# Our TMC-Journey
# (and beyond)

4 Projects
8 Weeks
Amazing People
A life-changing experience
A REAL (??) contribution

Final TATA-ISES Report
Tata Medical Center
July-August 2012
Karolina Gombert
Robin van Dalen

## Acknowledgements

This report was a result of a thoroughly collaborative process. From the start, we have received the full support of all consultants, nurses, security and house staff who facilitated our often difficult and out-of-the ordinary requests. This has made it possible to deliver multiple projects that we hope (and believe) have made a real contribution to the development of the Tata Medical Center – however small this contribution may be. In particular, we have to thank Dr. Soumitra Datta, who has been our home base throughout the project phase and welcomed every new crazy idea of ours with both enthusiasm and a critical discussion. Dr Jaydip Bhaumik and Dr Basumita Chakraborti both supervised the cancer awareness project. Despite very tight schedules as practicing doctors they always made time for us and made sure we were on the right track, and ultimately created a comfortable working environment. We also greatly appreciate the quality time they spent with us. Moreover, Dr. Sanjay Bhattacharya has been a great support, and helped us to design and execute a proper hand-hygiene baseline research, as well as Dr. Nabajyoti Choudhury who proactively initiated and supported the blood donor research. Last but not least, we have to thank extensively the security personnel who were always there to rescue us when we got locked in or out from the digital library (which happened about 6 times a day) or were our first target whenever we had odd requests. Similarly, the housekeeping personnel were always there with their great courteous smiles, and no matter where we would work they would find us for a delicious coffee. Last but not least, we have to thank all the other consultants and the external parties which have offered us so much of their precious time to develop our projects and recommendations. We are proud and grateful to have been part of this amazing and impressive community, and wish TMC all the best for the future. Hopefully, see you again soon!

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# 1. Introduction

The report lying in front of you is the result of our 8-week journey at and beyond TMC as part of the TATA-ISES programme. It has been a beautiful, but also at times mind-boggling journey, as it was packed with 18 interviews, 9 focus-group discussions, 470 minutes of formal observations, 820 surveys among doctors, nurses, students and blood donors, and visits to 4 schools, 4 NGOs and 1 donor. This is not only reflected in long car-drives across Kolkata, but also in (we hope) valuable findings and recommendations, and a set of insights that are grounded in an understanding of TMC that go beyond the hospital walls.

Originally, Karolina was assigned to the cancer-awareness project with Dr. Basumita Chakraborti and Dr Jaydip Bhaumik; and Robin to the discounting process with Dr. Soumitra Datta, in which they joined the UC Berkeley interns who had already been working on these projects four weeks before. However, soon we found that this was not sufficient work to usefully fill our time at TMC with, so we took up additional projects. Karolina set up the blood-donor research in cooperation with Dr. Choudhury, and Robin the hand-hygiene project together with Dr. Sanjay Bhattacharya. After the Berkeley students left, we also decided to work closely together on our projects.

The reason we decided to write this report together is the same reason that we early on decided to team-up: much of the insights gained in one project, were helpful for other projects, too. For example, interviews with the patients on the discounting process led to interesting insights in their cancer-awareness. Consequently, we executed almost all of the data collection, visits and analysis together to fully exploit the information spill-overs. Additionally, our access to such a wide range of very different information sources led us to set up a new project, 'TMC-To-Kolkata'. In this project we put together the most striking findings that followed from the combined findings.

As a result, in this report we will present 4 projects, but the information sources for each of the projects are not limited to those described in the methods. Every project presentation contains information from a range of sources and projects.

We hope that through our efforts we have contributed our tiny bit to the development of TMC, and through there to the health and wellbeing of the people of Kolkata and West-Bengal at large. At the minimum, it has been an invaluable experience for ourselves, where we acquired lasting insights, a deeper understanding of the complexity of development issues and Indian society, and last but not least, a great respect for the amazing staff of the Tata Medical Center. We are grateful to have met such a great group of motivated, competent and knowledgeable people, dedicated to the common good and interests of their society and country.

Although we predicted that this report - as most reports typically do - will end up in a drawer never to be looked at again, we hope that its valuable contents have already reached its destination through our presentation and many talks both at and outside TMC. The most important part of this report is probably the list of contact persons at the end: we tried to put a short summary for persons we spoke to and who would be helpful for further cooperation with TMC. And to the person reading this report now: we hope you enjoy it, and will be able to take some valuable lessons out of it. We at least tried to put some in :)!

*Karolina Gombert & Robin van Dalen, Kolkata, August 2012*

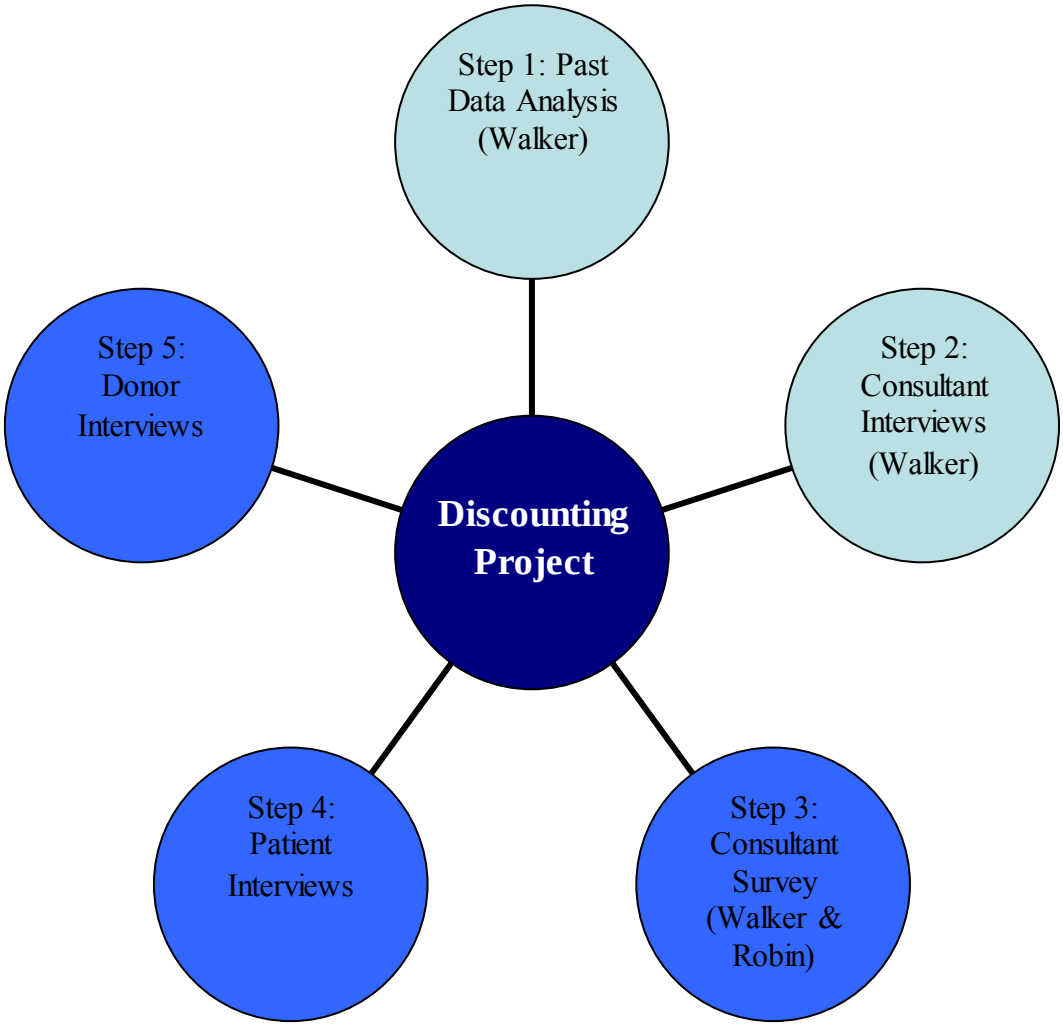
# 2. Project #1: Discounting

## *2.1. Introduction*

The aim of the discounting project was to look into the current discounting practices of TMC and see if and how the process could be improved. TMC's aim is to provide half of the beds for free or for a discounted price to underprivileged patients, which should be funded by privileged patients who pay a premium price for extra services. Patients should therefore pay a price for treatment according to their means. The process by which it is established what the patients' means are and how much discount he or she is allowed, is called the discounting process. Clearly, such a process is very complicated, challenging and prone to be abused, especially in the Indian context where it is difficult to find out someone's true economic status. Bribery of government officials, poor documentation and registration of assets and tax-payments and the vast distances from which patients come before they arrive at TMC are all complicating the process. The aim of this project was to provide an insight in the current functioning of the discounting process and provide possible recommendations.

The project was started by a University of Berkeley intern, Walker Dove, who constructed the outline of the project and executed the first part, in which he analysed available data on discounting and conducted doctor interviews. Initial ideas were extracted from here and put to a test in a survey that was sent around to TMC's consultants. Robin van Dalen's task was to complete the project by analysing the survey data and conducting patient and doctor interviews.

**Figure 1: Phases of discounting project**
*The light blue marked circles are the phases Walker has presented in his report, and will only be summarised here. The darker blue phases are fully presented in this report.*




## *2.2. First part discounting project summary*

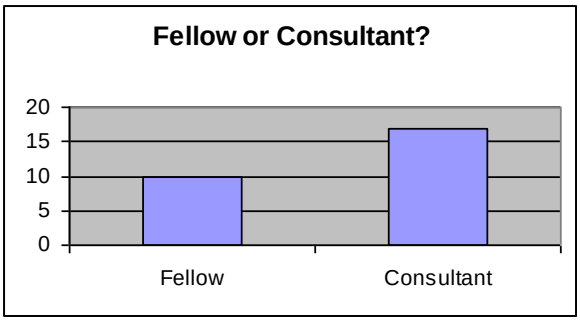
For these results, see the report written by the Berkley student Walker Dove[1] (TISES report, TMC, June and July 2012).

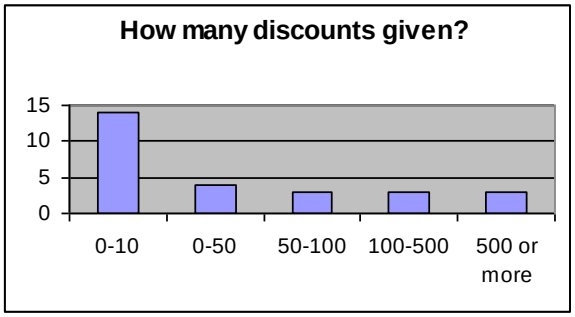
[1] The world's leading chapatti eater.

## *2.3. Doctor Discounting Survey Results*

### Respondent profile

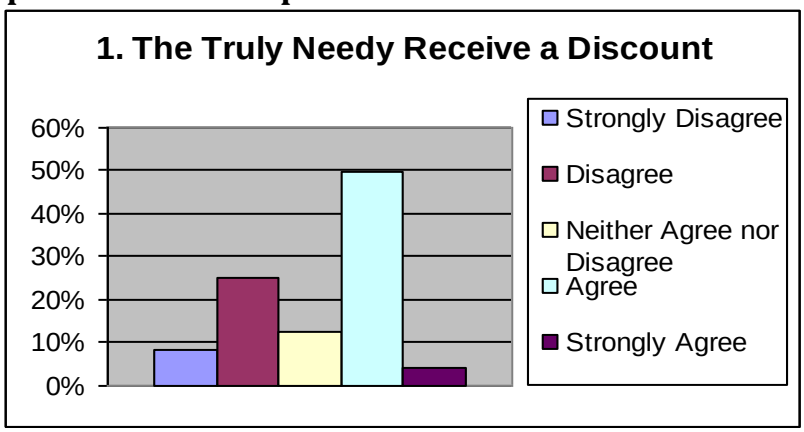
The survey had quite a low response rate with 27 respondents, of which 17 were consultants and 10 fellows. Of these respondents, about 13 were highly experienced in giving out discounts (between 10-500 discounts given) and the other half had little experience (0-10 discounts given).

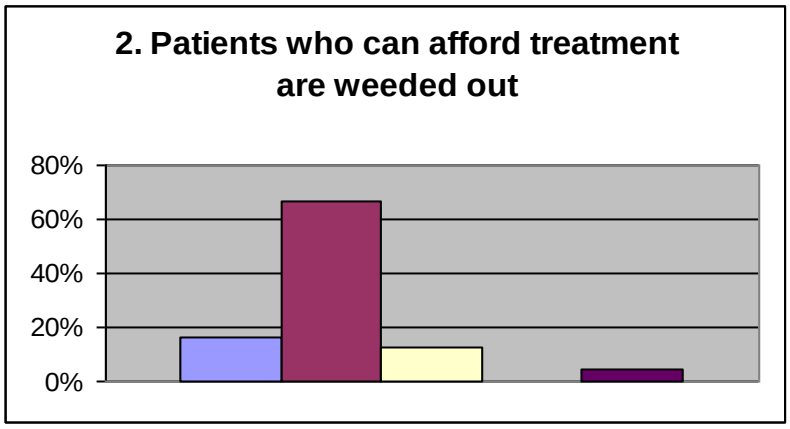



### Finding 1: Current discounting process needs improvement

The main conclusion from the survey data is that cheating patients seems to be the main problem, since (a small) majority agrees that truly needy patients receive a discount, while only 4% agrees that patients who can afford treatment are weeded out.




One respondent replied:

*"There has to be some firmness in weeding out people who can afford it. In giving discounts to these, we miss out giving more discounts to the more needy". While another stated that "in general most discounts in my department are need based, but there are patients who receive discounts outside the system which is in place, where the amount is not based on need assessment".*

When asked if outsiders such as family and donors would agree with the way the discounting process runs at TMC, only 20% agreed, and one respondent replied: "I do not think any outsider will agree with the company's discount policy". Overall, almost all participants agree that the current discounting system does not function well.

Some additional comments given:

> *"Given an opportunity mostly people will like to opt for a discount. There should be a system where we screen from the start, give correct information without keeping people in the dark regarding the present system. The gap between private and general can be bridged and a third category rate like VIP or Deluxe can be instituted."*
>
> *"The decision of one department to discount services run by other departments should be strictly capped."*
>
> *"The discounts have to be realistic based on actual socio-economic parameters."*

### Finding 2: Additional information from the social workers would be helpful

A key problem with the current discounting process is that the current checks on cheating are insufficient. One third strongly disagrees with the statement that the information on the social workers' assessment accurately represents the patient's financial state. All respondents except for 2 either agree (13) or strongly agree (7) that additional information from the social worker would be helpful, both with notes and a score.

### Finding 3: Discount caps for departments would improve discounting decisions

In the survey it was proposed to put caps on the amount of discounts departments can give as it might encourage the departments to be more careful and considerate in giving out discounts. The replies to this proposal were very polarised, with no neutral replies. A majority of 71% agreed that such a cap should be in place, while 29% disagreed. Two main criticisms were mentioned:

1) "Each department has its own requirements and hence no cap should be applicable"
2) "Decisions for discounting would be on a first come first serve basis if funds are limited"

Regarding the first statement, this is not a valid objection as caps would be based on numerous factors depending on the individual requirements of the departments, and should leave enough leeway for exceptions. However, a valid objection might be that it is impossible to determine what the requirements of departments are and therefore caps cannot be implemented. The second objection depends on the individual responsibility of the consultant, and it has to be decided by the management if consultants have sufficient time and means to make proper discounting decisions when working with caps.

Nevertheless, the majority seems to agree that they would be able to make good decisions if working under a system in which caps are implemented: 63% stated that their discounting decisions would change for the better under the cap-system.

| Would your discounting decisions change if your department was given a maximum allowance of discounts? | | | Response | % |
|---|---|---|---|---|
| 1 | Yes - For the better | | 15 | 63% |
| 2 | Yes - For the worse | | 5 | 21% |
| 3 | No | | 4 | 17% |
| | Total | | 24 | 100% |

## *2.4. Patient Interviews*

Another part of the discounting project focussed on the patients: how do they experience the discounting process, what can be learned from them? To this end, three interviews with patients were conducted. Since no interpreters were available at TMC, all interviews took place at St. Judes, a children's care centre where families that have children with cancer that cannot afford accommodation are hosted. Two social workers were present there who could do translations, and also, were an additional source of information.

Generally, all patients were very satisfied with the service and interaction with doctors and the social workers at TMC. However, patient navigation (i.e. guiding the patient in his or her journey to and in the hospital) needs improvement. The three main findings are outlined below.

### Finding 1: Patients request and receive funding too late

Patients arrive at TMC after a journey of often several months, in which they passed by multiple doctors and hospitals, being completely exhausted. “They are down, so down when they come here. They think their kid is over, that there’s no hope” (St. Jude social worker). All they want is treatment, so that is what they ask for, without thinking about or even realising the costs involved. Since there is no comprehensive information given upon arrival, patients often do not understand the discounting process in place at TMC. They register as general or even private patients, and continue paying until all resources are exhausted. The story of one of the patients, told by the St. Jude’s social worker illustrates this:

> “At one point he couldn’t afford a treatment [something had to be inserted in the stomach, cost 25000 he only had 7000 so he thought he had to discontinue his kid’s treatment.] So that is why he ended at the social worker. He told the consultant. And the doctor asked why did you not tell me? And that is how they ended up at St. Judes.”

Due to language issues, low confidence and poor understanding of what is going on, these patients, and underprivileged patients in particular, do not dare to inquire or ask questions. This is exacerbated by the fact that to them, TMC is a very threatening-looking place: modern, alien, western.
Consequently, they pay TMC's bills until not only their own, but also their family and sometimes even communities' resources are exhausted. Only then they contact the consultant. For example, one family arrived in March, sold all their assets to pay treatment, and received funding only at the end of July.

The funding arrives in time for treating the patient, but it is too late to secure the patient and his/her family's future. No funds are left for education or progress of the family as everything they own is sold in order to fund the treatment. They leave the hospital (hopefully) healthy, yet impoverished. Such a situation could have been easily avoided by a sound patient navigation system right from the start.

### Finding 2: Patients have difficulties completing the full loop of medication

Similarly, for patients and their families the long treatment cycle is exhausting. They lose hope and spirit, or if the patient's symptoms disappear, think he or she has recovered. Both strong reasons to stop the medication, especially as chemotherapy is an extremely feared treatment due to the side-effects. According to the social workers, at St. Judes, patients already found it difficult to adhere to the treatment, and there they have everyday contact with other parents, volunteers and professional help to ask questions to and who tell them to complete the full loop of medication. For the vast majority of the patients, however, such a supportive environment is not available. And consequently, completing the full loop of medication is a serious problem.

### Finding 3: Patients do not know where to go for questions

Following the same line of argument and problems, a key problem is that many patients that do have questions do not know where to go to ask them. There is not a central person or department that looks after them or can answer their questions. They do have regular contact with doctors, but especially for underprivileged patients, they are often too shy to ask questions. And even if they do, it is for doctors often difficult to communicate with patients on their level. A basic concept such as survival rate doesn't make sense to many of them.

**Key Quotes:**

*They sold the cow, the cycle, sold all their assets to pay. But now they got funding. After they got funding, only then they got to know the social worker."*

*"There should be a system where we screen from the start, give correct information without keeping people in the dark regarding the present system" - TMC consultant*

*"When they first came they did not know about the social works so they were doing everything on their own. Also paid on their own" - St. Judes Patient Interviews.*

### Recommendations

The source of all problems that have been found are basically the same: a lack of information. The main issue is to therefore identify and provide the information patients need. A central place in which this information is provided and collected such as a customer information desk would be a solution.

There, three basic actions should be performed:

A) Construct patient profile upon arrival of every patient. I.e. like the Tata Medical Center Mumbai – the social worker at St. Judes has worked there before, and said that the system there functions better. Underprivileged patients are caught from the start.
B) Keep track of the patient during the TMC-journey. I.e. if a patient does not show up for treatment, go after him or her.
C) Have a central contact-person available to answer questions of patients.

Overall, this would could not only increase the quality of service to patients that need it the most, but it will also safe the future of the patients and their families as they will not unnecessarily exhaust all their resources or drop out of the treatment-cycle.

## *2.5. Donor Interviews*

The last part of the discounting project looked into the motivation of those that provide the discounts: the donors. We visited TATA Steel, where a meeting of 3 distributors of TATA were present. The TATA steel distributors raised an enormous amount of 1.2 Crore (or $220.000), without anyone asking them to do so. In the hour-long discussion with the distributors and TATA marketing manager, we mainly focussed on (A) their motivation to do so, (B) what they want back from TMC, and (C) what future collaboration could be there.

### (A) Motivation for fundraising

The TATA distributors had various reasons for fundraising:
- TMC serves the underprivileged
- Personal Motivation: cancer incidents in the family & an investment in 'Love Karma'

- Contributes to the development of West-Bengal

### (B) In Return for donations

The donors would like to have in return for their donations quarterly reports that contain information of what their money has been spent on, as well as short stories of the patients that have been funded. In addition, for future fundraising they suggested that it would be great if a more personal interaction with patients would be possible, such as patient-visits, a personal video-documentation of the patient or an adopt-a-patient programme in which they can adopt the treatment of a particular patient.

### (C) Future collaborations

Both the TATA distributors and the TATA steel manager were very enthusiastic for future cooperation with TMC, and full of ideas of how they could contribute. Maintaining regular contact is crucial! Their core ideas are:

- Contribute to cancer awareness through their marketing campaigns. If TMC delivers the content of cancer awareness messages, the TATA distributors will integrate this in their local marketing campaigns. Examples would be small lines such as 'smoking kills' and how to self-examine for cancer. The TATA Shaktee brand (they deliver the metal plates of which many roofs are constructed) would be particularly suitable for this as they have an extensive network in the rural areas. A key problem – access to rural areas – would be solved with this.
- Provide Manpower. They have many employees and customers who would be willing to volunteer for TMC. They could arrange the transport and everything, if only TMC informs them on what kind of work and how many hours are needed.
- Raise further funds. Further in the future the distributors and TATA steel are open to raise further funds. However, they are primarily interested now in delivering volunteers and participating in a cancer awareness campaign.

### Key Points

- Maintain active contact with the people we spoke to! (for contact information, see Appendix 1)
- Make donating a more personal engagement.

## *2.6. Final note*

The discounting process is an extremely tricky issue that probably will continue to arouse emotions well into the future. However, there are opportunities for improvement, and the most important progress is likely to come from more transparency and information diffusion.

# 3. Project #2: Creating Cancer Awareness

## 3.1. Background to the study

Creating awareness of cancer is a crucial step in palliative work. Due to the burdensome socioeconomic situation of many Indians, cancer is often associated with economic loss, fear and death; and hence superstitiously becomes an issue that is not being talked about. However, the earlier cancer is detected and thus the more people talk about the disease and are aware of it, the more effective is the treatment – as they ultimately come for early treatment.

*The following quotes of an interview at St Judes, 24th of July 2012, genuinely reflect the problem*

"and even if you explain to them on a slightly scientific level it doesn't really make sense to them. They see only the outward symptoms. I think you have to take their background into consideration. Based on the symptoms you have to explain it, that is where you should start the explanation. You have to make them realise the distinction between outside symptoms and inside, how sick the child really is. That is where the explanation needs to come from. And also the fact that it is not at all contagious. That is something that many of them think that cancer is contagious."

"She had never heard of the word cancer, she didn't know anyone with cancer. It took a long time before they actually would get the diagnosis. And there were points where the doctors knew the child had cancer, but the doctors were embarrassed to tell them that the child had cancer. Only when they arrived at the hospital it was told them its cancer."

"it is bad karma. And also I guess it is such a small child. It's such a small village they wouldn't have believed it. They would think that they were making it up that such a small child would have such a disease. "

"Child, 4,5 years. He was one of the first patients to come to TMC. It opened in May and he came in August. So 2 months. That is why they got their funding immediately. He got fewer, and could not walk. Ironically, at that time he (the father) had taken his sister's son down South because he had cancer. So 2 kids in the same family. Took the kid to Bangalore for treatment. So he had basic knowledge, but she not. The husband had not told anything to the mother. No-one told the mother. It was kept a secret. Because they feel it is something to be ashamed of. "

## 3.2. Cancer Awareness at TMC

As the palliative oncology department is in the process of being planned, studies towards the creation of a cancer awareness programme and original data collection are an asset for TMC. In this context, the project "creating cancer awareness" has been identified as a TISES

project. In particular, the project has been designed in agreement with Clarissa Ton-Nu, the TISES intern from Berkeley University.

The focus in the study design was put on high school students in 11th and 12th grade. This is because these students play an increasingly influential role in their parents' lives and health behaviour, and are on the verge of adulthood. They also enter a new phase in their lives such as work or University, where they must become responsible for their own health behaviour. The proposed pilot study focuses on 11th and 12th grade high school students in order to understand their health behaviour and receive direct recommendations from the students on future outreach programmes.

This cannot be done with students only, also teachers play a role and were identified as another target group in the study. To be clear, ultimately, cancer awareness programs are not to focus on high schools only; but this study constitutes the pilot analyses.

## 3.3. Targets

Three targets were identified at the study outset:

3.3.1 To evaluate the existing awareness programs and identify awareness needs in both urban and rural population in selected areas
3.3.2. To evaluate the opportunities of creating awareness and educational programmes for young urban adults (high school and college)
3.3.3. Suggest an action plan and tools suitable for enhancing awareness in the rural population

## 3.4. Methods

The following methods were identified as constituting the research:

3.4.1. Questionnaire distribution

Overall, 290 student questionnaires consisting of 22 questions were distributed and analysed via Microsoft Excel at three schools. 124 Questionnaires consisting of 10 questions were distributed to teachers. Quantitative collection of students' as well as teachers' knowledge and perceptions of cancer symptoms, causes as well as treatment which the questions were geared at, will give a genuine and confidential insight into the existent awareness for the target groups.

3.4.2. Focusgroups

Focusgroups are a form of qualitative research in which a group of people is asked about their perceptions, opinions, beliefs, and attitudes towards a product, service, concept, advertisement, idea, or packaging. Questions are asked in an interactive group setting where participants are free to talk with other group members. In particular, objectives of the target groups were to explore young adults' attitudes and beliefs towards existing cancer awareness campaigns, to identify awareness needs and what young adults want to

see in future awareness programmes. For teachers, the focusgroups were to explore the role of teachers in influencing their students' perceptions on health, to understand how schools have been involved in cancer awareness programmes thus far, to learn about teachers' perceptions of how to make such campaigns most effective as well as to find ot how teachers can strengthen their influence on students' health behaviour.

3.4.3. Interviews with NGOs / Organisations / Donors

Interviews with NGOs / Cancer Awareness organisations in the region were planned to give us a better insight into the currently existent work and of the activities in the area. The interviews were based on an informal set up. Interviews with and (multiple) visits at the organisations 'Make a Wish', 'Kalpana Datta Foundation', 'HOPE Foundation', 'HOPE Hospital', 'St Judes', 'TATA Steel' took place throughout the two months. From these, the idea for the project here identified as number 3 evolved, "TMC to Kolkata". For further interview insights, see 4.

*In the course of the research project, interviews with Doctors were added to the methods in order to receive original feedback on how feasible the ideas put forth by students and teachers would be.*

While Clarissa Ton-Nu had created the questionnaire and initiated the first study at the Delhi Public School, Karolina and Robin together executed two further studies at Calcutta International and the United Missionary School; and also had an interview at the Life Skills Building School at HOPE Foundation. In order to set the background for the study analysis, the schools will briefly be introduced:

## *Schoolprofiles*

### *Delhi Public School*

"DPS Newtown, under the aegis of the DPS society is a state-of-the-art modern school, the only DPS situated in the heart of Newtown. Spread over a sprawling 12-acre plush campus, the school is equipped with the best of amenities, giving the students ample opportunities to manifest their talents.

Since its inception on 25th April 2005, the school has striven to provide a holistic education experience that ensures high standards of academic excellence complemented by a kaleidoscope of co-curricular activities. The focus is on nurturing well-rounded personalities with the skills to excel in the world they will inherit in time."[2]

The fixed fees of 25,000 Rs (Admission Charges), 25,000 Rs (Building Fund), 10,000 Rs (Security Deposit - Refundable) are added by 3.150 Rs education fee, 1.000 Rs lab charge as wel as 1.800 Rs transportation charge.

[2] http://www.dpsnewtownkolkata.com/about-us/about-school/index.html

## *Calcutta International School*

"CIS is a well-established, reputed, co-educational, international school situated at Kolkata serving both local and expatriate communities.

CIS prides itself on its warmth and welcoming nature; cosmopolitan culture; open attitude towards students, teachers and parents; safe & secure environment; well trained teachers; modern infrastructure; small class strengths; low student - teacher ratio and global curriculum.

CIS believes that the primary purpose of a school is to guide the child in the discovery of themselves and their world.... to identify and nurture their talents. Just as every seed contains the future tree, each child is born with infinite potential. CIS sees children as seeds to be nurtured - here the teacher is a gardener who helps to bring out the potential already present in the child. CIS is the best possible environment for children to grow, to blossom and to evolve."[3]

The school fees amount to 50,000 Rs per quarter.

## *United Missionary School, Bhawanipur*

United Missionary School does not have internet presence. The school facilities are orderly, all the teachers well educated, from a qualitative point of view. The school's fees are marginal. While there are differences to DPS and CIS, (which will also become clear under "findings"), the girls we spoke to during the focus group interviews are well educated, socially as well as academically, and their level of English language is more than satisfactory in international comparison.

## *Hope Foundation[4] (Life Skills Building[5])*

In 2008, the organisation set up a 'Life Skill Training Institute' in order to improve the economic conditions faced by the adolescents and adults in Calcutta, through education and vocational training.

The Life Skills building has four departments: Food and beverage, Vocational training, Computer education, Spoken English. Each of these departments has been fully equipped as part of the initial set-up of the building. Both the restaurant and vocational training unit cater for below the poverty line women, through culinary and service training and tailoring and craft services respectively. The education department conducts courses on computers and spoken English to improve the academic performances of adolescents.

The specific focuses of this project includes: Providing professional training, Ensuring minimal drop outs, Altering the course to suit current market needs, Focusing on

[3] http://www.calcuttais.edu.in/calcutta-international-school/about-cis
[4] http://www.hopefoundation.ie/
[5] http://www.hopechild.org/Projects/vocational.aspx

placements of students. The wider objectives of this project are to improve the economic situation of below poverty line populations; and to transform the restaurant into a sustainable enterprise.

As becomes clear, the first target (3.3.1.) "to evaluate existing awareness programmes and identify awareness needs in both urban and rural population in selected areas" has yet to be fulfilled. Due to time constraints, it was only possible to visit urban, somewhat socio-economic upper, schools (excluding the HOPE Life Skills Building, as there was no study conducted because of language issues; from the focus groups already however, qualitative differences in the awareness of cancer became apparent).

## *Some impressions…*

**Image 1 Questionnaire Distribution at UMS**

**Image 2 Questionnaire Distribution at CIS**

**Image 3 Questionnaire Distribution DPS**

**Image 4 Student Focus Group at UMS**

**Image 5 Baking Classes at HOPE Life Skills Building**

## 3.5. Findings[6]

From the sample size of 290 collected student questionnaires, 124 collected teacher questionnaires, 6 focusgroups (2 at DPS, 2 at CIS, 1 at UMS, 1 at HOPE) with students, and 4 focusgroups (2 at DPS, 1 at CIS, 1 at US) with teachers, the following findings can be drawn:

### *Teachers*

- While all of the teachers at all three schools were very welcoming towards cancer awareness programs and very proactive in supporting us throughout the survey process, they made clear that they themselves lack the knowledge to sufficiently educate the students on cancer ("I'm telling you from my side, we also lack a lot of awareness", teacher CIS). Instead, they said that "Doctors are the right people to convey the message". "It will not have a profound impact on them. Instead, doctors should speak to them."

- Moreover, the teachers made clear that they are very limited in time to dedicate their lessons to cancer awareness programmes. "There is no scope in their curriculum for cancer awareness" (Teacher, UMS). Therefore, cancer awareness programmes would have to be some kind of extra curricula activity.

### *Students*

- Students at all schools were interested in learning about the connection between symptoms, causes, types of cancer and treatment. We have been asked the following questions for instance: "How come people lose their hair?", "Why have scientists found the treatment for all diseases but not for cancer? Why?" Girls at UMS)

- At all schools, the cancer awareness of students can be described as satisfactory. The students were aware that smoking causes lung cancer for instance. Especially at CIS and DPS the students were very well educated.

### *Combined Findings*

- DIFFERENCES BETWEEN SCHOOLS

As expected, when compared there are considerable differences between CIS and DPS and the UMS school with regards to the students' cancer awareness. While at CIS only 26% of the students were "not sure" whether cancer can be prevented, it was 48% at UMS. Similarly, while 11% at CIS were "not sure" whether cancer can be cured, this number amounts to 39% at UMS. This difference in awareness became also apparent in the interviews conducted at HOPE foundation, where we were asked whether one gets cancer from "eating with someone who has cancer".

[6] For major findings displayed in tables see Appendix 2.

- ALL SCHOOLS did not have an organised cancer awareness programme and would welcome such programmes.

- TEACHERS perceive of their influence on students correctly. A teacher at DPS in this regard noted that "if what we preach is not practiced by us, it does not work". Some of the teachers are in fact role models for the students and thus have or would have an influence on the students' health behaviour. "Yes, some of them are role models" (Student, DPS). Students at CIS as well as UMS agreed.

## 3.6. Recommendations

Recommendation 1. *If campaigns/programmes then…*

Talks with doctors as well as patients should be organised. This is what everyone considered most effective. As a teacher at UMS noted correctly, "recordings are taken for granted." At UMS for instance, three years ago, one talk had been organised and "the students had so many questions" (Teachers at UMS).

Furthermore, visits to TMC would be interesting for students. Every student expressed interest in going out to TMC.

If there are educational programs organised at schools, these need to be targeted at schools. For instance, since UMS is a girls' school, the girls would need education on their female development. In the focus group namely it became apparent that the girls were not aware of the female body.

Also, such programmes would have to take place on a regular basis and can by no means be reduced to a one time activity - "Do it or don't do it" (Dr at TMC).

Recommendation 2. *Set the Targets*

The first step of a pilot study at urban schools is taken, now the target must be RURAL SCHOOLS. As manifested in the differences between CIS and UMS already, there are differences between socioeconomic different schools. It shall be suggested that these differences are even bigger with regards to rural schools.

Interestingly, a doctor at TMC noted "there is no such thing like cancer awareness", but "the most important thing is to stop the association that people have of cancer and pain" (Dr at TMC). In this sense, it is recommended to set the target of what a campaign shall achieve such as stopping the association with pain, educating on specific types of cancer (breast cancer, lung cancer), educating on healthy habits, educating on symptoms, wanting to make people to go for screening. A campaign can then be designed according to the identified targets.

Recommendation 3. *Resources*

First of all, TMC can make use of the resources that are already in place, such as the networks of organisations and TATA Steel (see project 3). The available resources also have to be allocated with regards to importance. This means that resources, including finances, time and manpower, should be used to - if at all target schools - target rural, underprivileged schools, rather than elite schools in the region where the students' awareness of health in general is high level.

## 3.7. Blood Donor Research

### 3.7.1. Background

In line with the cancer awareness project, the Blood Donor Research has been designed to understand the TMC Blood Donors' cancer awareness. Over a period of three weeks, 300 questionnaires have been distributed. This sample size of 300 blood donors results in the following preliminary findings:

### 3.7.2. Preliminary Findings

**Socioeconomic Background of Respondents**

| | |
|---|---|
| **Nationality** | |
| Indian | 290 |
| Other | 7 |
| **Gender** | |
| Male | 283 |
| Female | 17 |
| **Marital Status** | |
| Married | 162 |
| Single | 133 |
| Widowed | 2 |
| **Marital Status** | |
| Married | 162 |
| Single | 133 |
| Widowed | 2 |
| **Education** | |
| Illiterate | 4 |
| Highschool | 50 |
| Undergraduate | 41 |
| Graduate | 141 |
| Postgraduate | 51 |
| **Income** | |
| <5.000 | 53 |
| 5.001 – 10.000 | 34 |
| 10.001 – 25.000 | 56 |

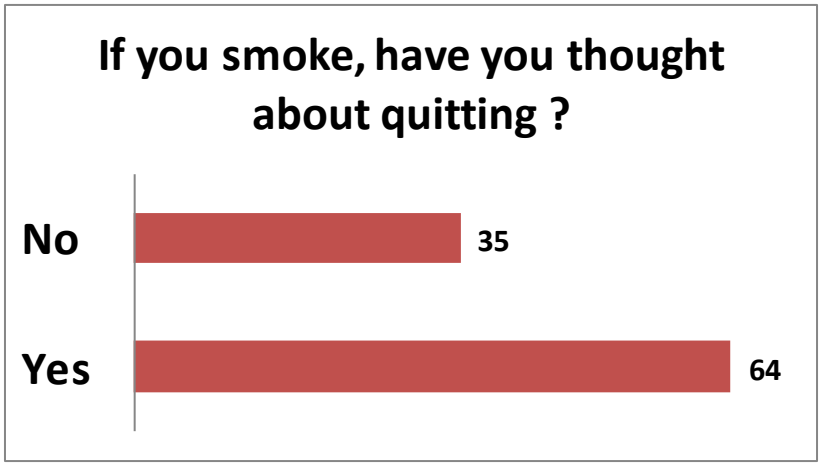
| | |
|---|---|
| 25.001 – 50.000 | 60 |
| 50.001 – 100.000 | 21 |
| >100.000 | 17 |
| **Profession** | |
| Unemployed | 11 |
| Business | 68 |
| Student | 39 |
| Professional | 36 |
| Service | 122 |
| Agriculture | 0 |
| Uniform Bodies | 0 |
| Retired | 2 |
| Other | 8 |
| **Area** | |
| Urban | 173 |
| Rural | 45 |
| Semiurban | 48 |
| **Number of Family Members** | |
| 1 | 4 |
| 2 | 22 |
| 3 | 70 |
| 4 | 86 |
| 5 | 54 |
| 6 | 17 |
| 7 | 7 |
| 8 | 13 |
| 9 | 6 |
| 10 | 4 |
| 11 | 1 |
| 12 | 2 |
| 13 | 1 |
| **Age** | |
| <18 | 1 |
| 19-25 | 59 |
| 26-30 | 42 |
| 31-35 | 27 |
| 36-40 | 27 |
| 41-45 | 15 |
| 46-50 | 10 |
| 51-55 | 6 |
| 56-60 | 1 |

| | |
|---|---|
| 61-65 | 0 |
| >66 | 14 |

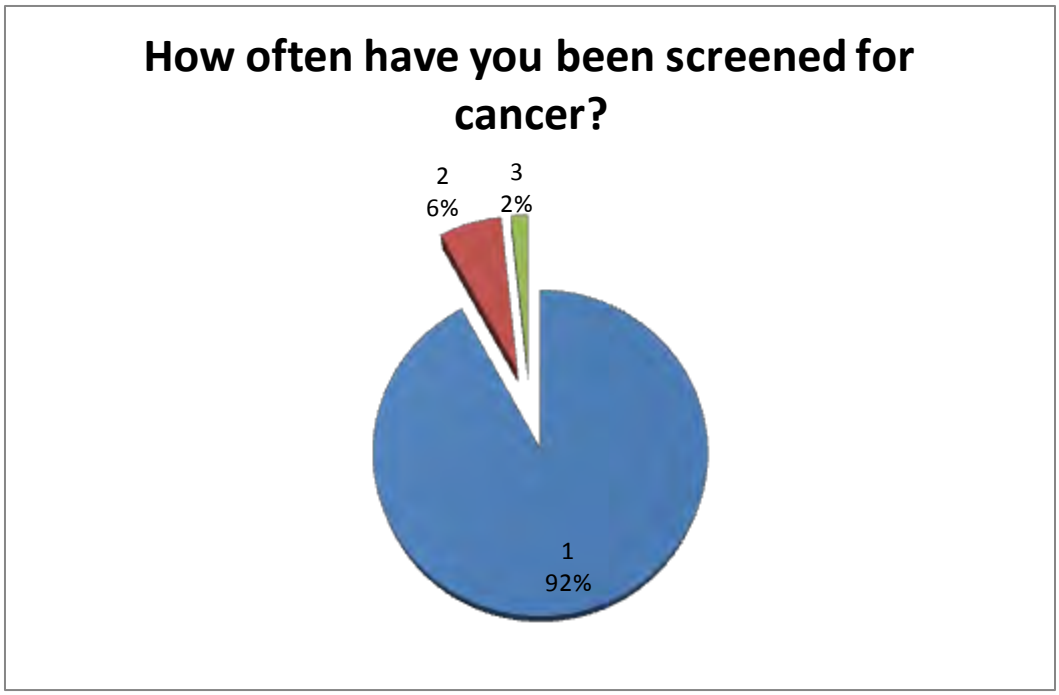
**Perceived Cancer Awareness of Respondents**

| | |
|---|---|
| **Knowledge of cancer today** | |
| No knowledge | 58 |
| Some knowledge | 207 |
| Well informed | 25 |
| **Do you believe cancer can be cured?** | |
| Yes | 186 |
| No | 20 |
| Not sure | 87 |
| **Do you believe cancer can be prevented?** | |
| Yes | 164 |
| No | 32 |
| Not sure | 94 |
| **Do you believe cancer is contagious?** | |
| Yes | 25 |
| No | 179 |
| Not sure | 78 |
| **Would you like to learn more about cancer?** | |
| Yes | 207 |
| No | 35 |
| Somewhat | 56 |
| **Do you know that smoking and chewing tobacco increases the risk of getting cancer?** | |
| Yes | 243 |
| No | 10 |

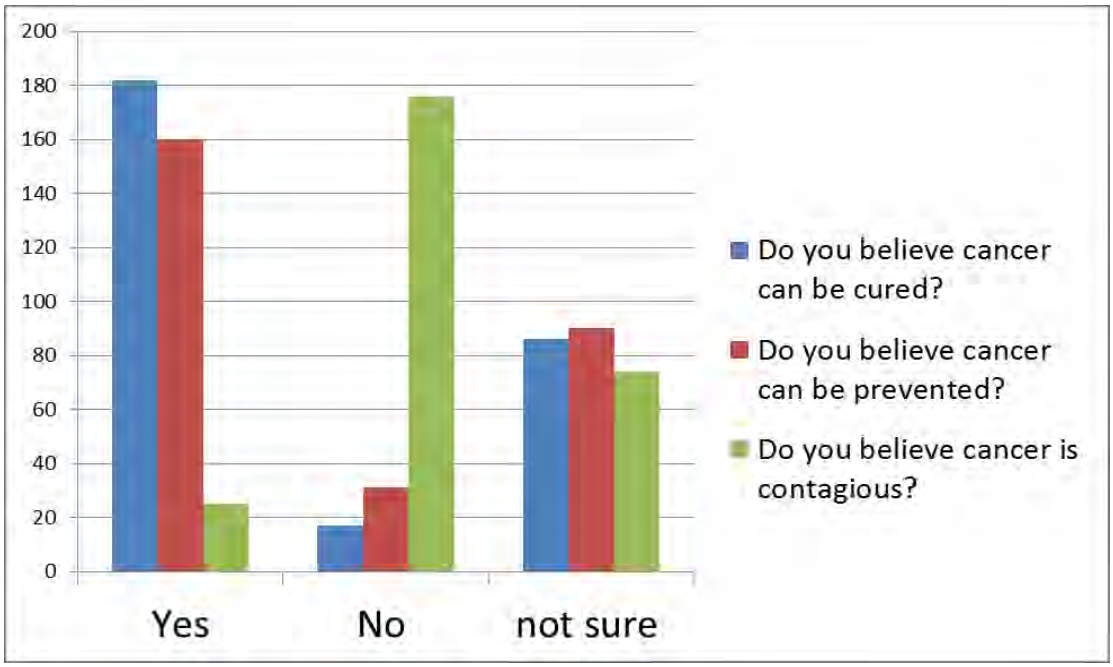
### 3.7.3. Striking Findings thus far



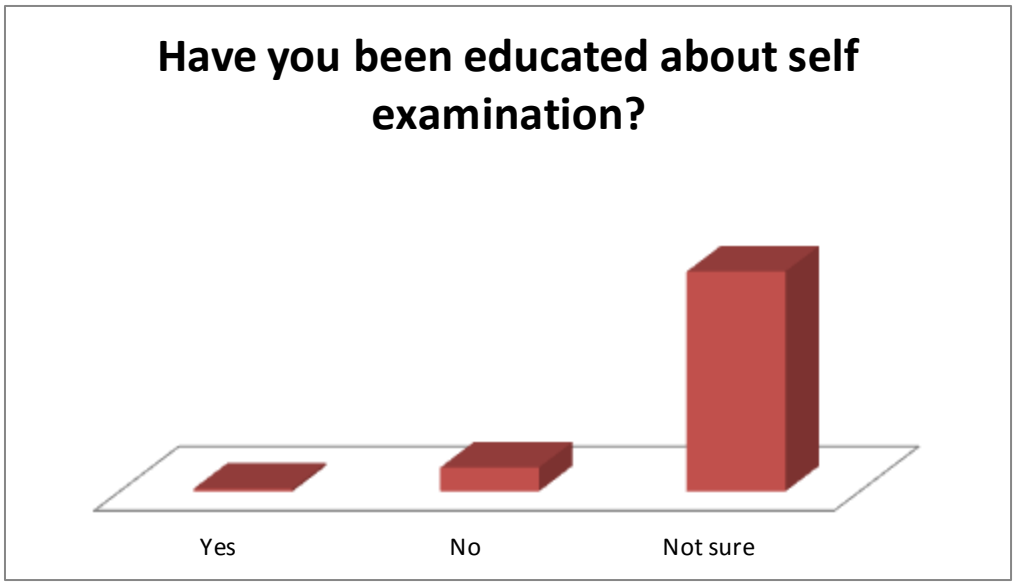

➔ About one third of the smoking blood donors state that they did not think about quitting smoking. There is thus scope for an anti smoking campaign.



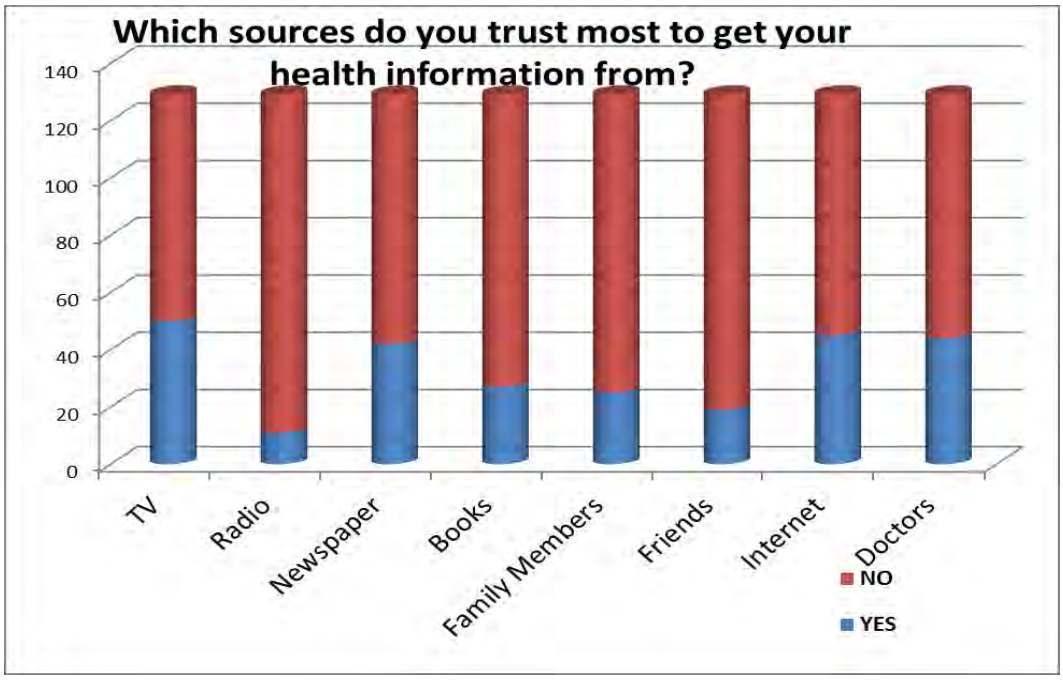

➔ This findings points to the necessity of screening facilities.




➔ A considerable number of respondents is "not sure" about these questions. There is thus definitely scope for cancer education.




➔ Strikingly, the majority of respondents is "not sure" whether they have been screened for cancer or not. This could thus be a 'target' of a cancer awarness program - to educate on self examination.




➔ Overall, blood donors trust the TV more than Doctors. This is crucial to know for a cancer awareness programme and should be investigated further.

*The next step* now is to transfer the collected data into the SPSS system and to establish correlations between the blood donors' cancer knowledge and awareness and e.g. their socioeconomic background or relation to a patient.

# 4. Project #3: TMC-to-Kolkata

During our trips to organisations across Kolkata and our interviews and informal talks with TMC staff we discovered three things: 1) TMC is very isolated from Kolkata; 2) there are amazing NGOs, businesses and organiations present that have a lot to offer for TMC and cancer awareness and treatment; and 3) if TMC targets the isolation problem by connecting with Kolkata's networks, there is a great opportunity for TMC to become the spider in the web of Kolkata's cancer-network.

## *4.1. The Problem: Social & Geographical Isolation*

Time and again, during our visits we found that Tata Medical Center is not only geographically out of Kolkata, but also socially. There is a range of organizations, businesses and people in Kolkata that have abundant resources, cancer expertise and access to networks of which TMC could make great use, but as of now, TMC seems to be rather isolated.

This social isolation seems to have three causes:

1) *Geographical distance*. TMC is very difficult to reach, and especially for underprivileged patient, a single trip to the hospital can be more than they can afford
2) *Lack of (use of) local connections.* The face of TMC, Trishna Dey, is grounded in the local networks and with her US background has great access to the upper circles of Kolkata, but the middle-and lower classes are left out until now. Consultants are flown in from all over India – and mostly even from all over the world – and have therefore difficulties connecting to the local network.
3) *Patients are afraid of TMC*. A hospital is not a place people like to go to in the first place, and worse yet, to the underprivileged (and probably even middle-class patients), TMC is a very inaccessible, almost threatening place. The modern, western and therefore very expensive and alien-looking building is not a very welcoming place for people that have lived all their lives in a small shack or lower-class Kolkata or rural areas. According to the participants of the Hope focus group discussion: "everybody is scared to go to the TATA hospital" and "TATA is a highly privileged hospital".

## *4.2. The Solution: Connect to Key NGOs, Organisations and Businesses*

During our trips across Kolkata we found great organisations that could connect TMC to Kolkata. Moreover, they have expertise, networks and resources in exactly the areas that TMC lacks. Connecting to a couple of these organisations will connect TMC to Kolkata without much effort. Also, instead of re-inventing the wheel, e.g. creating a cancer awareness campaign, setting up education networks, TMC only needs to bring their expertise to organisations that have done this for years and already have these networks. Below we describe some core type of organisations and their opportunities.

### NGOs

In Kolkata many non-governmental organisations have been active for decades, creating extensive networks across the city and societal levels. If TMC connects to even a couple of them, it could get access to a great network that would be mutual beneficial. Organisations such as HOPE foundation have social workers active in the slums and other underprivileged

areas. They have a small hospital that has incidentally cancer patients. What they could offer:

For Cancer-Patients

- Identify truly needy patients. HOPE has a small hospital in which they treat underprivileged patients they pick up with their ambulance service and who are sent through the secondary health facilities and social workers they have in place across Kolkata. They can therefore identify patients that need cancer treatment but truly cannot afford it, which bypasses the need for going through the discounting process at TMC
- Bring and pick-up patients to and from TMC
- Provide after-care and check-ups. HOPE knows their communities. Any patient that has received care is always regularly checked upon by their respective social workers. If patients have been treated at TMC, HOPE will check upon the patients, which ensures treatment compliance and good patient outcomes.

For Cancer-Awareness

- Access to an extensive underprivileged network in which educational health-facilities are already in place. HOPE's social workers reach out regularly to Kolkata's underprivileged communities by giving health clinics and workshops. All TMC needs to do is train the 20-30 social workers on cancer-issues, possibly provide some materials, and many people can be easily reached.

## Businesses

Corporations operating in Kolkata or West-Bengal at large have beyond the obvious financial potential, many benefits to offer. If TMC really aims to reach out to a large part of the WB population, businesses are the first in the network to target.
Businesses have:
- Extensive networks and regular contacts with customers, suppliers and other stakeholders across Kolkata, and, most importantly, the for TMC unreachable rural areas
- Large resources, both in terms of money and expertise
In our talks with the TATA distributors and TATA steel, it seems that businesses are quite interested in working together with TMC; and that they could offer – beyond a simple donation - the following:

- Fundraising among employees & customers
- Incorporate cancer-awareness messages in their marketing campaigns
- Manpower (e.g. volunteers) & expertise (e.g. advise on how to access certain networks/groups)

However, as we only spoke with three distributors and one manager - all from TATA - we are not sure these are generalisable findings. Further research is necessary to identify the potential of cooperation with businesses and how exactly to go about it.

## Cancer Foundation India[7]

Cancer Foundation of India (CFI), based in Kolkata, is a voluntary organisation dedicated to cancer prevention and control in India. At CFI a team of highly motivated professionals have been actively engaged in cancer control activities since 2002. Through the activities of the organisation they try to bridge the gap that exists in cancer public health, education, training and human resource development, population research and cancer survivor issues in the country. The Cancer Foundation of India (CFI) is registered under West Bengal Societies Registration Act XXVI of 1961. It is also registered with the Ministry of Home Affairs (MHA), Govt. of India under Foreign Contribution (Regulation) Act, 1976 to receive grants / donations from overseas. It is also a beneficiary of tax exemption for receiving donations under the provisions of 80 G of Indian Income Tax Act 1961. In April 2009, the CFI received recognition as a Scientific and Industrial Research Organisation (SIRO), by DSIR, Ministry of Science & Technology, Govt. of India for R&D work in cancer.

During an interview with Miss Biswas, the head of the small NGO with yet clear objectives, we experienced a very dedicated woman. During the interview which took over an hour, (and could have lasted even longer), quotes such as "I want the city to know that we see breast cancer detected early", and "I know it will work", exemplified her dedication and proactiveness in leading the organisation. She was clear, "what we have in us, is the expertise to work on cancer, it is not just TMC, it is everyone".

## TMC

As we found during our conversation with Dr Samiran Mullick of the HOPE hospital, as well as Miss Jenny Browne from HOPE foundation and Miss Biswas of CIF, TMC is not necessarily known in Kolkata. And if it was, "people are scared to go there" as Dr Mullick pointed out. In fact, the state of the art hospital may present an unreachable service to people, in particular from rural areas, if they at all heard about it. Even a bus drive to TMC, which is definitely not well accessible via public transportation as it is located 1 hour from the city center, may not be payable. This may in fact outwardly convey the impression of "though I have a hospital I do not want you to come here" (Miss Biswas, CIF) – some kind of pseudo social service.

In fact, "what TATA started in Bombay is not practical for Kolkata" (Miss Biswas, CIF). Therefore, TMC should be aware of what they want. We also heard from Doctors at TMC themselves that TMC may be some kind of TATA "hobby", to do "something social". During the interview at CIF, we witnessed clear messages: "If you want to promote the hospital, I am out of it" (Interview, CIF). In short, many seem to have the impression that TMC is a profit-oriented hospital that does not genuinely care about the underprivileged or its social causes, which presents a big hindrance in accomplishing TMC's goals. Here, there are clearly *opportunities for improvement…*

[7] http://www.cancerfoundationofindia.org/

## *4.3. The Opportunity: TMC as the Spider in Kolkata's Cancer-Network*

As becomes clear from the above, TMC does not yet have specialists on cancer awareness, while organisations need the resources that TMC has. In short, there are great opportunities here…

### The Missing link: Screening Facilities

During our interviews, informal conversations and visits at several organisations, we realised that there is a missing link between TMC and Kolkata. This link however, can be established by incorporating the organisations' knowledge and facilities into TMC work. This means to systematically communicate with the above organisations (as a start, but of course communication shall not be limited to the above organisations, but they may know others, or work already together with other organisations, TMC can benefit from the already existent networks).

In particular, one missing link is crucial: **Screening Facilities**. In Kolkata, there is no central, well accessible, affordable and well promoted centre for screening facilities existent. Yet, also with regards to the anticipated cancer awareness campaign, it is essential to first have an infrastructure[8] in terms of sufficient cancer screening facilities in place. To provide screening facilities, "that will help all of us". "If TMC doesn't do it for us, then someone else will do it" (interview; CIF).

Surely, finances play an important role in establishing a link. Organisations such as CIF and HOPE simply do not have the money to provide such screening facilities but know of their utmost importance. TMC cannot expect such organisations to pay for promotion or education material for instance. "When they ask for something, we would like them to pay for it" (Interview CIF). But "if they seek the money and outsource it for us, we can make it for them" (Interview CIF).

[8] This infrastructure also includes to provide more beds, which are currently planned with the second building.

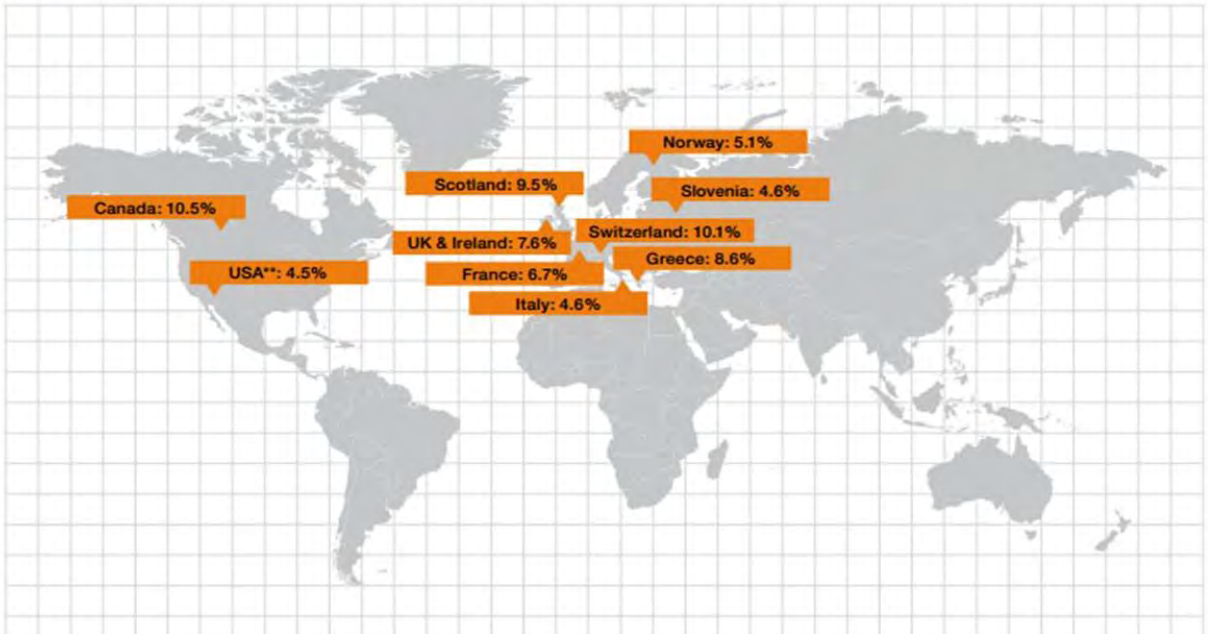
# 5. Project #4: Hand-Hygiene Research

## *5.1. Executive summary*

Hand-hygiene practices remain a salient issue across the world, and developing countries in particular. Poor hand-hygiene is the primary cause of health-care related infections. Infections prolong hospital stays, increase costs of treatment and increase the risk of adverse outcomes for the patient. Especially in developing countries where adherence to hygiene is generally lower, infection rates are higher and resources are limited, increasing hand-hygiene practices is of critical importance[9]. According to the current global hand-hygiene awareness campaign, 'clean hands safe lives'. All we need to do is clean hands. Simple? The WHO comments: "A simple action, perhaps, but the lack of compliance among health care providers is problematic world-wide". (WHO hand-hygiene report, 2009).

Health-care related infections, of which unclean hands are the primary cause, are common world-wide. In 'developed' countries, a little less than 1 out of 10 patients will obtain an infection. Data in developing countries is lacking, but at Tata Medical Center, a newly-established Indian world-class cancer hospital, the nurses and consultants estimated this rate to be 47% and 23%, respectively - a worrying high number.

Figure I.1
Prevalence of HCAI in developed countries*




A research was carried out in order to investigate hand-hygiene practices at this hospital. Despite knowledgeable doctors and high resources of hospital – e.g. hand-rub available at all points of care, gloves freely available – the hospitals hand-hygiene compliance is poor. Out of the 308 opportunities of hand-hygiene observed (over 22 sessions and 470 minutes of observation), 58% of

[9] Infection control as a major World Health Organization priority for developing countries
Pitteta, B. Allegranzib, J. Storrb, S. Bagheri Nejadb, G. Dziekanb, A. Leotsakosb, L. Donaldsonb.

all opportunities were missed, in 28% of the cases the hand-cleaning was poorly done and only 14% of the hand-washing opportunities were done properly. Moreover, 90.5% of the consultants were wearing rings (often multiple, and mostly large ones with stones), stethoscopes, bracelets and other infection carriers during their ward rounds. These findings are believed to go hand-in-hand with high infection rates.

Critically, there exists a large gap between perceived and actual compliance (which has been found before across the world). Perceived compliance is extremely high: between 80-90% for both consultants and nurses, and the majority of respondents replied that hand-hygiene is a priority in the hospital. However, actual compliance is 42%, and the survey results show that hand-hygiene knowledge is relatively poor. In conclusion, hand-hygiene practices in Tata Medical Center need improvement, and interventions are highly desirable.

## *5.2. Results Hand-hygiene practices at TMC*

### Background

Hand-hygiene practices remain a salient issue across the world, and developing countries in particular. Poor hand-hygiene is the primary cause of health-care related infections. Infections prolong hospital stays, increase costs of treatment and increase the risk of adverse outcomes for the patient. Especially in developing countries were adherence to hygiene is generally lower, infection rates are higher and resources are limited, increasing hand-hygiene practices is of critical importance[10]. Yet research into hand-hygiene practices and attitudes towards hand-hygiene in developing countries, as well as newly established institutions, is scarce. The study reported here is the result of the baseline survey of a planned longitudinal research.

### Purpose

The purpose of the current research was to investigate current hand-hygiene practices in one 167 bed cancer-hospital in a developing country, India. The hospital was established March 2011, with world-class consultants and materials and has access to many resources, yet hand-hygiene practices appeared from some initial assessment to be poor. The aim of this research was to investigate hand-hygiene practices, attitudes and knowledge in order to design interventions for improvement, as well as to contribute to the limited literature on hand-hygiene practices in developing countries and newly established institutions.

### Method

The present study is the result of the baseline survey. Various interventions will be designed and implemented, and the impact measured in a post-intervention survey. The baseline survey consisted of three parts, conducted at the ICU, HDU, surgical bays and general wards: 1) 470 minutes of observations of hand-hygiene compliance (5 opportunities for hand-hygiene, quality of hand-cleaning) and practices (prevalence of infection-carriers such as rings and bracelets among staff); 2) hand-liquid bottle consumption and movement; and 3) knowledge and attitude survey among 35 nurses and 34 consultants.

[10] Infection control as a major World Health Organization priority for developing countries
Pitteta, B. Allegranzib, J. Storrb, S. Bagheri Nejadb, G. Dziekanb, A. Leotsakosb, L. Donaldsonb.

## Results

A large gap between perceived and actual hand-hygiene compliance and knowledge was found[11]. Nurses and doctors claimed hand-hygiene compliance to be respectively 88% and 85%, and for the hospital as a whole 86% and 65%, while *actual* compliance was 47% for nurses and 51% for doctors. Housekeeping and relatives with compliance rates of 18% and 21% respectively performed the worse. Moreover, although respondents recognised the importance of hand-hygiene in preventing infections and claimed that the hospital has hand-hygiene as a priority (both scored 3.5 out of 4), the observation results and questions on basic hand-hygiene knowledge in which nurses and consultants scored low (respectively 32% and 36% wrong answers), showed that there is in fact a relatively poor understanding of hand-hygiene. The opportunities of hand-hygiene that are most frequently missed are before and after the patient and the patient surroundings. Also, nurses and consultants estimated that on average 47% (nurses) and 23% (consultants) of the patients will get a HCAI during their stay at the hospital.

## Conclusions

Despite knowledgeable doctors and high resources of hospital – e.g. hand-rub available at all points of care, gloves freely available – the hospitals hand-hygiene compliance is poor. This goes hand-in-hand with high infection rates. Critically, there is a large gap between perceived and actual compliance. While staff estimates compliance to be around 90%, actual compliance is 42% and knowledge of hand-hygiene is relatively poor. These findings show that cross-validation of research in hand-hygiene is extremely important.

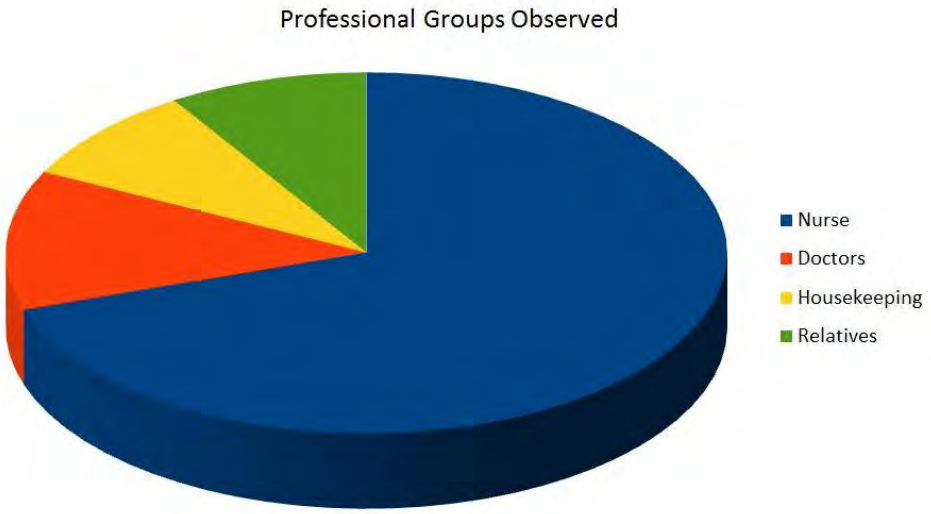
## *5.3. Results Observations*

One of the major parts of the hand-hygiene baseline was the observations of hand-hygiene practices. Observations are recognised to be the best method to assess hand-hygiene practices, despite the fact that it is an intervention in and by itself. We indeed saw that staff was highly aware of our presence and went an extra mile to do well. However, as we will see, it might have made the number higher than it is in reality, but it is still very low.

[11] A finding common in both developed and developing countries: Am J Infect Control. 2001 Dec; 29(6):352-60. Understanding adherence to hand hygiene recommendations: the theory of planned behavior. O'Boyle CA, Henly SJ, Larson E.

### 5.3.1. Descriptive data

| Summary Data: | | |
|---|---|---|
| **Observations** | | **Surveys** |
| Opportunity observations: | 231 | |
| Sessions: | 22 | |
| Average Time per session: | 22,4 | |
| Total Minutes of observation: | 470 | 69 Surveys |
| % Nurses / Consultants / Housekeeping/ Relatives | 70% / 13% / 9% / 9% | 35 nurses<br>34 consultants |
| Location of observation: | | |
| | General Ward | 8 |
| | ICU | 6 |
| | HDU | 5 |
| | Surgical Bay | 3 |

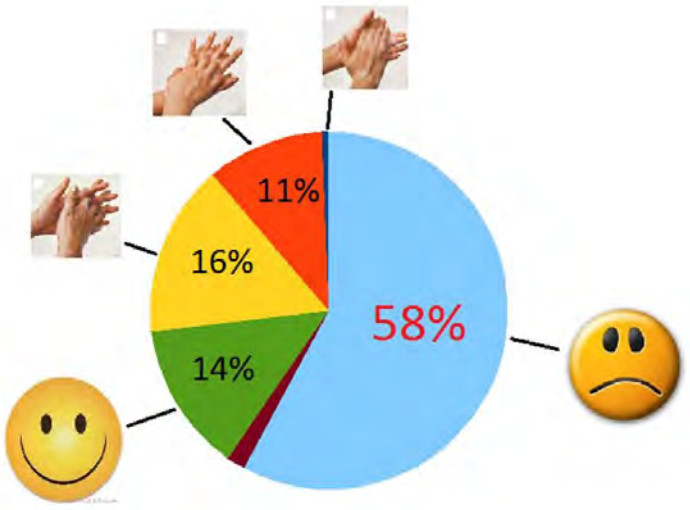


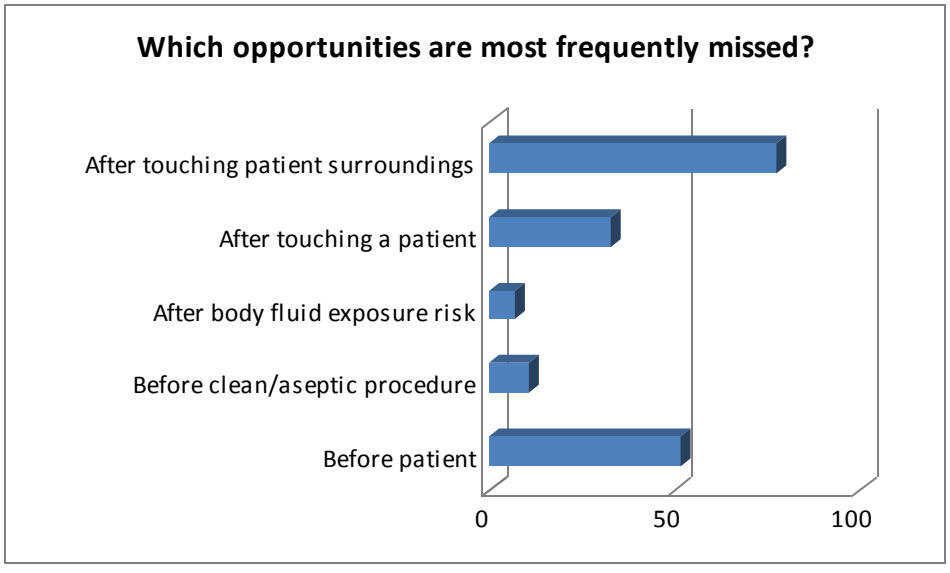

### 5.3.2. Hand-Hygiene compliance

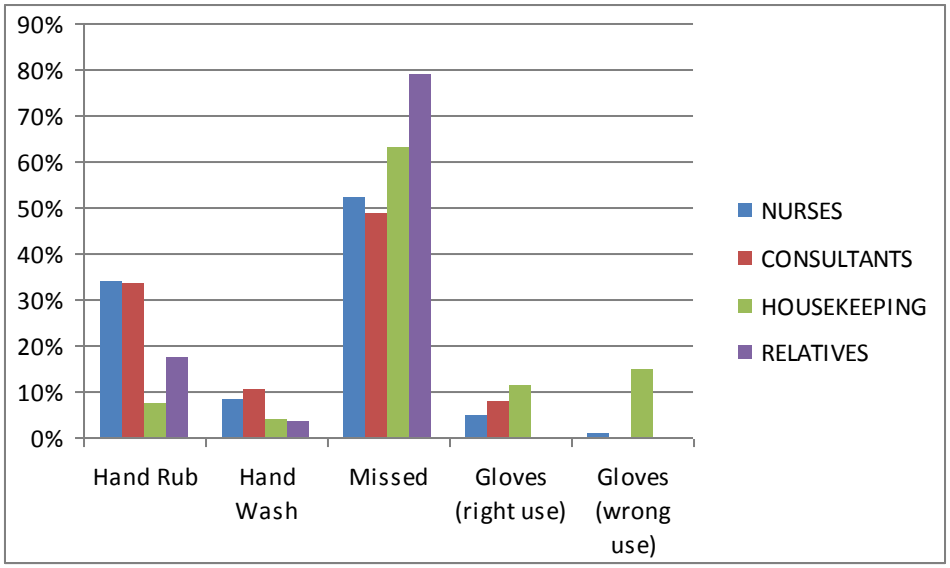
Hand-hygiene compliance is generally poor at TMC. Only in 14% of the moments that need hand-hygiene, proper hand-cleaning is performed. In 58% of the cases no hand-cleaning takes place. In 28% of the cases, hand-cleaning is performed, but poorly: in 16% of the

cases the wrists are missed, and in 11% of the cases both the wrists and in between the fingers are missed.

In reality, these numbers are probably far worse as most staff were highly aware of our presence in observing, and attempted to have perfect hand-hygiene practices. Our observations were therefore probably strongly biased, finding hand-hygiene compliance far better than reality.






### 5.3.3. Infection carriers prevalence

Previous research has shown that wearing rings, watches, bracelets and stethoscopes during patient care increases the risk of infection, especially with rings[12]. No research has been conducted on wearing Indian rings yet, but it seems likely that these pose an even larger risk due to their large size and protruding elements. Therefore, the wear of jewellery in hospitals is generally strictly prohibited. At TMC, the nurses generally comply with these guidelines and do not wear jewellery (although in some cases we did find it). Consultants on the other hand seem to pose a risk. In sessions 10-21 (we only started documenting infection carriers systematically after session 9), out of the 43 observed doctors that did their patient visits and ward rounds, only 4 were without any infection carriers. That means that 91% of the doctors increase risk of spreading infections throughout the hospital.

| | | | |
|---|---|---|---|
| Session 10-21: | 43 doctors observed | 4 | without infection carriers |
| | | 32 | rings |
| | | 24 | watches |
| | | 13 | bracelets |

Research has shown that a small engagement ring already increases infections, let alone 3 rings per hand (this is not uncommon at TMC!).

Conclusion: Wearing rings **should be forbidden**!

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[12] http://www.inicc.org/guias/GuidelinesHandHygieneIrishHealthcareSettings.pdf
Trick WE, Vernon MO, Hayes RA, Nathan C, Rice TW Peterson BJ., Segreti J., Welbei SF., Solomon SL., Weinstein RA. Impact of ring wearing on hand contamination and comparison of hand hygiene agents in a hospital. Clinical Infectious Diseases 2003; 36: 1383-1390
Hoffman PN., Cooke EM., McCarville MR., Emmerson AM.. Microorganisms isolated from skin under wedding rings worn by hospital staff. British Medical Journal 1985; 290:206-7
Sailsbury DM., Hutfilz P., Treen LM., Bollin GE., Gautam S. The effect of rings on microbial load of health care workers hands, American Journal of Infection Control 1997; 25:899-901

## *5.4. Results Measurements*

Two conclusions:
1) we cannot draw valid conclusions
2) tentative findings:
- <1cm use per 2 days
- bottles move around irrespectively of patients
- bottles are refilled

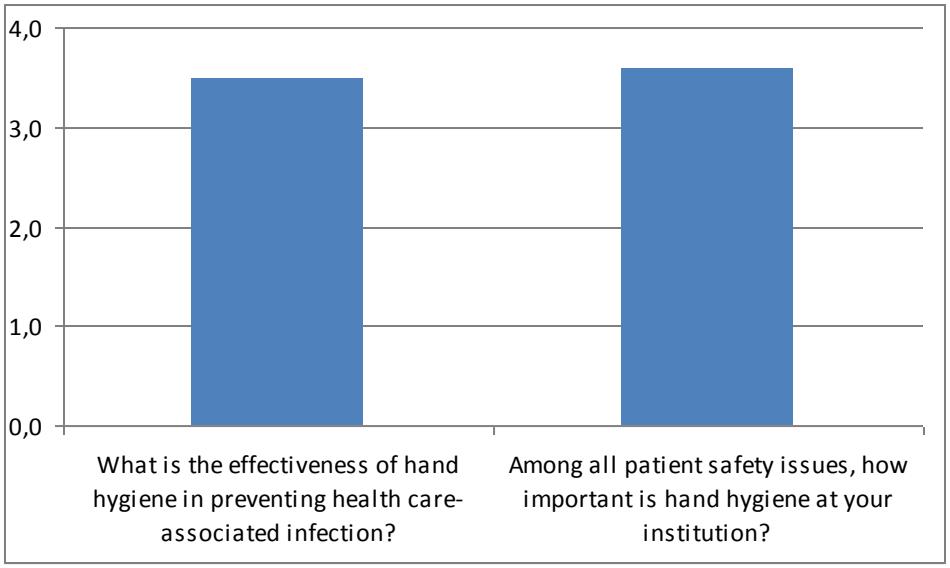
## *5.5. Results Knowledge and Attitude towards hand-hygiene survey*

### Summary

Besides the observations and hand-liquid measurements, the third and last part of the baseline survey consisted of a survey among nurses and consultants. The survey consisted of two parts, an attitudes part that measured the attitudes towards hand-hygiene, and a knowledge part that asked some basic questions on hand-hygiene. The attitudes part of the survey was based on a standard survey of WHO (to be found at the website of the WHO) and the knowledge part were questions obtained from a survey by the institute for healthcare improvement (which can be found in the Monograph 'measuring hand hygiene adherence: overcoming the challenges, by the joint commission, 2009). Overall, 69 surveys were filled out, of which 35 were answered by nurses and 34 by consultants. The core conclusion from these surveys is that there is a large disparity between the actual and perceived hand-hygiene practices. The survey results demonstrated that the knowledge and prioritization of hand cleaning is perceived to be very high at TMC, while the actual compliance (as shown by observations and liquid measurements) and knowledge (as shown by the low scores in part 2 of the survey) is very low.

### Survey results part I: Attitudes

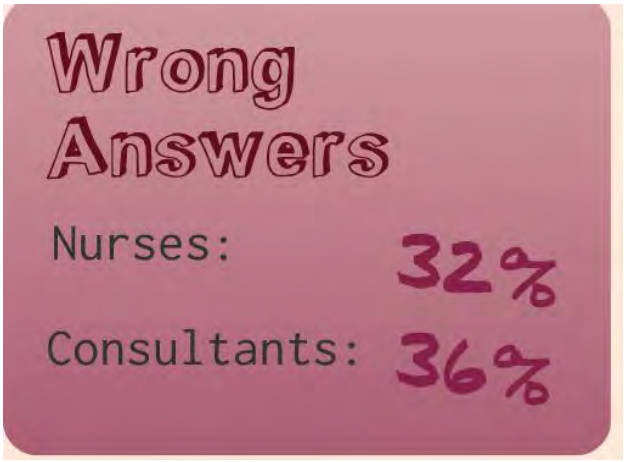
The survey results paint a picture of hand-hygiene compliance at TMC that strongly diverges from reality. Respondents found that hand-hygiene receives a priority among all issues at TMC, and they all acknowledge the importance of hand-hygiene in preventing health-care associated infections. On a scale of 0 to 4, with 0 is "not important at all" and 4 "very important", both items scored above 3.5 on average.

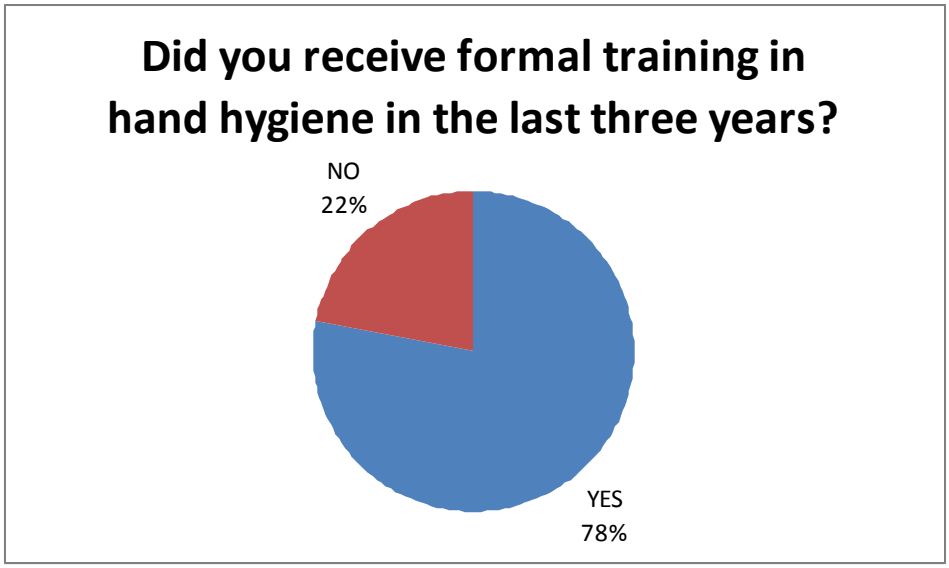


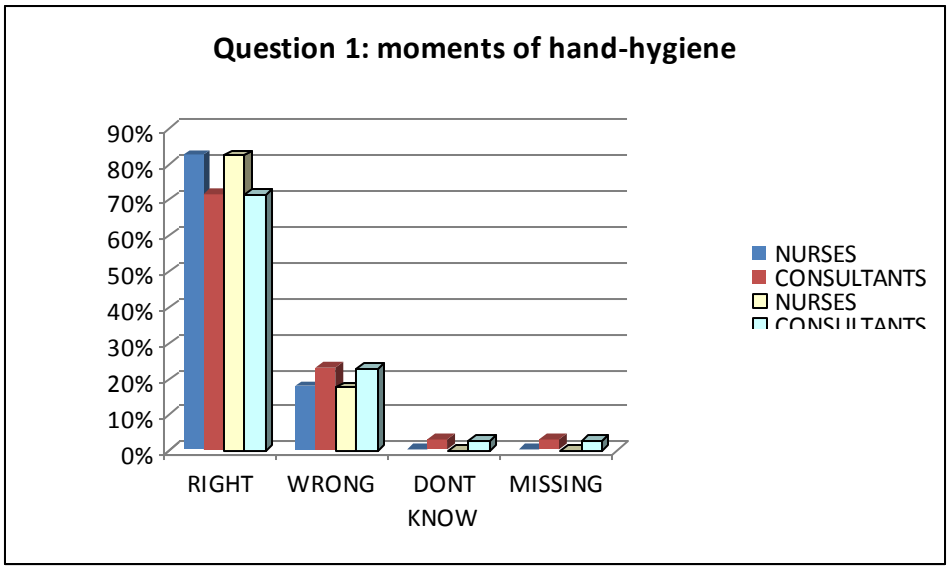

Most significantly, everyone was very positive about both their own and others performance in hand-hygiene: the average estimation is close to 90%, although the consultants have less confidence in others: they estimated the compliance of their colleagues to be 65%.

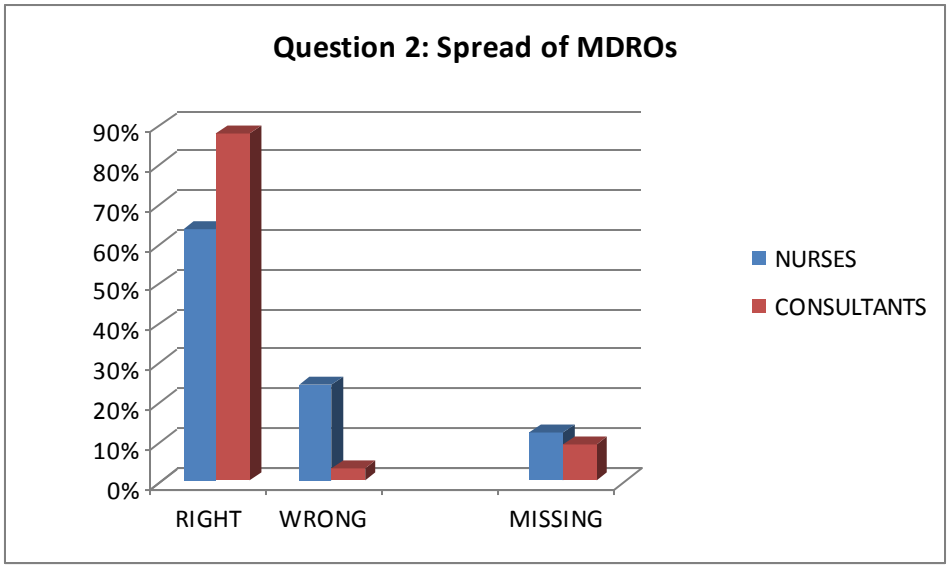
| Perceived compliance | Nurses | Consultants |
|---|---|---|
| *TMC Compliance* | **86%** | **65%** |
| *Yourself Compliance* | **88%** | **85%** |

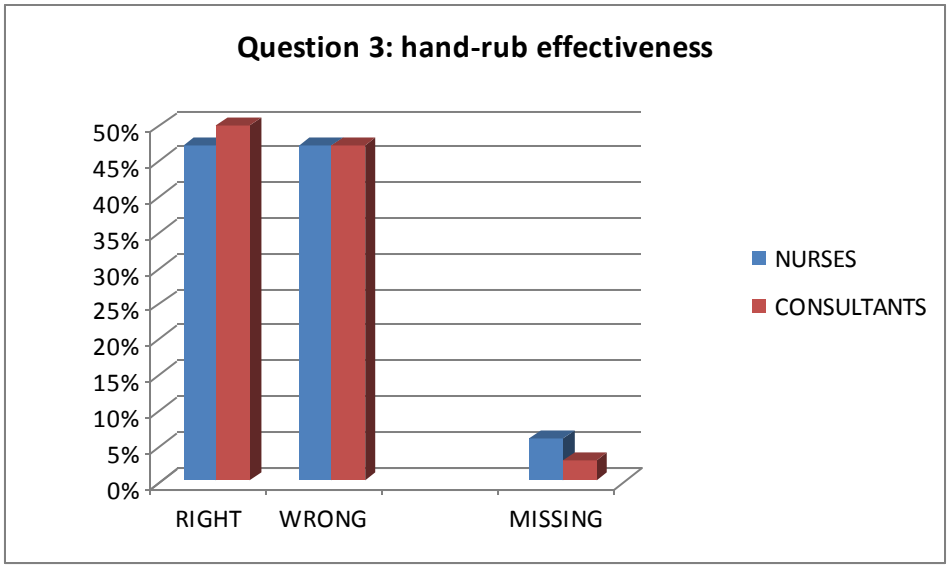
**Survey results part II: knowledge**

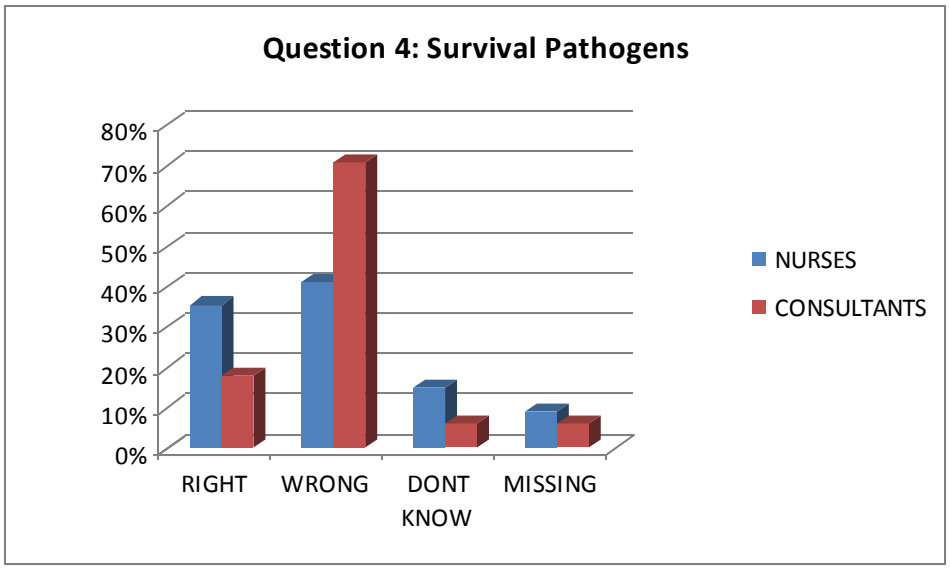



Did you receive formal training in hand hygiene in the last three years?
NO
22%
YES
78%


Question 1: moments of hand-hygiene
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
RIGHT
WRONG
DONT KNOW
MISSING
NURSES
CONSULTANTS
NURSES


Question 2: Spread of MDROs
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
RIGHT
WRONG
MISSING
NURSES
CONSULTANTS


Question 3: hand-rub effectiveness
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
RIGHT
WRONG
MISSING
NURSES
CONSULTANTS


Question 4: Survival Pathogens
80%
70%
60%
50%
40%
30%
20%
10%
0%
RIGHT
WRONG
DONT KNOW
MISSING
NURSES
CONSULTANTS

# 6. Recommendations for next year's interns

## *6.1. Personal recommendations*

→ Be pro-active!
→ Before you start any project, make sure you inquire around the hospital to see what is already known about it, and which persons are in charge.

## *6.2. Next year project suggestions*

**Investigate the gap between actual and perceived hand-hygiene compliance.** Conduct interviews on why there is such a big gap between perceived and actual compliance, a finding which "remains an enigma to be explained"[13]. Great publication opportunities!

**Map patient's journey at TMC.** If resources allow (e.g. Interpreter), the journey of patients through TMC should be documented: follow patients as they arrive and move around. Compare private and general patients. Also if possible (more likely for the future), there is a need to find out what happens to poor patients after they leave the hospital! Likely depression, living as outcasts, with no resources…? Really worth investing in disadvantageous patients if outcome is terrible?

**Research patient satisfaction with TMC.** Has several parts: 1) interview both private and general patients 2) conduct surveys among all patients; 3) conduct interviews with social workers. 4) conduct interviews with discharged patients. Focus on patient is currently relatively weak at TMC, this research can cast some light on patient's perceptions of TMC and how the service is.

**Investigate energy-consumption at TMC**. The air-conditioning is in most rooms far too cold. The cafeteria for staff is always freezing cold, so cold that people prefer to sit outside and even leave the door open to let warm air flow in. A terrible waste of energy. There must be something that can be done.

[13] http://www.ncbi.nlm.nih.gov/pubmed/11743481

# 7. Main 'take-aways' of this report

Our main conclusion of 2 months TATA-ISES programme is that TMC is an amazing hospital with dedicated, extremely knowledgeable and inspiring staff. However, there is room for improvement. Mostly because it is a newly established hospital in which practices still have to be institutionalised and everyone is still not entirely clear on how things should work and who is responsible for it. Over time, these things will automatically improve. For now, all we can do is point out the most salient point of improvements that we have come across.

Overall, we found that there is within TMC relatively too much focus on the advanced, 'fancy' processes within the hospital, such as complicated operations, research, publishing and so on, while the basics are not properly in place. No matter how well super-advanced surgeries are done, if patients die two weeks later because of an infection because staff did not wash their hands properly, TMC's advanced expertise is useless. Similarly, if poor patients are being successfully treated here for free, but then discharged where they do not complete the full loop of treatment and consequently pass away anyhow, valuable resources, and even more critically, lives are wasted. Some things at TMC can be done more efficiently, effectively and with better outcomes. We elaborated on these findings and recommendations throughout the report, but please find the – in our opinion – most salient projects for the years to come.

***(A) Improve the discounting process***. Have a proper discounting system in place in which the right people pay the right amount of money.

***(B) Set up a proper patient-navigation department***. Ensure that once patients enter the hospital, know where they are, what they have to do and complete the full loop of mediation.

***(C) Connect to Kolkata's existing networks***. There are many organisations in Kolkata that have the expertise, networks and resources that TMC lacks. Do not try to reinvent the wheel, but connect to the existing networks to reach out, share TMC's expertise and be at the same time far more cost-effective than if we would things in-house.

***(D) Install proper hygiene practices.*** Infection rates at TMC are relatively very high. No matter how well super-advanced surgeries are done, if patients die two weeks later because of an infection, TMC's advanced expertise is useless. Moreover, prolonged stay of patients is not only a problem health-wise, but also keeps scarce beds occupied. Simply cleaning hands, or having proper toilets, is probably the most effective way to safe many lives and large amounts of money.

*We have been under the impression that reports like this often end up in a drawer, but hope we are wrong with this one. We appreciate if you prove us wrong and send a mail to KarolinaGombert@gmail.com and Rbvandalen@gmail.com when you read it. This is just for us to keep track of whom our recommendations are reaching. And there our next study starts.... Thank you for your time and effort!*

*Robin and Karolina*

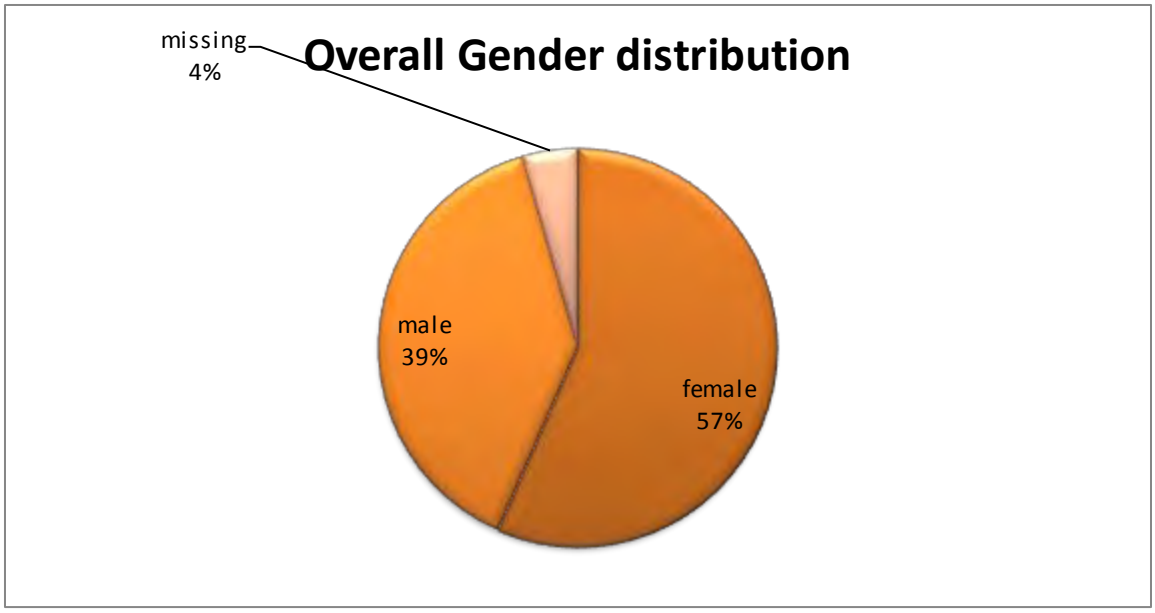
# Appendix 1: Key Contact Persons & Information

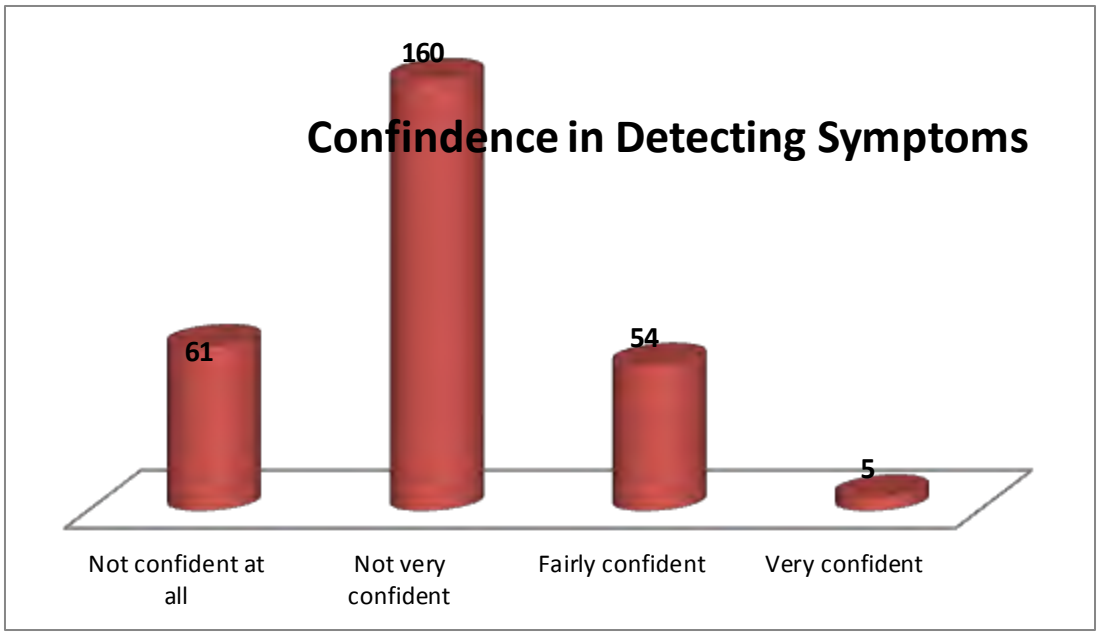
| TATA-Steel Distributors | Why contact/person description |
|---|---|
| Niraj Bubna – Distributor of TATA Steel, Shaktee GC Sheet<br>12, Government Place East, 2nd Floor, Kolkata – 700069<br>Tel: (033) 22484820, 30283123-25<br>Mobile: 9830054161<br>Fax: (033) 30249029<br>Email: bubnacom@vsnl.com | → Motivated distributor<br>→ Has access to Rural areas<br>→ Willing to include cancer-awareness messages in its marketing programme (and also volunteers) |
| Amit Agarwal – Distributor of TATA Steel, Steelium range<br><br>2, NC Dutta Sarani, Sagar Esate, 4th Floor, Unit-3, Kolkata – 700001<br>Phone: 2230 1984, 2230 0341, 22305181, 2242 7908<br>Mobile: 980038331<br>Fax: 22311083<br>Email: sklc@cal3.vsnl.net.in | → Extremely Motivated distributor<br>→ Willing to provide volunteers and include cancer-awareness messages in its marketing programme<br>→ Interested in future cooperation and fundraising |
| Cancer Foundation India | |
| 1120 Tagore Park, Tiljala<br>Kolkata - 700 039<br>Phone: +91 33 2345 2728<br>Fax: +91 33 2345 2828<br>Email: cancer-india@vsnl.net<br>Website: www.cancerfoundationofindia.org | Very motivated and proactive head of the organisation<br>The foundation is very well connected (e.g. last year, they had a talk organised with Amartya Sen)<br>Would welcome support by TMC |
| Calcutta International School | |
| Dr. (Mrs.) Anuradha Das (Director)<br>724, Anadaput, Kolkata-700 107<br>Tel.: (91) (33) 2443205455 (0), 2443-2050 (Direct)<br>Fax: (91) (33) 2443 2051<br>Email: director@calcutttais.edu.in<br>Website: ww. Calcuttais.edu.in | The director and contact person for further engagements with Calcutta International School |
| Kalpana Datta Foundation | |
| Dr. Dipankar Datta<br>Hiland Park, Peak Tower 18/19 A1<br>Kolkata 700 0094<br>Phone: 033-2436-7696<br>Mobile: 9831771761<br>Email: dattadoptonline.net, dattadeput@gmail.com | The Kalpana Datta foundation organizes cancer screenings<br>Dr Datta is very eager and proactive to connect with TMC<br>The Foundation has the networks |
| Make A Wish Foundation of India | |

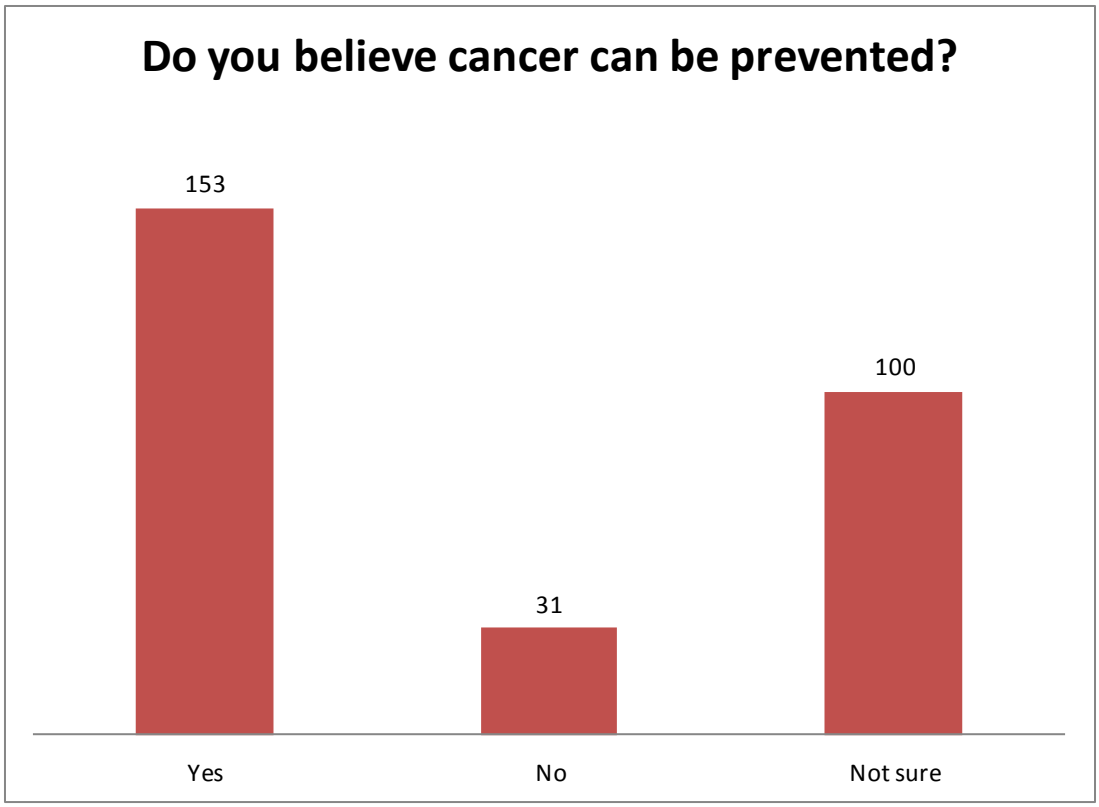
| | |
|---|---|
| Sakuntala Chanda<br>Programme Coordinator<br>Tel: +91 9831474142<br>CG-106, Ground Floor, Sector 2, Salt Lake City, Kolkata.700 091, INDIA<br>Email:<br>Kolkatadivision@makeawishindia.org<br>Webstie: www.makeawishindia.org | Make a Wish is already working at TMC; they have weekly visits to TMC<br>This contact is to once again point to their potential contribution within the "TMC to Kolkata" approach |

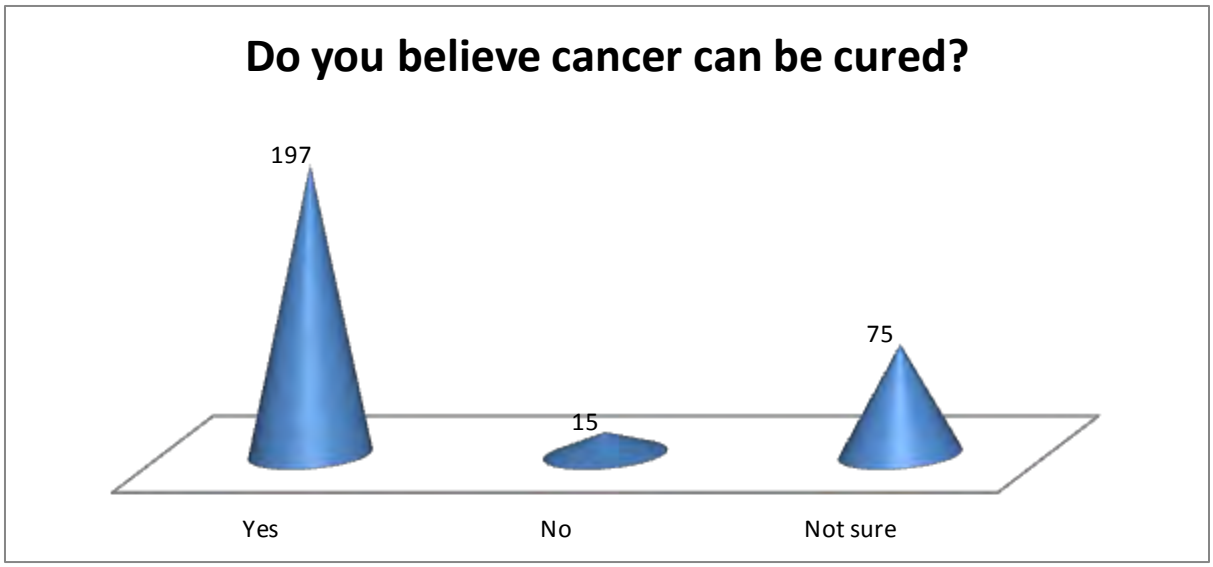
# Appendix 2: Project 2, Cancer Awareness, Essential Tables

## *Students*

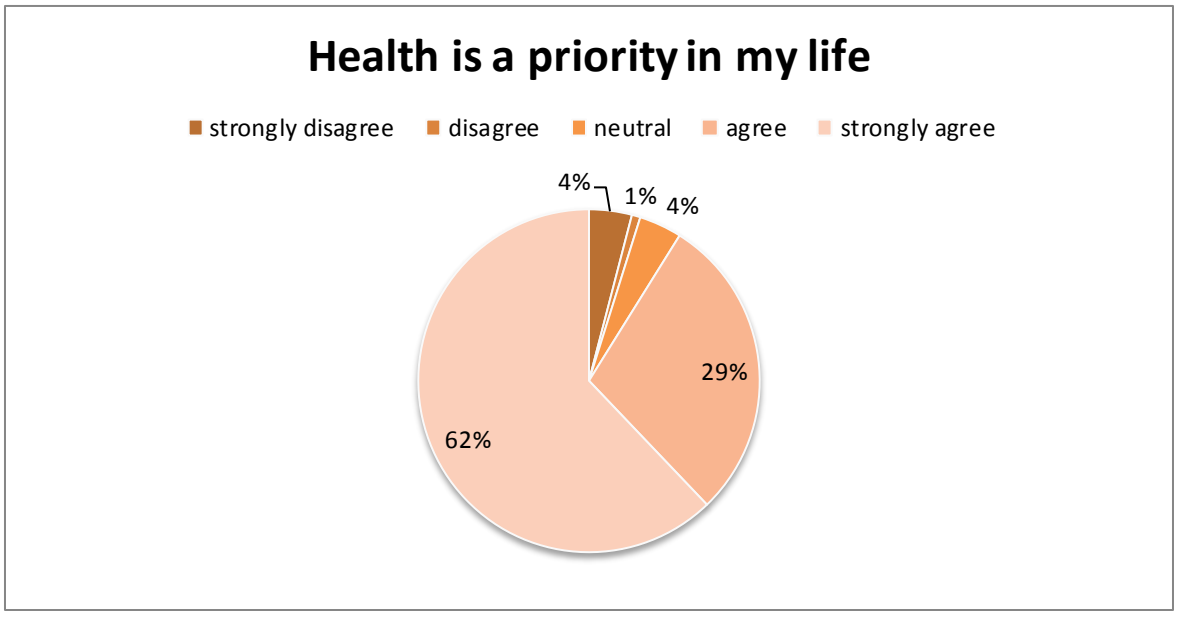


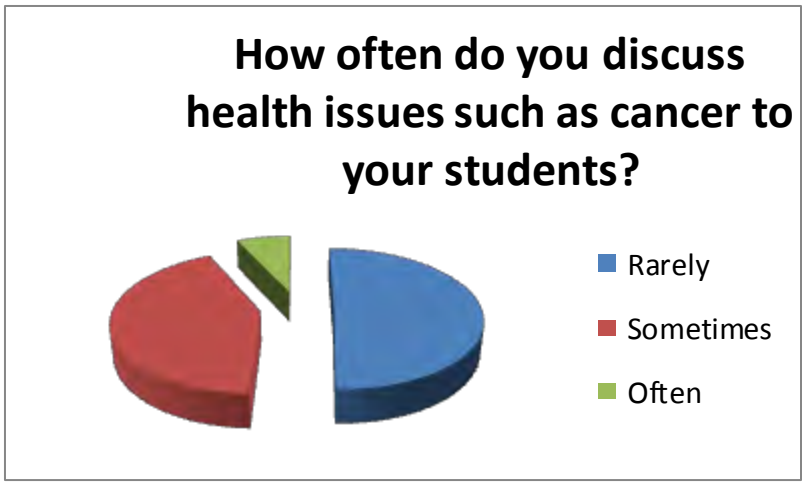

Confindence in Detecting Symptoms
160
61
54
5
Not confident at all
Not very confident
Fairly confident
Very confident

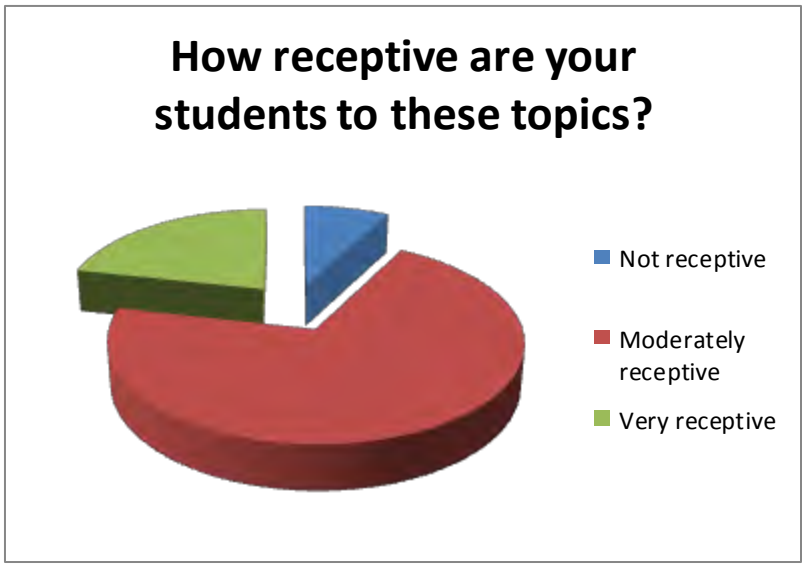

Do you believe cancer can be prevented?
153
31
100
Yes
No
Not sure

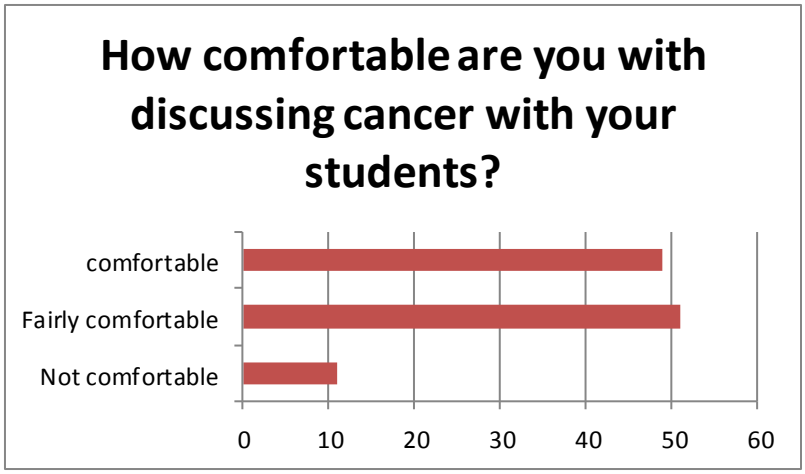

Do you believe cancer can be cured?
197
15
75
Yes
No
Not sure

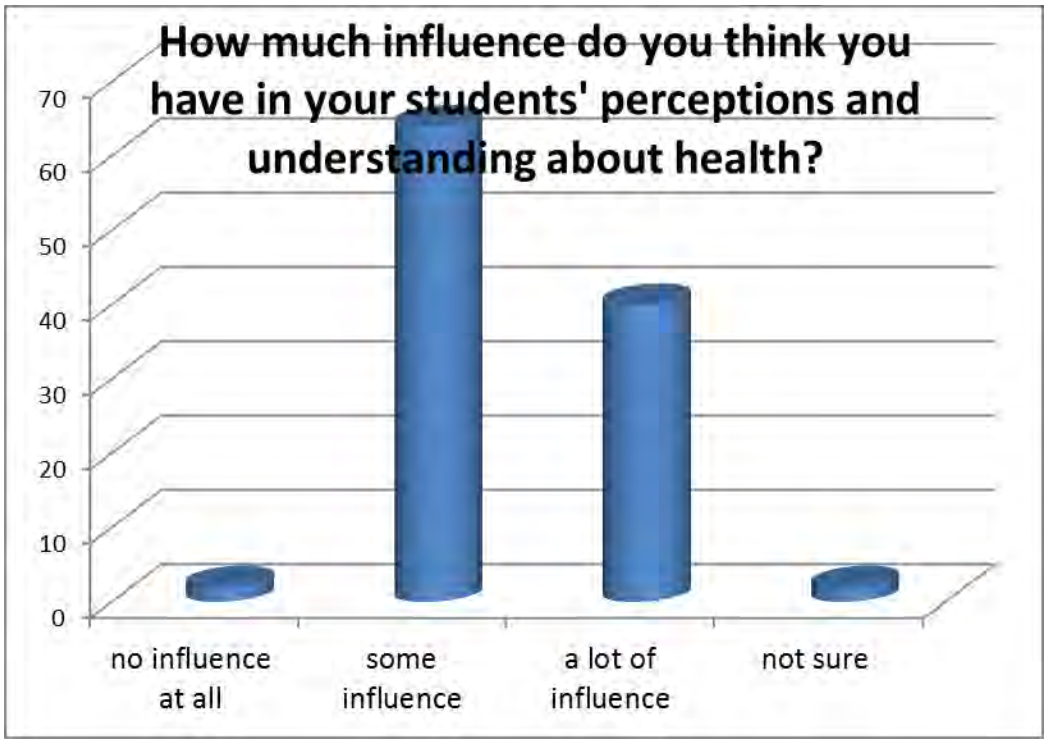
## *Teachers*


Health is a priority in my life
strongly disagree
disagree
neutral
agree
strongly agree
4%
1%
4%
29%
62%


How often do you discuss health issues such as cancer to your students?
Rarely
Sometimes
Often


How receptive are your students to these topics?
Not receptive
Moderately receptive
Very receptive


How comfortable are you with discussing cancer with your students?
comfortable
Fairly comfortable
Not comfortable
0
10
20
30
40
50
60




## Appendix 3: List of Supplements (Deliverables)

Completed (supplementary) Documents which evolved throughout the two month of the TISES program include:

- Transcripts of 4 Teacher Focusgroups (as well as their recording)
- Transcripts of 6 Student Focusgroup (as well as their recording)
- Transcripts of 8 Organisation/Company Interviews (HOPE Hospital, Make a Wish, Cancer Foundation India, HOPE foundation, Tata Steel, Kalpana Datta Foundation, St Judes) (as well as their recording)
- Excel Data Collection: Hand Hygiene Research, Student Questionnaires, Teacher Questionnaires, Blood Donor Research
- IRB Proposal Cancer Awareness
- Academia and Campaigns Documentation
- Multiple visual documentation (from all visits)