



# Project i2Eye

**2020 - 2021**

Proposal to Shri Sadguru Seva Sangh Trust,  
Sadguru Netra Chikitsalaya (SNC)  
Chitrakoot, Madhya Pradesh

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## Section 1: Introduction to Project i2Eye

Project i2Eye is a student initiated project led by students from various faculties in National University of Singapore including the Yong Loo Lin School of Medicine and School of Computing. Started in January 2019, Project i2Eye is mentored by Adjunct Associate Professor Rupesh Agrawal, who initially approached NUS with the goal of expanding collaborations to reconnect locals with the healthcare system in the management of both eye and general health conditions. Hence, this led to the birth of Project i2Eye.

### Section 1.1: About us

#### 1.1.1: Profile

- Contact Information: [projecti2eye@gmail.com](mailto:projecti2eye@gmail.com)  
Website: <https://projecti2eye.com>
- Executive Committee:  
Chairpersons: Mr Francis Fong Jia Yi, Mr Ryan Chee Choon Hoe  
Secretary-Treasurer: Ms Aiswarya Panda

#### 1.1.2 Our Vision

- To create a self-sustainable ecosystem where health is prioritised and health needs are met through establishing partnerships, raising awareness and promoting individual accountability

#### 1.1.3 Our Mission

- To connect local stakeholders, empowering them to actively promote the health of the wider society
- To foster a culture of service amongst local youths, inspiring them to be future health ambassadors for society

#### 1.1.4 Our Objectives

- To improve health conditions through partnership efforts
- To harness the use of technology to improve screening protocols, data collection and intervention methods
- To partner and unite stakeholders to provide holistic health care for villagers

#### 1.1.5 Our Goals

- To ultimately reconnect villagers to the local healthcare system by:
  - 1) Empowering villagers with fundamental healthcare knowledge
  - 2) Enabling complete ownership of individual healthcare
  - 3) Encouraging villagers in health-seeking behavior

## Section 1.2: Why Chitrakoot, Madhya Pradesh?

### 1.2.1: Background

Chitrakoot is a Nagar Panchayat of great religious, cultural and historical significance in Satna district, Madhya Pradesh. Known to many as the heart of India, Madhya Pradesh is proudly home to innumerable monuments, temples and beautiful natural heritage. This was witnessed during our previous trip to Chitrakoot in December 2019 which cemented our passion to help the community in Chitrakoot, Madhya Pradesh.

From our previous trip, we identified a few key concerns present based on our primary and secondary data collected:

#### a. Limited Awareness of certain health issues

Gap in knowledge including information about risk factors for diseases and potential treatment options for these conditions. This gap in knowledge results in individuals being unable to implement interventions to prevent or slow the onset of disease, seek treatments and cures for the diseases that they are experiencing.

#### b. Lack of Desire to take Preventative Health Measures or Seek Healthcare

Health-seeking behaviour are the actions that individuals undertake in order to rectify perceived ill-health and is essential in the self-management of one's health. Taking steps to engage with the healthcare system is critical for individuals to receive the necessary resources that they need to improve their health. A lack of health-seeking behaviour is a significant problem in the healthcare context of Chitrakoot, as individuals may continue to suffer from undiagnosed diseases that can potentially result in long-term complications.

#### c. Insufficient General Health Screening Services

General health screening services that involve the participation of members of the community, even seemingly well ones, to attend are essential in the prevention, early detection and timely intervention of diseases. Hence, Project i2Eye can further assist SNC through partnerships in providing holistic care to the villages in Chitrakoot.

### Section 1.3: Our Focus

The above 3 problems are exhibited in the following 2 health issues that we seek to target - high anemia prevalence and tobacco-consumption is a norm in Chitrakoot:

#### 1) Health Issue 1: Prevalence of Anemia

Anemia is an issue that the Indian government has identified and has implemented strategies to solve it. From training local healthcare workers (also known as ASHAs - Accredited Social Health Activists) to giving out Iron Folic Acid Tablets to girls and women<sup>1</sup>, commendable efforts have been carried out by the Indian government. With this in mind, our primary data from our post-trip report in Chitrakoot has instead revealed that anemia still currently stems at a 64.9%. We acknowledge that the government programmes may have yet to take effect and show results. However, based on our secondary research, identified causes of anemia in rural villages include malnutrition, parasitic infections, lack of awareness of the condition and preventive measures as well as cultural and religious practices<sup>2</sup>. With this multitude of causes, we therefore seek to identify the main reasons that have led to a high occurrence of anemia in Chitrakoot and explore how our campaign can further tie in with the aims of the government programs, to improve the Anemia situation in the villages of Chitrakoot.

#### 2) Health Issue 2: Prevalent Tobacco-consumption practices

In a report from the Global Adult Tobacco Survey conducted in India, results have shown that 28.6% of adults in India currently consume tobacco with the prevalence of tobacco-consumption in Madhya Pradesh stemming at 35.5%<sup>3</sup>. As a result, India has implemented a plethora of tobacco controls and an increasing number of Indian states have responded by pushing out anti-tobacco and smoke-free laws, including Madhya Pradesh<sup>4</sup>. However, from our primary data gathered in the post-trip report, we identified that 71.1% of the people in Chitrakoot still consume tobacco in the form of Paan, Gutkha and Beedi. Understandably, curbing the tobacco-consumption habit will take time. However, a more pressing issue identified from our interviews with the locals is the fact that many adults who have tried quitting ultimately succumbed to social pressure. Some even highlighted that they lack the necessary knowledge on why and how they should quit tobacco. Hence, through our recce trip, we seek to identify the reasons why tobacco-consumption habits are prevalent before executing our plans and ideas during the main trip.

#### 3) General Health Screening

To further supplement our primary prevention efforts through the execution of anemia and tobacco-consumption campaigns aforementioned, we aim to conduct a General Health Screening during the Main Trip in December. Through this programme, we aim to pique the interest of the locals by encouraging them to take responsibility and ownership for their health. As trialed during our previous trip, we hope to enhance the health of the local community secondary prevention of chronic disease conditions in 2 villages in Chitrakoot. By leveraging

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<sup>1</sup> Training frontline workers to recognize and reduce anemia in Madhya Pradesh. (n.d.). Retrieved January 28, 2020, from <https://clintonhealthaccess.org/training-frontline-workers-to-recognize-and-reduce-anemia-in-madhya-pradesh/>

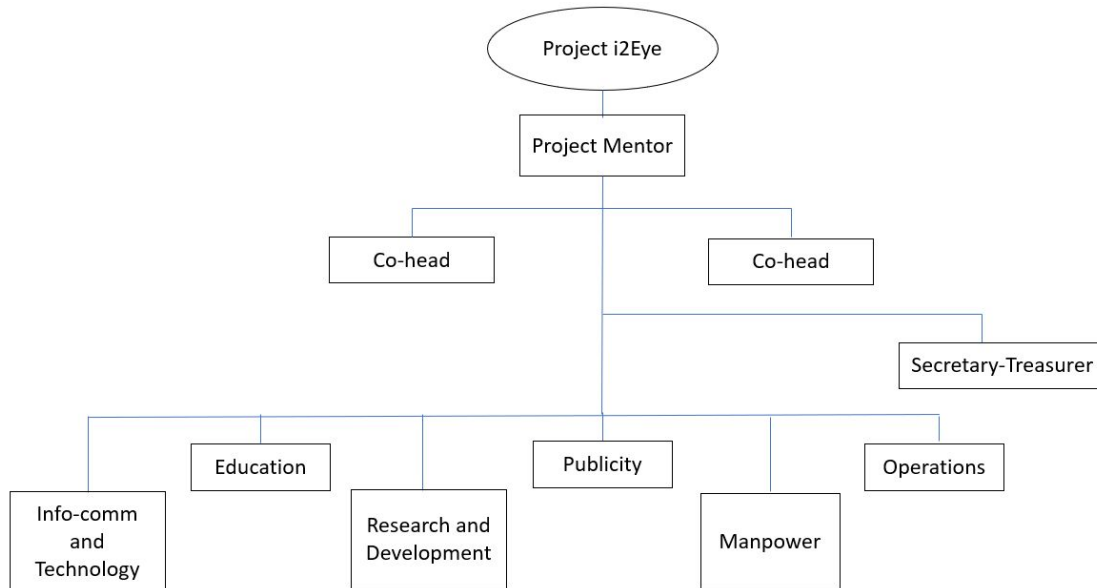
<sup>2</sup> Little, M., Zivot, C., Humphries, S., Dodd, W., Patel, K., & Dowe, C. (2018). Burden and Determinants of Anemia in a Rural Population in South India: A Cross-Sectional Study, 2018, 9. Retrieved from <https://doi.org/10.1155/2018/7123976>

<sup>3</sup> World Health Organisation. (2016). Global Adult Tobacco Survey, India. *Global Adult Tobacco Survey, India*.

<sup>4</sup> International Tobacco Control Policy Evaluation Project. (2013). *Tcp India Project Report*. Retrieved from <https://itcproject.org/resources/view/1516>

Singapore's current health screening practices, we ultimately hope to tie in with the Indian government's recommendations in the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).

## Section 1.4: Our Committee Structure and Objectives



### 1.4.1: Education Committee Objectives

With the aim to better the healthcare knowledge, lifestyles and health-seeking behaviours of the population of Chitrakoot, and in particular, the rural dwellers, we seek to achieve this via the implementation of relevant health education programs tailored to the population's needs through 3 main themes: General Health, Women's Health and Children's Health.

The basic skills and knowledge that will remain consistent throughout our year-long educational interventions would include

- General Health encompassing: A healthy diet, an active lifestyle, handwashing habits and wound treatments
- Women's Health encompassing: Menstruation and menstrual hygiene
- Children's Health encompassing: Eye-care habits

The direction of our educational interventions would be based on data collected from our RnD committee. Back in December 2019, i2Eye conducted a 2 day health-screening at SNC comprising 97 participants and a field survey at 5 villages (Pathara, Paldev, Jugalpur, Chaubeypur and Baruamil) comprising 38 participants. With the data collected, Anemia and Tobacco Consumption were identified as key and prevalent problems for our committee to tackle as aforementioned in Section 1.3.

During our upcoming trips, we aim to tackle Anemia and Tobacco Consumption through campaigns to educate and raise awareness of the risk factors, consequences as well as

prevention measures of anemia and prolonged tobacco usage to the population of Chitrakoot. Various aspects of the general themes (General Health, Women's Health and Children's Health), will also be interwoven into our campaign.

#### 1.4.2: Operations Committee Objectives

Our screening aims to help identify and address prevalent health-related issues in the community. We hope to conduct General Health screenings in villages during the December Main Trip.

This screening will include tests for chronic diseases - namely obesity, diabetes, hyperlipidemia, hypertension, anemia and eye diseases. Participants will get a chance to consult the doctor if this has been indicated in their screening results, or if they are otherwise keen on speaking to a doctor. Through our screenings, we hope to help participants identify any diseases they may have at an early stage, allowing them to see medical intervention early enough. Additionally, we hope to identify common health problems and educate the participants on them in hopes of encouraging prevention of other chronic diseases. Participants will be encouraged to get their height and weight measured for the purpose of BMI calculation, in order to determine if their nutrition and growth is adequate. Their hemoglobin levels will also be measured to test for undiagnosed anemia. Finally, their vision will be checked at the eye screening stations for common conditions like refractive error.

#### 1.4.3: RnD Committee Objectives

Through the general health screening and on-the-ground research at the villages, we aim to grasp a better understanding of Chitrakoot's health profile and general needs to better tailor our screening stations and education topics to the needs of the people there.

We seek to use the data collected to write a research paper or write-up which can potentially alert and inform local Indian authorities about the health situation in Chitrakoot. The data collected would also be consolidated into a Post-Trip Report, similar to previous years for accountability purposes. This Post-Trip Report would also be made available to sponsors.

##### Post-Trip Report:

The RnD committee would do a Post-Trip Report at the end of every trip (May 2020 and December 2020). In this report, details of what we have done in each trip will be included. This will include our literature reviews prior to the trip, our processed data from the screenings and field surveys conducted, our education materials, and acknowledgements of sponsors and volunteers.

##### Write-Up for Local Authorities:

The RnD committee would like to do a write-up for local Indian authorities. In this write-up, processed data from the screenings and field surveys conducted will be presented. Additionally, correlations between a patient's socio-economic status, demographic details, lifestyles and their health profile would be drawn. This write-up would hopefully give the local Indian authorities some insight into the health profile and influencing factors of Chitrakoot, which can aid in the development of health policies.

#### 1.4.4: Manpower Committee Objectives

The main aim of our volunteer committee is to recruit enthusiastic volunteers whom we will train to help us in our project and eventually become a part of our project to contribute in future trips. The short term plan is to invite nursing and ophthalmic assistant students who are interested in helping the community to join our project to help us in our campaigns and village education, as well as, help in the form of translators. This will help us establish a good relationship with the volunteers which will allow us to work with them efficiently in the future. Our long term plans include forming an i2Eye team in Chitrakoot comprising of nursing and ophthalmic assistant students, who can help in the development of our projects by inputting their ideas and helping in volunteer recruitment. Overall, we aim to form a better relationship with our volunteers so that we can work together with them in making Project i2Eye successful.

#### 1.4.5: Publicity Committee

The Publicity team aims to build the brand of Project i2Eye and to spread awareness of the cause that we are embarking on.

Before each main and recce trip

- i. Compile a list of potential sponsors
- ii. Sponsorship procurement
- iii. Maintenance of social media pages (instagram, facebook, website)
- iv. Redesigns

During our trips

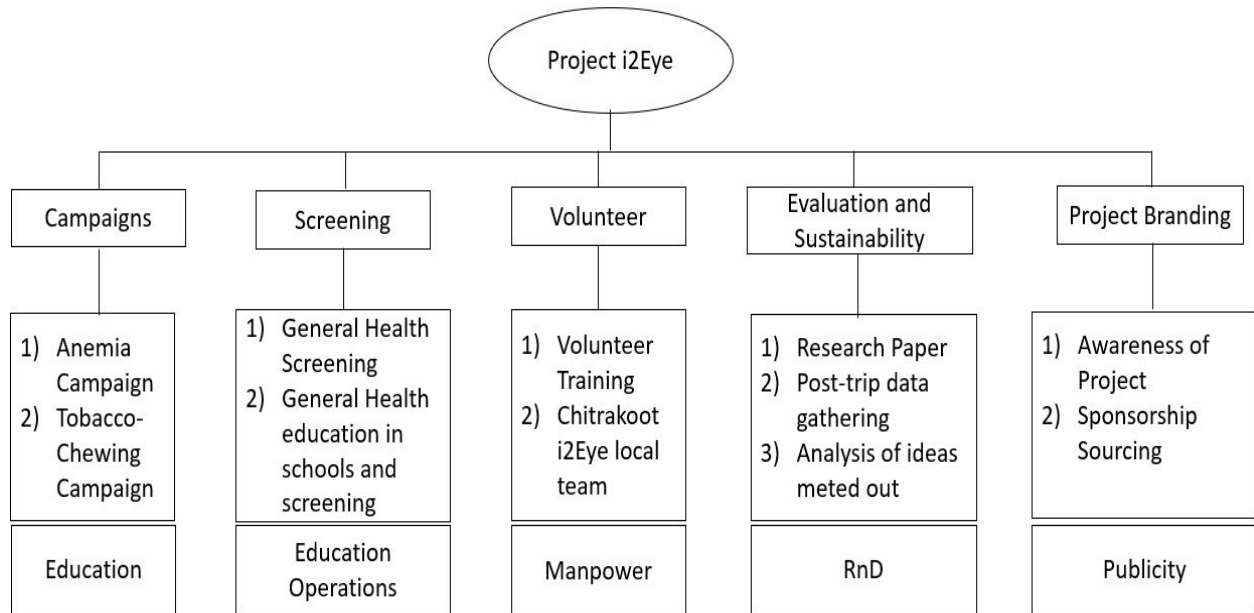
- Social Media updates on accomplishments every few days
  - i. Inclusive of posts where members and volunteers can pen down their reflections during the trip
  - ii. Updates on the work we are embarking on
- Take photos and videos of our work and outreach

After our trips

- Produce a video montage that encapsulates the learning journey and impact made during the trip
- Design publicity materials to recruit juniors and potential volunteers into the Project



### Section 1.5: Project Implementation for the year



As highlighted in section 1.3, Project i2Eye will focus on Educational efforts and the implementation of a General Health Screening for villages in Chitrakoot. Also, in addition to serving the Chitrakoot community through establishing key partnerships with SNC, Project i2Eye also hopes to establish a Volunteer Team in Chitrakoot, to promote a spirit of service amongst the Chitrakoot community.

## Section 2: Upcoming plans for May Recce Trip

### Section 2.1: Our Objectives

- Carry out an anemia campaign in 2 villages
- Conduct preliminary and primary research on the issue of tobacco-chewing habits amongst villagers
- Meeting up with local partners and establishing plans for the Volunteer Committee
- Settle trip details for main trip
- Enhance publicity for Project i2Eye

### Section 2.2: Dates and Itinerary

Dates: **7 May 2020 to 14 May 2020** (Tentatively)

\*In light of the COVID-19 virus in Singapore, the National University of Singapore, Yong Loo Lin of Medicine has issued an email saying that all activities for overseas projects will be suspended. However, this recce trip can still be subjected to change, depending on how COVID-19 virus pans out in Singapore and in India. We will keep SNC updated with the latest information.

#### Tentative Itinerary:

Date	Recce Trip Details	
<b>7 May (Thurs)</b>	<b>Travel to Chitrakoot</b>	
<b>8 May (Fri)</b>	<b>Before Lunch</b>	Meeting with SnC to finalise details RnD, Edu and Ops agenda setting of priorities with the team Campaign Preparation
	<b>After Lunch</b>	Volunteer Training + Campaign Preparation (4 hrs)
<b>9 May (Sat)</b>	<b>Anemia Campaign</b> – done at Pathara Village (5 hrs – including set up) Tobacco-consumption surveys to be conducted as well at the village	
<b>10 May (Sun)</b>	<b>Anemia Campaign</b> – done at Chaubeypur Village (5 hrs – including set up) Tobacco-consumption surveys to be conducted as well at the village	

	<b>Before Lunch</b>	Education at Sadguru Public Higher Secondary School
<b>11 May (Mon)</b>	<b>After Lunch</b>	Establishing of Volunteer Team with SNC
<b>12 May (Tues)</b>	Meeting Potential partners – NGOs (TBC)	
<b>13 May (Wed)</b>	Exploration of Chitrakoot Thank SNC and volunteers	
<b>14 May (Thurs)</b>	<b>Return to Singapore</b>	

### Section 2.3: Tentative Timeline with SNC

- First Discussion with SNC about plans for the May trip: 2nd March - 6 March
- Second Discussion with SNC: 30 March - 3 April
- Confirmation of Itinerary, trip and flight details: 6 April - 10 April

### Section 2.4: Logistics

Project i2Eye will confirm the logistics required with SNC by the **end of March 2020**.

Currently, this list below are items that we are expecting to need for the May trip. The list is not exhaustive or final. We hope to acquire these items, along with additional items suitable for the campaign, from Singaporean and/or Indian sponsors.

S/N	Item	Quantity	Rationale
1	Tables	12	To set-up each station
2	Chairs	40	For villagers and volunteers at waiting areas and booths
3	Poster stands	10	As learning aids for the campaign in schools and villagers
4	Clipboards	20	For hardcopy forms to be filled up
5	Cardboard	10	For construction of learning aids and posters
6	Power sockets &	5	To facilitate the use of laptops and the router at

	extension cords		villages
7	Weighing scale	2	To measure weight for calculation of BMI
8	Measuring tape	2	To measure height for calculation of BMI
9	Alcohol swabs	150	For hemoglobin finger prick test
10	Disposable gloves	150	For hemoglobin finger prick test
11	Wire gauze	150	To halt the bleeding after pricking the finger
12	Lancets	150	To prick the finger
13	Test strips	150	To collect the blood sample
14	Hemoglobin meter	1	To measure the hemoglobin levels of the blood sample
15	Laptops	5	For test and survey results to be recorded down
16	Hard Copy forms	150	As a form of back-up in case of technical difficulties
17	Masks	100	For volunteers and villagers with viral symptoms
18	Trays	5	To contain medical equipment and store forms
19	Goodie bags	150	For villagers to take home with them after the campaign Items in the goodie bag will be acquired from sponsors

We are currently in the midst of looking for monetary and non-monetary sponsors; communicating with them about potential partnerships with the project. For now, we are hoping to partner with companies in Singapore that supply:

- Medical consumables such as alcohol swabs and latex-free gloves
- Seeds for planting crops that are rich in iron
- Copper or iron cutleries
- Basic healthcare products such as toothbrushes, toothpaste

We are also planning to work with established organisations that specialise in anemia management, so that we are able to deliver a more comprehensive healthcare approach to the villagers.

*We hope that SNC is able to assist us in finding potential sponsorships from non-governmental organisations in India that would be willing to support us in our cause. It would be good for SNC to advise us on the suitability of in-kind donations of items and give us feedback on ways to improve the scope of items received.*

## Section 2.5: Details for the Anemia Campaign

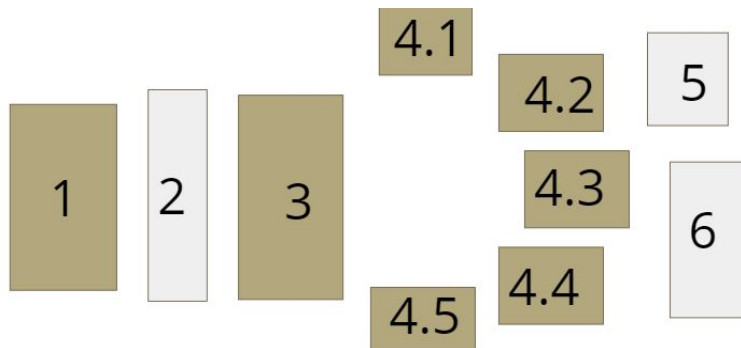
Our main focus for the upcoming May trip will be on the prevalent health issue, Anemia. We strongly believe that education and raising awareness of Anemia will lead to changes in lifestyle and dietary habits amongst the population, which are pivotal steps in reducing the prevalence of Anemia in Chitrakoot.

We aim to initiate Anemia Campaigns in educational institutions and villages. Our target audience for the upcoming trip will be

- Sadguru Public Higher Secondary School
- Pathara Village
- Chaubeypur Village

Our educational campaign adopts a holistic way to educate citizens by blending interactive activities in addition to our educational booths. We will be educating them on the symptoms, common causes, consequences and actions that can be taken to avoid anemia. We hope that our efforts in addition to the concurrent initiatives to tackle anemia by the Madhya Pradesh government will act as a catalyst for a larger change in the community.

Our campaign consists of 9 stations, namely a registration station, an introductory station, 5 stations addressing causes of anemia, a women's health education and a concluding. Image 1 shows the tentative layout for the campaign. The table below shows a brief description of our campaign booths. Similar educational content will be covered across both schools and villages. During the campaign, posters with educational information will also be pasted throughout the villages and schools.



*Image 1: Tentative layout of the campaign to be held in the village*

The booths are as following:

Station 1: Waiting area

Station 2: Registration

Stations 3 to 5: Information booths on anemia

Station 6: Collection

Station	Content
<b>2: Registration</b>	Screening <ul style="list-style-type: none"> <li>● Anemia: Hb fingerstick test</li> <li>● Malnutrition: BMI measurement</li> <li>● Survey questions on personal particulars and dietary habits (More information to be found in section 2.5.1)</li> </ul>
<b>3: Introduction to Anemia</b>	Prevalence, symptoms and consequences
<b>4.1: Causes of Anemia: Malnutrition</b>	<ul style="list-style-type: none"> <li>● Primary focus on dietary habits</li> </ul> Interactive activity: Participants will be provided with a range of picture cards of different foods they eat and they will stick the cards onto where they believe the foods' corresponding nutrition levels are on the nutritional pyramid. We will then explain to the participants the nutritional content of each food, highlighting to them what foods to consume more of.
<b>4.2: Causes of Anemia: Parasitic infections</b>	<ul style="list-style-type: none"> <li>● Primary focus on insecticide use</li> </ul> Interactive activity: Handwashing techniques will be taught and demonstrated to the participants.
<b>4.3: Causes of Anemia: Blood Loss</b>	<ul style="list-style-type: none"> <li>● Primary focus on blood loss due to poor wound treatments</li> </ul> Interactive activity: An on-site demonstration of wound cleaning will be conducted and participants will have the opportunity to practice the skills on themselves using first aid kits.
<b>4.4: Causes of Anemia: Malaria</b>	<ul style="list-style-type: none"> <li>● Primary focus on prevention measures e.g. wearing long sleeves, prevent accumulation of stagnant water.</li> </ul> Interactive activity: Models (potentially borrowed from the Sadguru Nursing School) will be used to explain to participants the prominent mosquito breeding sites in villages etc.
<b>4.5: Causes of Anemia: Tea Consumption</b>	<ul style="list-style-type: none"> <li>● Research has shown that tea consumption has led to a decrease in iron absorption after meals due to the presence of tannins in tea. Hence, we wish to educate participants on the essential ingredients in the preparation of tea that hinder iron absorption and encourage them to avoid consuming tea awhile before and after consuming meals</li> </ul> Interactive activity: An array of ingredients will be laid out and participants will pick out ingredients they use in tea preparation. We will then educate them on the downsides of using each ingredient.

<b>5: Women's education</b>	<ul style="list-style-type: none"> <li>● Information detailing how anemia is more prevalent in women</li> </ul>
<b>6: Conclusion</b>	<ul style="list-style-type: none"> <li>● Educational materials (leaflets) and potential sponsored items will be handed out to participants in a goody bag</li> <li>● Survey questions on participants' perceived effectiveness of the campaign and a mini-evaluation of their takeaways in terms of knowledge and skills</li> </ul>

### 2.5.1: Data collection during the Anemia Campaign

Research and Development Committee would like to carry out pre-intervention screening data collection at villages where our Anemia Campaign is held, as described in our research methodology proposal below in section . The following data will be collected from villagers:

- Demographic Details (Eg. Age, Occupation, Education Levels)
- Fingerstick Haemoglobin Levels
- BMI
- Dietary Habits
- Feedback & Quiz on Education Materials

Also, the RnD committee would like to focus on on-site data collection. We will be conducting a field survey at campaign locations as well as potential screening locations. The field survey will primarily be focused on tobacco consumption, habits and motivation for doing so. For new locations, the field survey will also comprise of questions that are specific to malnutrition and anaemia. This data collected will act as a guide for us when we tailor our education and campaign materials with regards to tobacco consumption, which will be conducted in December 2020 and also help us improve on our anaemia campaign.

### Section 2.6: Planning Ahead

To successfully carry out the tobacco-consumption campaign during the December Trip, we also aim to contact and establish relationships with NGOs having aligned goals with ours to raise awareness of the negative health consequences of tobacco consumption. Some NGOs we have in mind include

- MP Voluntary Health Association
- MP Tobacco Control Society
- Jai Bharti Shiksha Kendra

*We also wish for SNC to provide us with possible contacts to aid in our development of the tobacco campaign.*

## Section 3: Plans for December Main Trip

### Section 3.1: Our Objectives

- To carry out a Tobacco-chewing campaign in Pathara and Chaubeypur villages
- To carry out General health screening initiatives in Pathara and Chaubeypur villages
- To measure and monitor the impact of the previous Anemia campaign (during the May Trip)
- Establishing local Volunteer team in Chitrakoot
- Thanking sponsors and partners for their support

More details for the **December Main Trip** will be mentioned during the May Recce Trip

It is our intention to revisit the same villages to conduct a full health screening, the anemia campaign and a tobacco-consumption campaign. This is inclusive of a follow-up anemia screening which comprises a quick finger-prick hemoglobin blood test. We hope to include an oral cancer screening, in order to assess the current state of health due to tobacco consumption.

### Web Application

For the General Health Screening, the i2Eye screening application, developed by our very own computing students, will play a supportive role in the screening in order to enhance the efficacy of the screening flow and ease the collection of data for research and development.

*We understand that there may be logistical issues with bringing technology to these villagers; therefore we hope to discuss this with SNC and work out a solution together accordingly.*

### Oral Cancer Assessment

We would like to carry out post-intervention screening data collection at the same villages we went to in May 2020, as described in our research methodology proposal below. The following data will be collected from villagers:

- Demographic Details (Eg. Age, Occupation, Education Levels)
- Fingertick Haemoglobin Levels
- BMI
- Dietary Habits
- Feedback & Quiz on Education Materials

As December 2020 would be our main trip, the screening modalities are likely to expand and more data would potentially be collected. This data would be used for our post-trip report for sponsors as well as a write-up for local Indian authorities such that they can be alerted and informed about the health situation in Chitrakoot.



## Section 4: Future Plans

### Section 4.1: Research Proposal

As mentioned, the RnD committee would like to do a research project on our trip there and we would like to propose the following idea:

#### Aim of the proposal:

An evaluation of the effectiveness of the educational methods and materials used during an Overseas Community Involvement Project (OCIP), i2Eye, in improving the Anemia and Malnutrition situation in villages of Chitrakoot, Madhya Pradesh, India.

#### Purpose of Research:

Malnutrition and Anemia are prevalent issues in India. Specifically in Madhya Pradesh, the analysis, Burden of Child Malnutrition in India: A View from Parliamentary Constituencies has found high prevalence of malnutrition, wasting, stunting, anemia and problem of underweight in children of Madhya Pradesh.

In addition, the Comprehensive National Nutrition Survey (CNNS) released in 2019 by the Ministry of Health and Family Welfare showed that 32% of adolescents (10-19 years) in the state are moderately or severely thin, compared to the national average of 24%. The CNNS also shows that about 54% of kids aged 1-4 in Madhya Pradesh 22% of kids aged 5-9 and 21% of kids aged 10 - 19 are anaemic.

According to a 2015 report by ACCESS Health India, there exists a high anemia prevalence in Chitrakoot, with the percentage of pregnant women tested at their 1st trimester found to have low hemoglobin (<11g/100ml), rising from 27.2% in 2014-2015, to 53.7% in 2015-2016. In Madhya Pradesh itself, 1/3 of children younger than five are underweight, and 2/3 are anemic. More than half of married women in the state are anemic. More than 80% of rural women consumed no iron and folic tablets or syrup for 100 days of gestation or more as well, and this could possibly be associated with their lack of education in nutritional knowledge during childbearing, as only 16.2% of women received full antenatal care.

A screening conducted by the OCIP (i2Eye) in December 2019 also reflected that 36.5% (19/52) of screening participants were underweight whilst 64.9% (61/94) of screening participants were anaemic.

With such high prevalence of anaemia and malnutrition, we hope to combat such issues with proper health education. Testing the effectiveness of the education we deliver to the villagers gives us some insight on the villager's receptiveness to the types of education we exposed them to and help curb the highly prevalent issues in Madhya Pradesh.

#### Methodology:

During the i2Eye trip in May 2020, Anemia and Malnutrition Screenings and Educational Campaigns will be conducted in 2 villages and a secondary school in Madhya Pradesh.

**Screening:** During the screening, participants will be registered and given an identification number. Fingerstick haemoglobin tests for anaemia and Body-Mass Index (BMI) measurements for malnutrition will be conducted.

**Education:** After screening, participants will then undergo the anaemia and malnutrition related education provided by i2Eye team members. Topics covered in the education campaign include an introduction to anemia, causes of anemia, and women's health in relation to anemia. The education process uses education materials prepared by i2Eye team members and consists of interactive activities as well as visual aids such as posters. To minimize the language barrier issues that may arise, texts on the education materials will be translated and volunteers who are trained prior to the campaign will be present to assist. A qualitative survey will also be conducted on-site after the education intervention to collect villager's feedback on the education materials and methods.

Another screening will be conducted at the same 2 villages in December 2020. During this screening, we will match previously registered participants based on their identification number. Fingerstick haemoglobin tests for anaemia and BMI measurements for malnutrition will be taken. Participants' data will only be rendered valid for the study if they have knowledge of the educational interventions conducted in May 2020. Effectiveness of the education material and methods they had received in May 2020 will be further evaluated with the conduction of a qualitative survey revolving around the changes they have made in their lifestyle habits post our educational interventions.

Haemoglobin levels and BMI measurements from May 2020 and December 2020 will be compared against each other using various statistical tests such as paired t-test using SPSS to test for any significance ( $p < 0.05$ ).

Potential Benefits:

Gain insight into educational methods that are effective in rural India to combat against Anemia and Malnutrition

Risks:

Loss of Patient Confidentiality

## Section 4.2: Manpower Committee

### Section 4.2.1: Volunteer Training

Recruitment of volunteers can be preferably done through a broadcast message so that volunteers can sign up. These volunteers will then undergo a Volunteer Training to equip them with the knowledge required to run the activities planned by our project members. The aim of the Volunteer Training is for i2Eye members and volunteers to get to know each other, have cultural exchanges, as well as to equip the volunteers with skills and knowledge on how to use the education materials and run campaign activities.

### Section 4.2.2: Bonding activities with volunteers

To build a common understanding and establish strong partnerships with the local volunteers, we intend to have activities where cross-cultural sharing can take place. For instance, volunteers can join us for sightseeing around Chitrakoot so that we can learn more about the area from them. Additionally, events such as a cultural exchange night during future trips, where both parties organise educational activities, performances or booths to spread awareness about local festivities and traditions.

### Section 4.2.3: Chitrakoot volunteer committee

One of our main objectives for the volunteer committee is to establish a local i2Eye committee consisting of nursing and ophthalmic assistant students from SSSST. By creating this cohesive working relationship, the Singapore team can apply ideas from the Chitrakoot team to improve current plans while the Chitrakoot team can learn how to plan, conduct and execute ideas to help their very own community. Also, the Chitrakoot team can recruit new members for the continuity of the project and more local youths can be involved in serving the underprivileged in their own community.

## Section 5: Sustainability Plans

It is the dream of every i2Eye member that we would be able to make a lasting impact on the lives of the villagers in India. Project i2Eye firmly believes in the adage “Prevention Is Better Than Cure”. Each of us strongly recognise that in order to achieve this dream, we must ensure that our project is first self-sustaining. Therefore, we have taken steps to ensure the project’s sustainability.

Initially, Project i2Eye focused on a screening-centric approach, conducting free health check-ups for common non-communicable diseases, such as diabetes and high blood pressure. However, we realised that although the screenings helped villagers in identifying the diseases they had, it did not adequately address the management or prevention of diseases, hence rendering such efforts less sustainable.

Therefore, we decided to shift towards **a more educational approach**, adopting new initiatives such as health campaigns and school health education. The purpose of implementing these new initiatives within villages is to educate our target audience in a way that appeals to them, encouraging them to adopt better health-seeking behaviour. Furthermore, by conducting school education, we intend to cultivate healthy habits in children from a young age to ensure that they are empowered with the knowledge to live healthier in the future.

Our project is also reaching out to **local NGOs**, which aim to tackle similar issues to our project, namely anaemia and tobacco consumption. By working closely with SNC, as well as the NGOs, we aim to persuade villagers to take ownership of their own health and reconnect them into the local healthcare system so that they can receive proper health-care even without the aid of our project.

Furthermore, our project will focus on forming a **local i2Eye team in Chitrakoot** by recruiting student volunteers from the Sadguru School of Nursing and Paramedical. During our biannual trips, we will form a better relationship with these volunteers, transfer our knowledge in leadership and project planning skills to enable them to plan such initiatives independently. In the future, we hope that these volunteers can assist us in the planning of the project, through recruitment of new volunteers and arrangement of logistics, and then eventually take over the project completely. This will ensure that the youths in Chitrakoot take ownership for the healthcare in their community, and do their part in improving it.

Ultimately, we believe that through this **education-centric approach**, we will be able to cultivate better health habits to curb the prevalence of diseases and prevent the onset of diseases in the villages. This ensures a more long-term solution to the problem of non-communicable diseases. We hope that with the continued support from SNC, one day we will be able to realise this dream: A self-sustaining ecosystem where health is prioritised and health needs are met through established partnerships, awareness and individual accountability.