.793**	3.793**
	(0.160)	(0.190)	(0.190)
Observations	1118	1118	1118

Standard errors in parentheses.
The 'Trends 1' model counts the period in between baseline and endline data collection while 'Trends 2' does not.
OLS regression models; complete case analysis.
$^{+}$ p < 0.10, * p < 0.05, ** p < 0.01

Figure A3: Linear time trends in secondary outcome 2 within baseline and endline periods. These trends are not statistically significant.

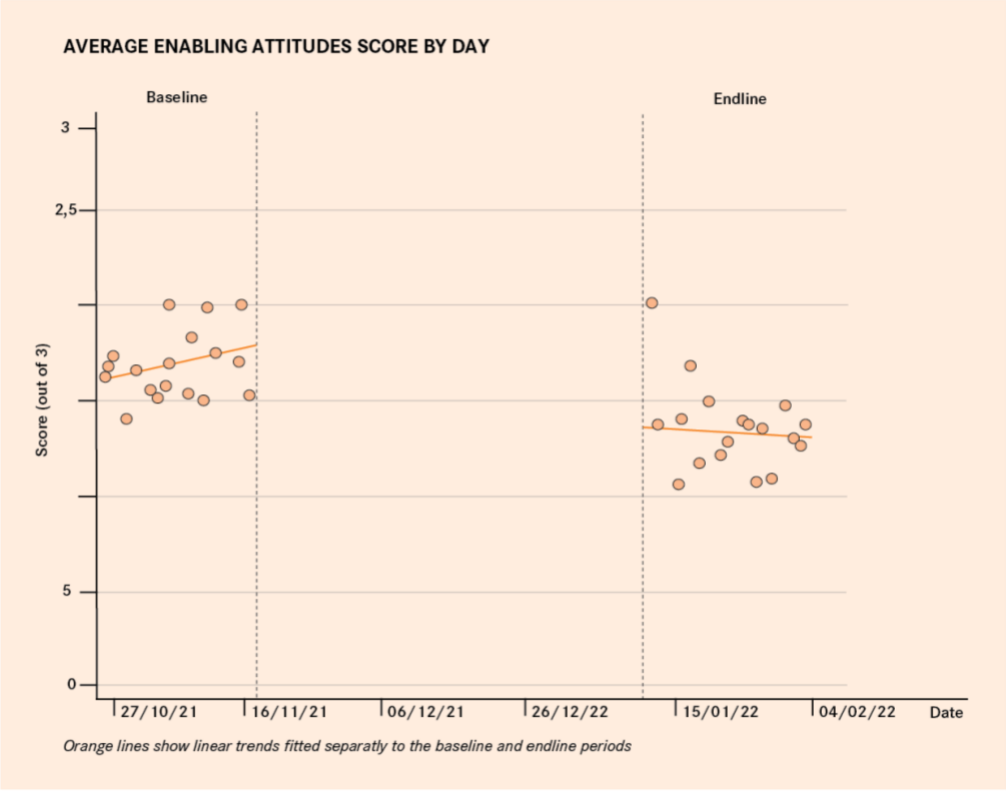


Table A6: OLS regressions of enabling attitudes scores, with and without linear time trends.

	(1)	(2)	(3)
	No trends	Trends 1	Trends 2
Endline period	**-0.363****	**-0.0932**	**-0.222**
	(0.0589)	(0.547)	(0.239)
Age group (reference: 18-27)			
28-38	-0.133+	-0.131+	-0.131+
	(0.0725)	(0.0725)	(0.0725)
39 and over	-0.316**	-0.316**	-0.316**
	(0.0733)	(0.0733)	(0.0733)
Male	-0.00755	-0.00882	-0.00882
	(0.0619)	(0.0619)	(0.0619)
Respondent is the patient	0.0691	0.0679	0.0679
	(0.0622)	(0.0621)	(0.0621)
Nature and severity of service received by patient (reference: Severe illness / trauma)			
Mild illness / trauma	-0.188*	-0.187*	-0.187*
	(0.0778)	(0.0779)	(0.0779)
Preventative health / maternity services	-0.159+	-0.155+	-0.155+
	(0.0853)	(0.0856)	(0.0856)
Patient has health insurance	0.122+	0.125+	0.125+
	(0.0657)	(0.0657)	(0.0657)
No. days since pilot launch		0.00470	
		(0.00541)	
Endline period * No. days since pilot launch		-0.00713	
		(0.00808)	
Day of data collection			0.00470
			(0.00541)

Endline period * day of data collection			-0.00713
			(0.00808)
Constant	1.900**	1.848**	1.848**
	(0.100)	(0.117)	(0.117)
Observations	1099	1099	1099

Standard errors in parentheses.
The 'Trends 1' model counts the period in between baseline and endline data collection while 'Trends 2' does not.
OLS regression models; complete case analysis.
$^{+}$ p < 0.10, * p < 0.05, ** p < 0.01

8.5 Regressions with and without treatment exposure variables

Table A7: Regressions of gift-giving propensity score

	(1)	(2)
	Model 1	Model 2
Endline period	**0.496****	**0.690****
	(0.0534)	(0.0810)
Age group (reference: 18-27)		
28-38	1.020	1.036
	(0.121)	(0.123)
39 and over	0.728*	0.722*
	(0.0941)	(0.0954)
Male	1.019	1.025
	(0.107)	(0.108)
Respondent is the patient	0.905	0.934
	(0.0953)	(0.0970)
Nature and severity of service received by patient (reference: Severe illness / trauma)		
Mild illness / trauma	0.821	0.820
	(0.108)	(0.109)
Preventative health / maternity services	0.850	0.848
	(0.122)	(0.123)

Patient has health insurance	1.187	1.159
	(0.140)	(0.138)
Reported seeing a poster about gift-giving		0.561**
		(0.0924)
Reported seeing a desk sign about gift-giving		0.642
		(0.201)
Observations	1192	1126

Exponentiated coefficients; Standard errors in parentheses
Quasibinomial regression models.
Model 2 shows how the treatment coefficient changes once exposure indicators are included.
+ p < 0.10, * p < 0.05, ** p < 0.01

Table A8: Regressions of enabling norms score

	(1)	(2)
	Model 1	Model 2
Endline period	**0.763****	**0.782****
	(0.0370)	(0.0460)
Age group (reference: 18-27)		
28-38	0.998	1.005
	(0.0603)	(0.0618)
39 and over	0.850**	0.847**
	(0.0505)	(0.0513)
Male	1.109*	1.114*
	(0.0562)	(0.0573)
Respondent is the patient	0.978	0.997
	(0.0497)	(0.0516)
Nature and severity of service received by patient (reference: Severe illness / trauma)		
Mild illness / trauma	0.962	1.008
	(0.0614)	(0.0660)
	1.010	1.036

Preventative health / maternity services	(0.0705)	(0.0740)
Patient has health insurance	1.044	1.053
	(0.0584)	(0.0598)
Reported seeing a poster about gift-giving		0.918
		(0.0675)
Reported seeing a desk sign about gift-giving		1.073
		(0.0968)
Observations	1192	1126

Exponentiated coefficients; Standard errors in parentheses
Quasibinomial regression models.
Model 2 shows how the treatment coefficient changes once exposure indicators are included.
+ p < 0.10, * p < 0.05, ** p < 0.01

Table A9: Regressions of enabling attitudes score

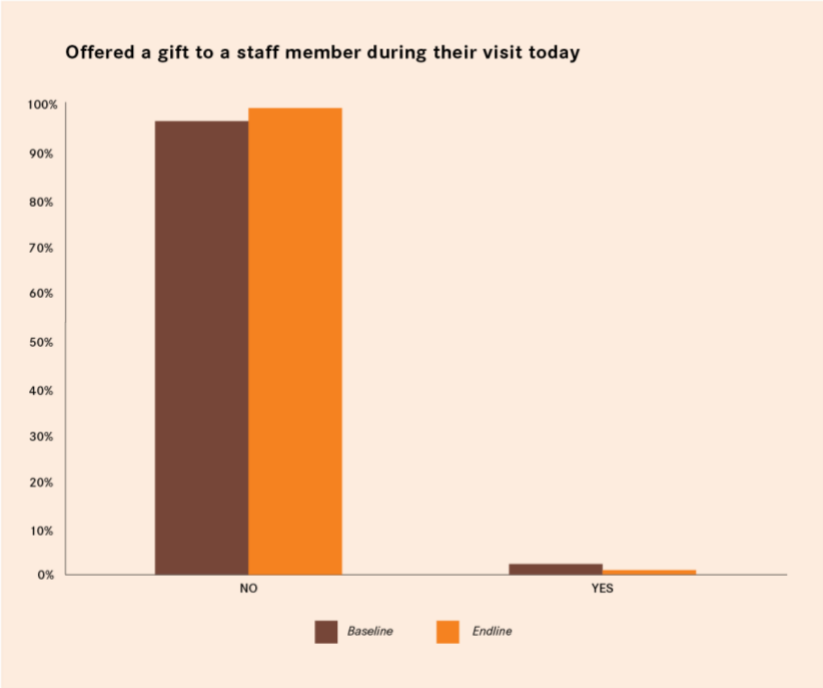
	(1)	(2)
	Model 1	Model 2
Endline period	**0.604****	**0.745****
	(0.0485)	(0.0693)
Age group (reference: 18-27)		
28-38	0.827+	0.847+
	(0.0817)	(0.0830)
39 and over	0.652**	0.657**
	(0.0635)	(0.0652)
Male	0.977	0.980
	(0.0812)	(0.0816)
Respondent is the patient	1.085	1.122
	(0.0891)	(0.0941)
Nature and severity of service received by patient (reference: Severe illness / trauma)		
Mild illness / trauma	0.784*	0.781*

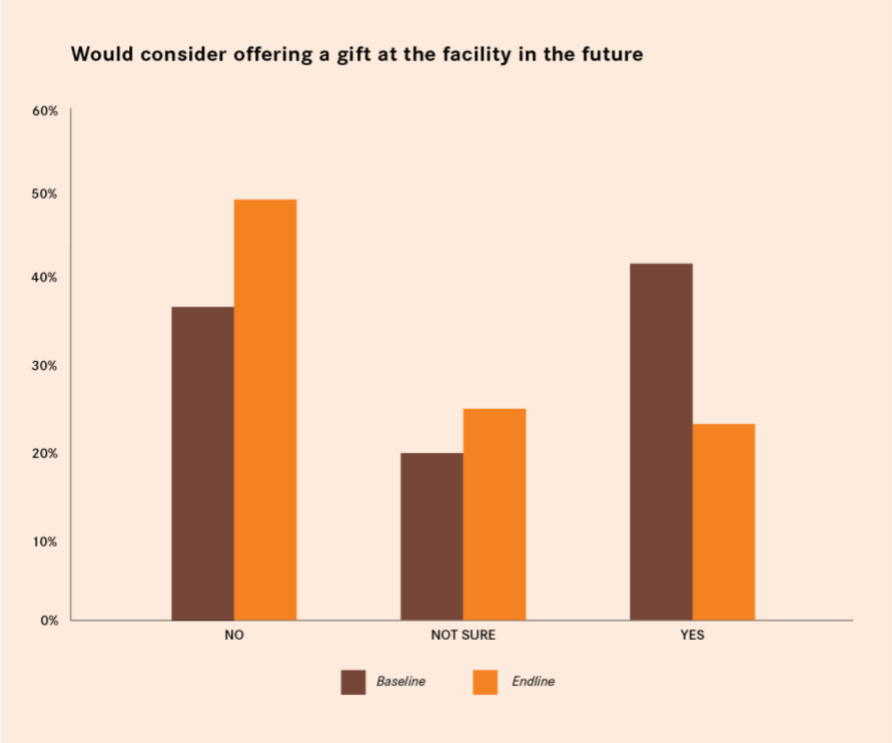
	(0.0833)	(0.0836)
Preventative health / maternity services	0.810^{+}	0.801^{+}
	(0.0961)	(0.0941)
Patient has health insurance	1.217*	1.191^{+}
	(0.110)	(0.108)
Reported seeing a poster about gift-giving		0.737**
		(0.0833)
Reported seeing a desk sign about gift-giving		0.729*
		(0.112)
Observations	1192	1126

Exponentiated coefficients; Standard errors in parentheses
Quasibinomial regression models.
Model 2 shows how the treatment coefficient changes once exposure indicators are included.
+ p < 0.10, * p < 0.05, ** p < 0.01

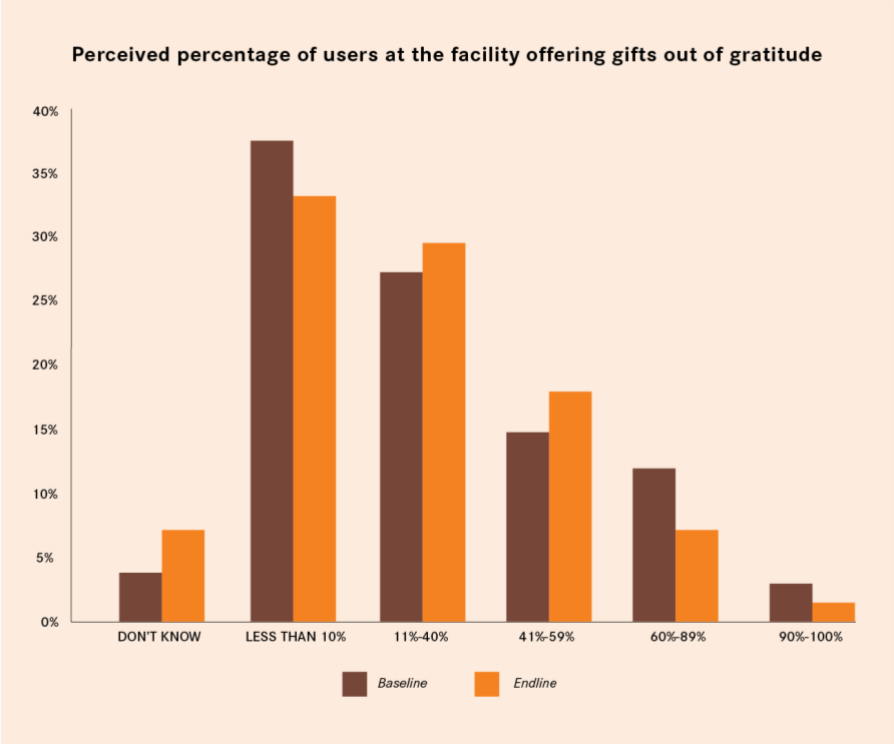
8.6 Distribution of underlying survey responses

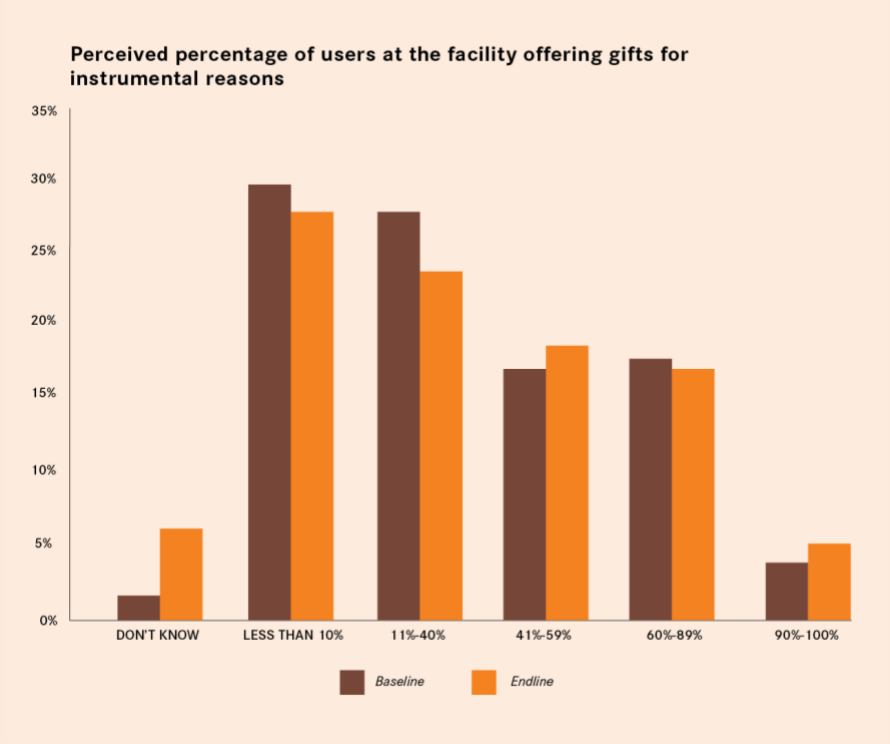
8.6.1 Gift-giving propensity score – underlying survey responses

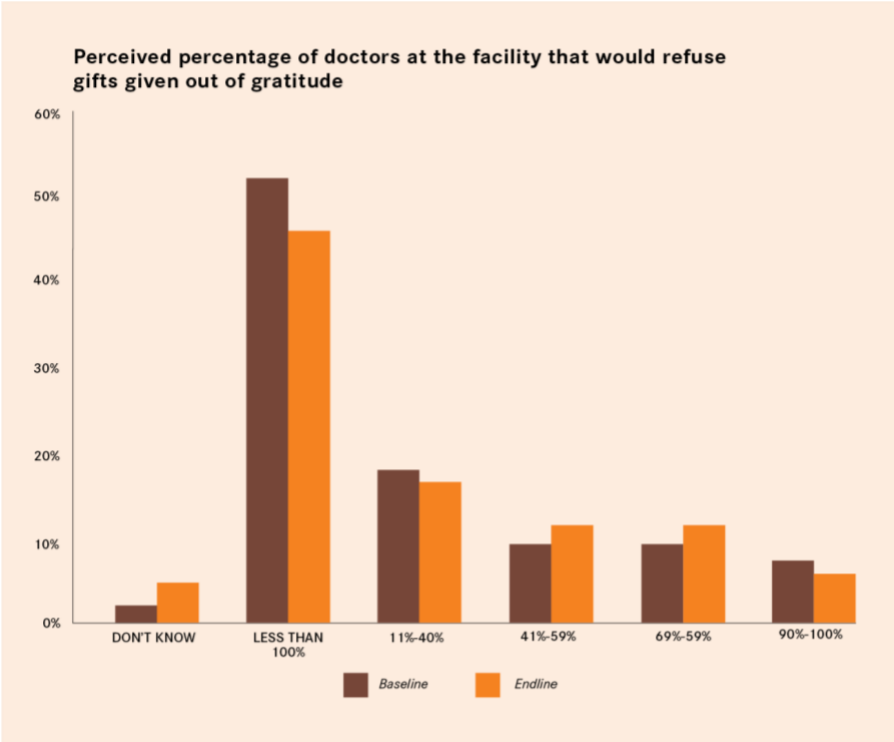


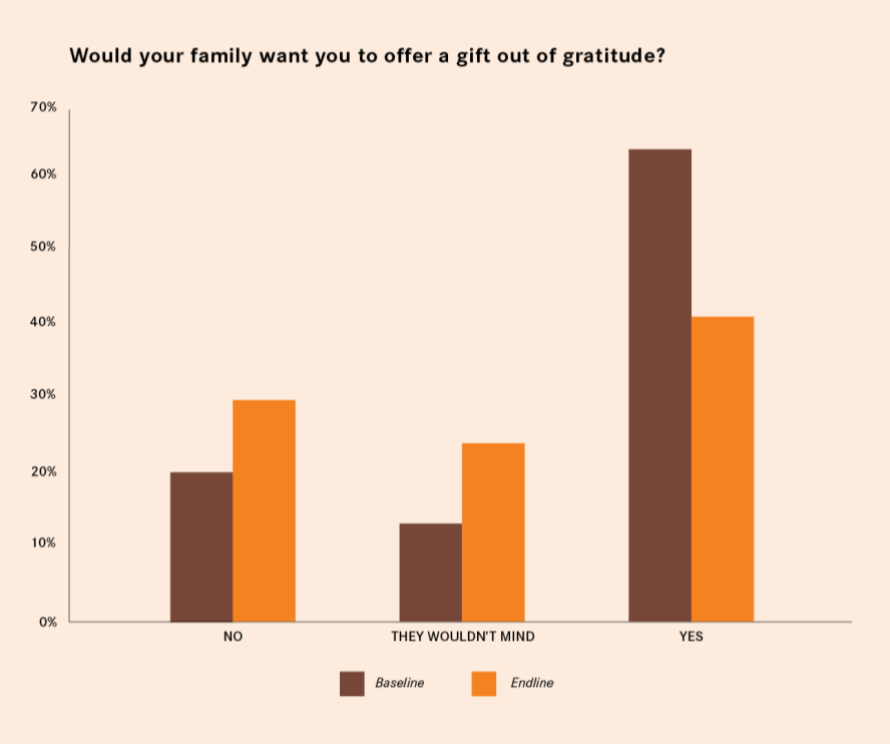


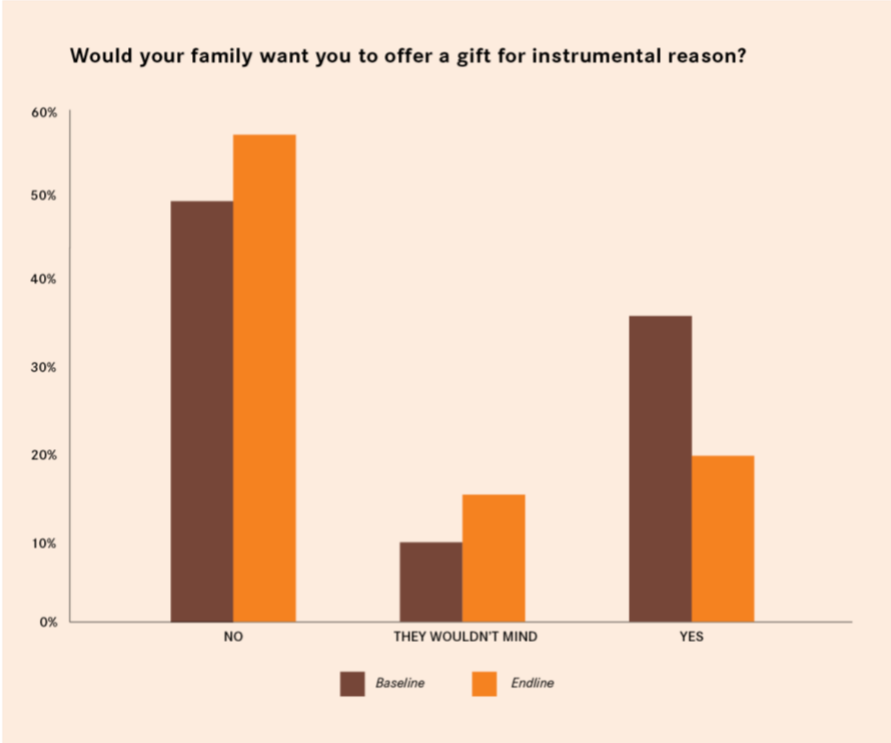
8.6.2 Enabling norms score – underlying survey responses

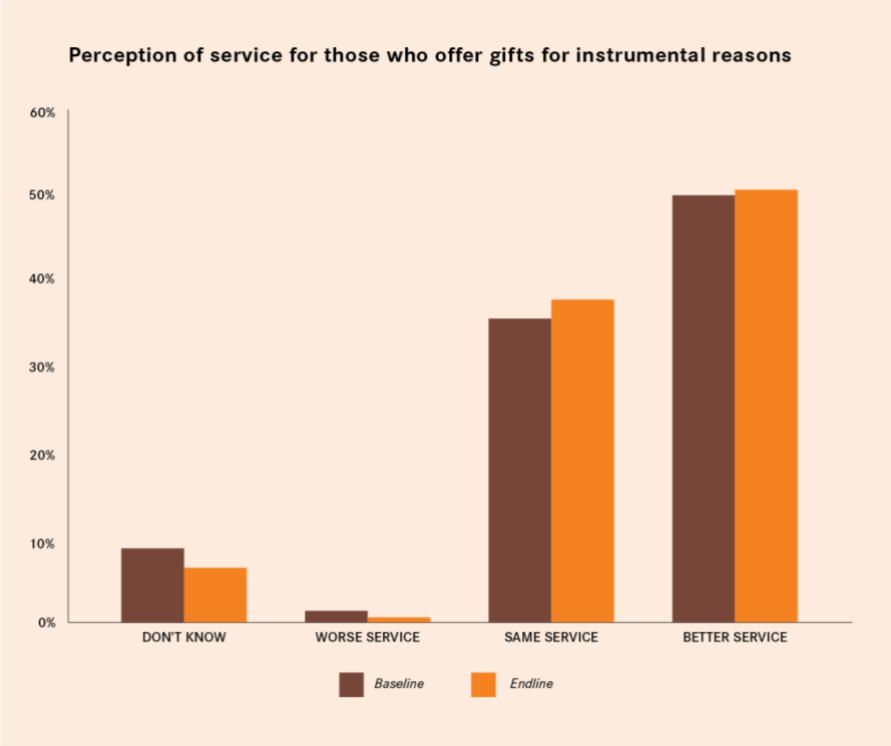


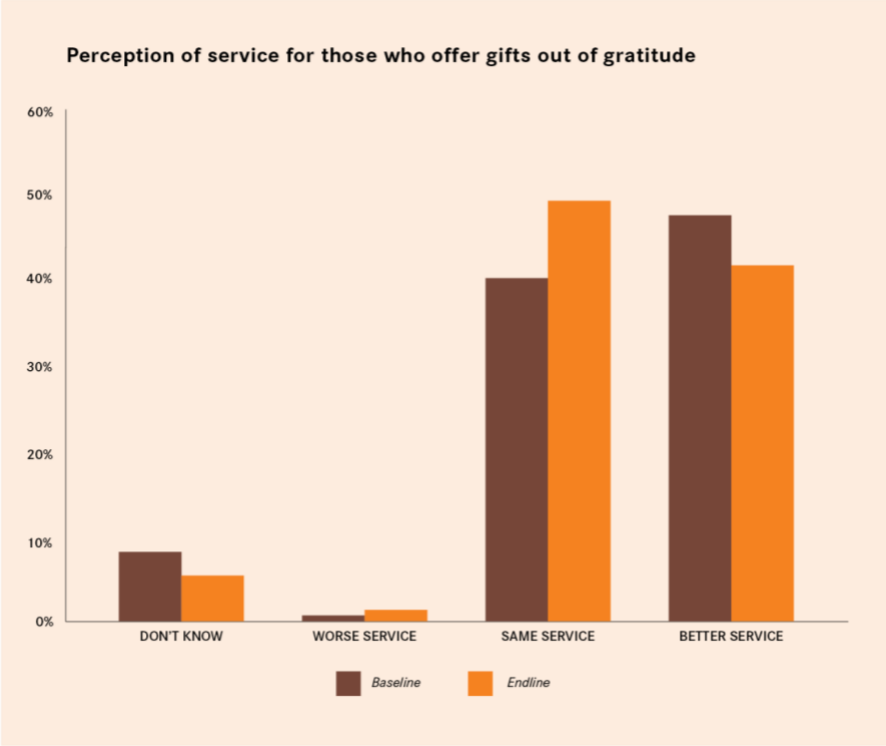

Perceived percentage of users at the facility offering gifts for instrumental reasons
35%
30%
25%
20%
15%
10%
5%
0%
DON'T KNOW
LESS THAN 10%
11%-40%
41%-59%
60%-89%
90%-100%
Baseline
Endline

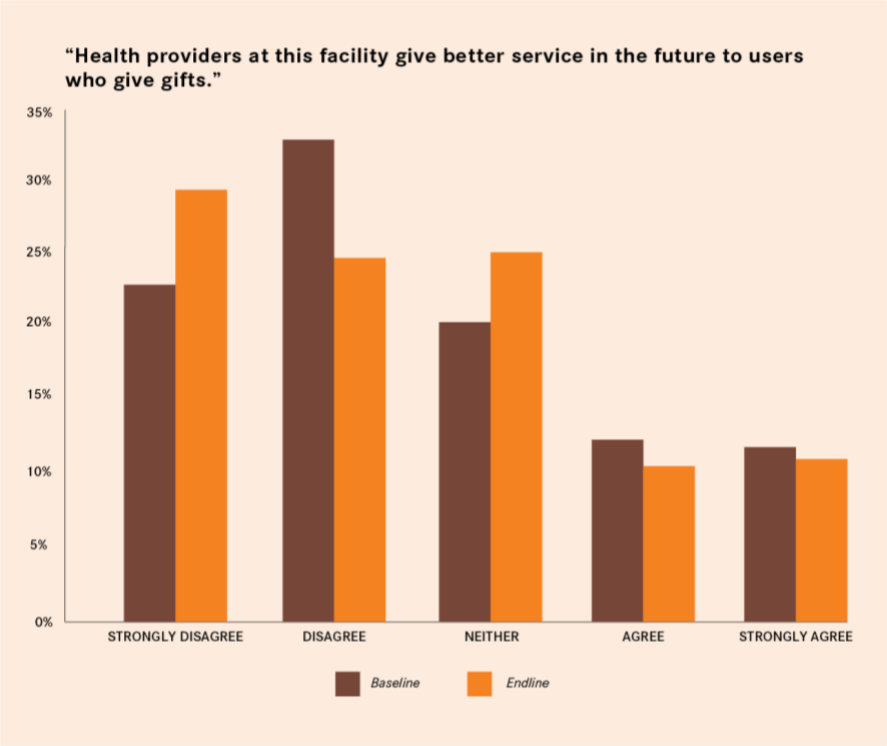

Perceived percentage of doctors at the facility that would refuse gifts given out of gratitude
60%
50%
40%
30%
20%
10%
0%
DON'T KNOW
LESS THAN 100%
11%-40%
41%-59%
69%-59%
90%-100%
Baseline
Endline


Would your family want you to offer a gift out of gratitude?
70%
60%
50%
40%
30%
20%
10%
0%
NO
THEY WOULDN'T MIND
YES
Baseline
Endline

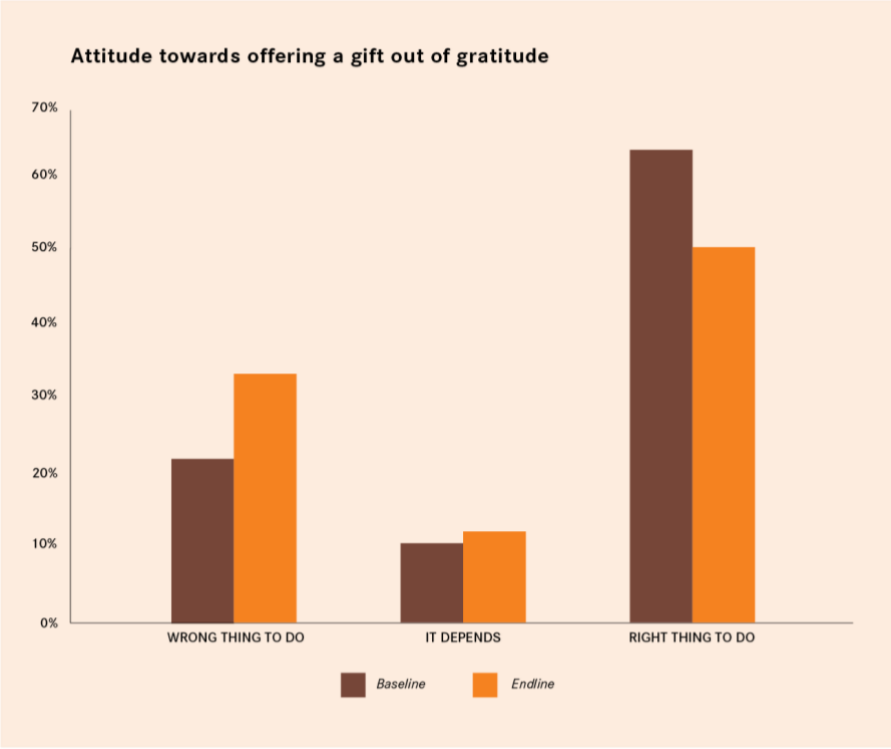

Would your family want you to offer a gift for instrumental reason?
60%
50%
40%
30%
20%
10%
0%
NO
THEY WOULDN'T MIND
YES
Baseline
Endline

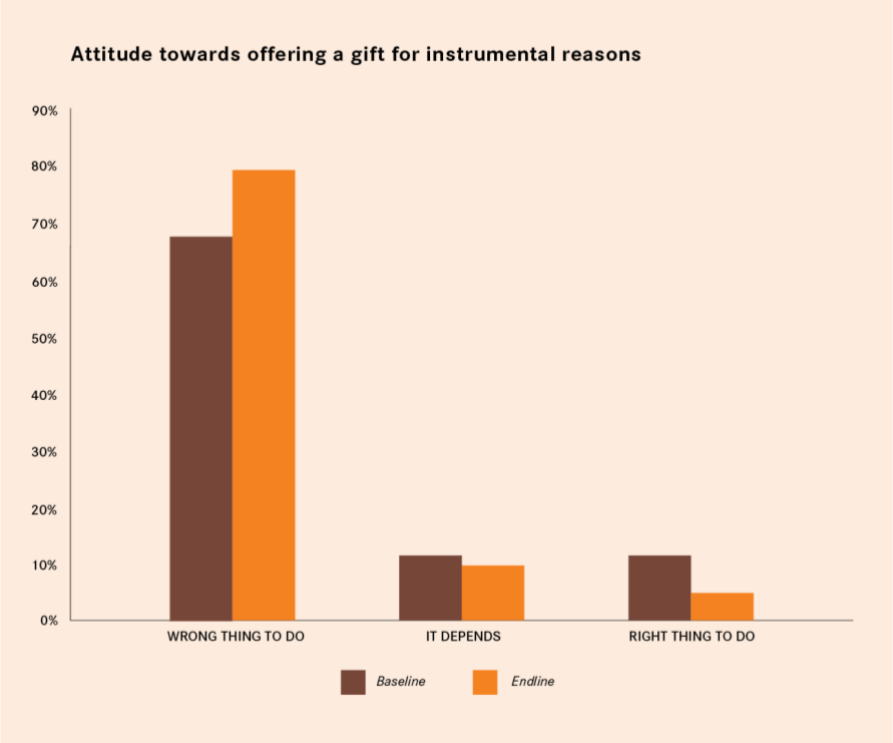

Perception of service for those who offer gifts for instrumental reasons
60%
50%
40%
30%
20%
10%
0%
DON'T KNOW
WORSE SERVICE
SAME SERVICE
BETTER SERVICE
Baseline
Endline

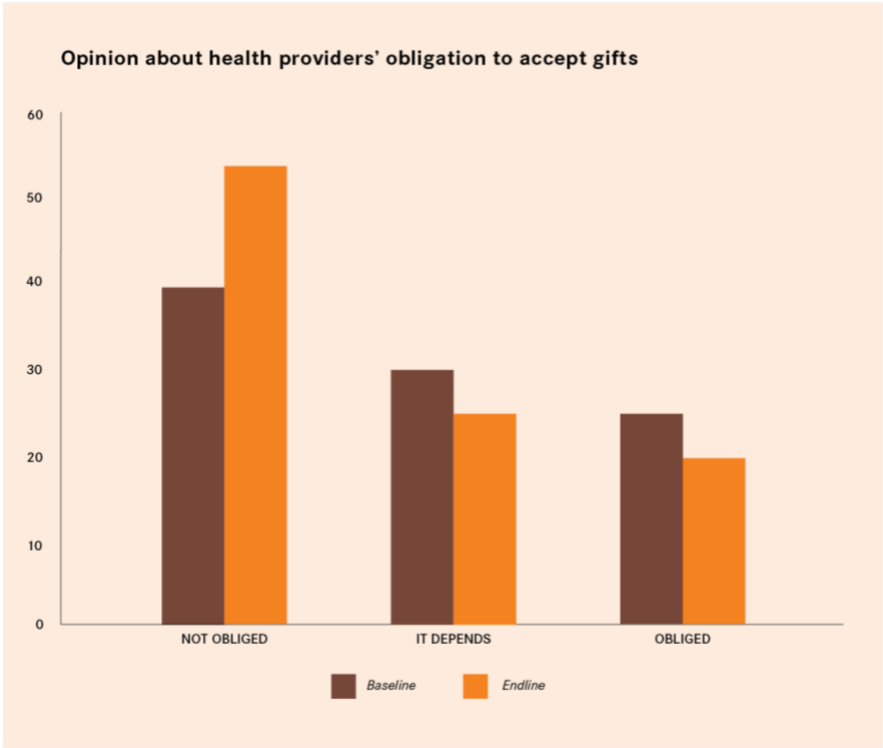

Perception of service for those who offer gifts out of gratitude
60%
50%
40%
30%
20%
10%
0%
DON'T KNOW
WORSE SERVICE
SAME SERVICE
BETTER SERVICE
Baseline
Endline



8.6.3 Enabling attitudes score – underlying survey responses




Attitude towards offering a gift for instrumental reasons
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
WRONG THING TO DO
IT DEPENDS
RIGHT THING TO DO
Baseline
Endline


Opinion about health providers' obligation to accept gifts
60
50
40
30
20
10
0
NOT OBLIGED
IT DEPENDS
OBLIGED
Baseline
Endline

8.6.4 Other survey responses