EVALUATION OF ORBIS INDIA'S INITIATIVE TO REDUCE AVOIDABLE VISION IMPAIRMENT IN SCHOOL-GOING CHILDREN

Sijia Chen, Angela Hartley, Marina Lafer and Maria Jose Meza-Cuadra
Columbia University, School of International and Public Affairs

May 2018

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SECTION A

PROJECT INTRODUCTION

1. OVERVIEW OF ORBIS INTERNATIONAL

Background of the client organization

COLUMBIA SIPA School of International and Public Affairs

orbis

MISSION

"With our network of partners, we mentor, train and inspire local teams so they can save sight in their communities."

VISION

"To transform lives through the prevention and treatment of blindness."

(Orbis International, 2018)

ORBIS IN A NUTSHELL

Established in 1982

Permanent office established in Delhi, India in 2000

Headquartered in NYC

Training programs held in 92+ countries

(Orbis International, 2018a) (Orbis International 2018b)

ORBIS IN A NUTSHELL

40+ long-term projects

Partnerships with local hospitals, eye health networks and governments, to build health systems' capacity and provide direct care services

219M USD in revenues in 2016

213M USD in expenses

58M USD in net assets

Flagship projects include the MD-10 flying eye hospital and CyberSight telemedicine program

(Orbis International, 2018a); (Orbis International, 2018c); (BDO USA, 2017)

ORBIS IN A NUTSHELL

Operations in 18 countries

Bangladesh, Bolivia, Cameroon, China, Ethiopia, Ghana, India, Kenya, Malawi, Nepal, Peru, Rwanda, South Africa, Tanzania, Uganda, Vietnam and Zambia

8 fundraising offices

Canada, UK, Ireland, South Africa, Singapore, Macau, Hong Kong and China

2,719,830 pediatric screenings and examinations in 2016

(Orbis International, 2018a); (Orbis International, 2018c)

PROJECT INTRODUCTION

2.
OVERVIEW OF REACH (REFRACTIVE ERROR AMONG CHILDREN) PROGRAM

History, objective and implementation design

REACH IS A COMMUNITY OUTREACH PROGRAM

- Created in 2015 with the support of the Qatar Fund for Development (QFFD) as a childhood blindness prevention program in both India and Bangladesh.
- REACH is part of QFFD's Qatar Creating Vision (QCV) initiative which aims to eradicate avoidable blindness in the developing world.
- Using QCV's grant, REACH's target is to deliver screenings and treatments to children in India until 2020.

(Qatar Creating Vision, 2016); (Qatar Creating Vision, 2017)

PROGRAM OBJECTIVES

1. **Increase access** to child eye health by providing comprehensive refractive error services to school-going children

2. **Improve the quality** of child eye health through high-quality refractive error services for school-going children

3. Develop an **enabling environment** to ensure the delivery of these services as well as to create an evidence base to support a favorable policy and institutional environment

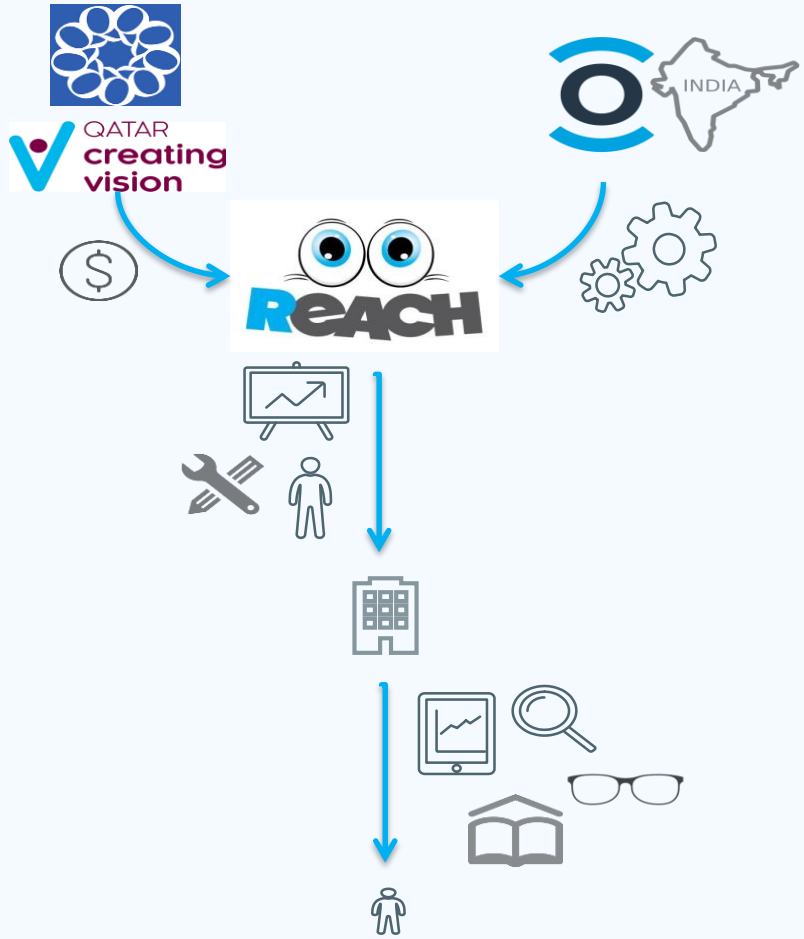
(Qatar Creating Vision, 2016)

PROGRAM OBJECTIVES

QFFD pledges the financial resources and **Orbis India** designs the program, develops the clinical protocol and establishes the partnerships with the hospitals.

At the hospital partner, **REACH** recruits and trains the needed personnel, procures the required infrastructure and equipment, develops school outreach plans and permissions and sets the database of school-enrolled children.

At schools, **REACH** delivers vision screenings, spectacle prescription and provision and referral to further examination. **REACH** also monitors children's compliance and creates mechanisms to manage referral systems and to motivate spectacle use.



(Qatar Creating Vision, 2016)

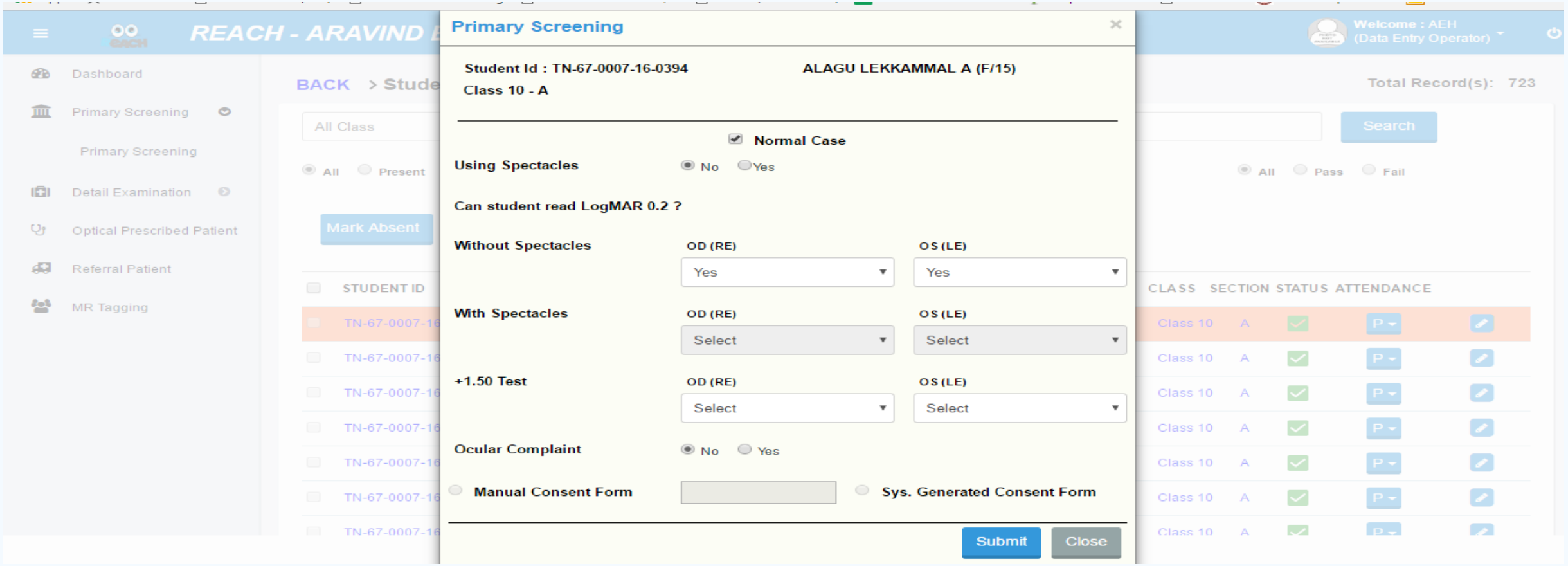
REACHSOFT

- REACHSoft, an integral part of REACH, is a data collection and management tool that allows REACH staff to move away from paper-based data collection to a digital platform.

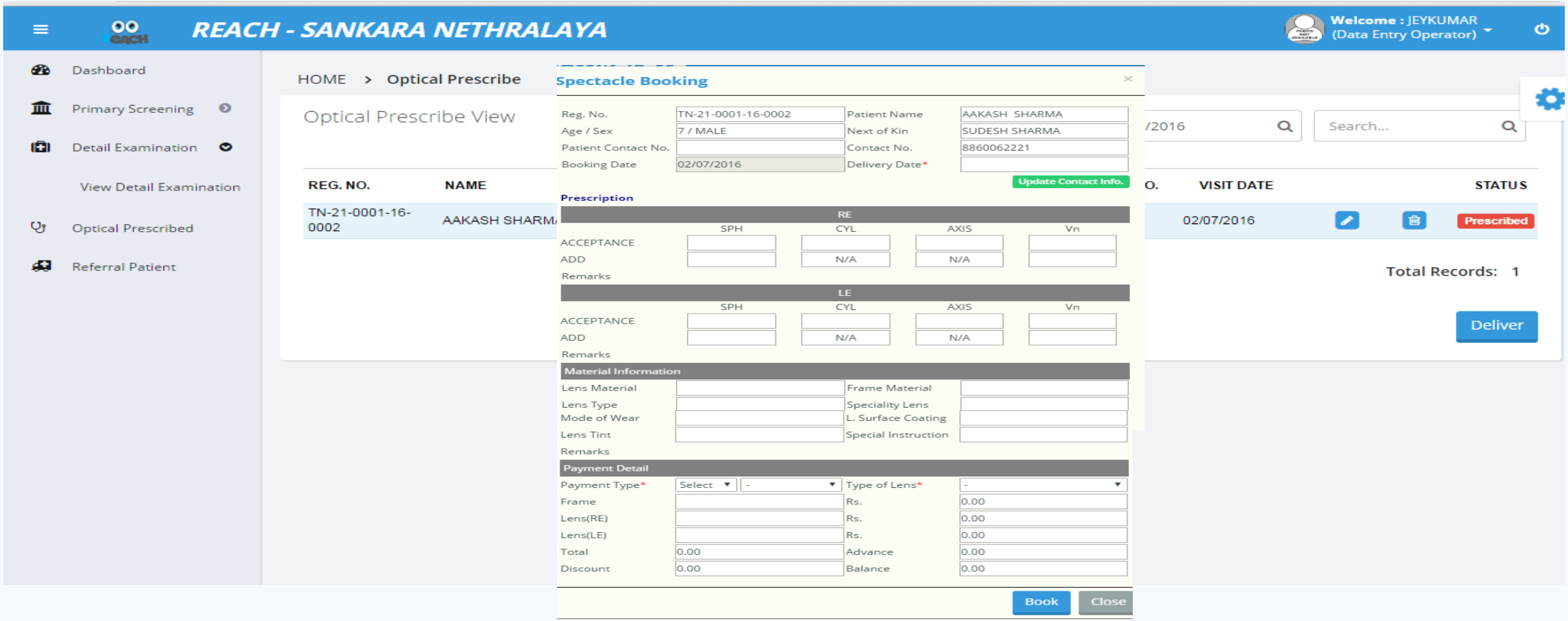
- All REACH staff receive training on this tool and are using it to manage data at diverse points of activity within the program.

(Qatar Creating Vision, 2016)

PRIMARY SCREENING IN REACHSOFT



SPECTACLE BOOKING IN REACHSOFT



SUMMARY REPORT IN REACHSOFT

Project Activities Summary Report | Select Partner | **Total Records: 6**

Till Date | Select Month | October | 2016 | Search | Export to Excel

Partner Name	# Children underwent Primary Screening (Target)	# Children underwent Primary Screening	% Children absent for Primary Screening	# Children examined during Secondary Evaluation	# Total screening done on Children	# Spectacle Prescribed (Target)	# Spectacle Prescribed	# Spectacles Delivered	# Children referred to partner hospital	# Surgeries performed (Target)	# Surgeries Performed
ARAVIND EYE HOSPITAL	40000	27928	5%	1782	29710	2000	552	161	73	0	0
PBMAS H V DESAI EYE HOSPITAL	35000	26038	11%	2249	28287	1750	832	401	97	0	0
LITTLE FLOWER HOSPITAL RESEARCH CENTRE	29667	14616	10%	515	15131	1483	109	86	138	0	0
SANKARA NETHRALAYA	26001	4387	22%	374	4761	1301	153	0	0	0	0
SADGURU NETRA CHIKITSALAYA	40000	23698	34%	1575	25273	2000	643	641	387	0	0
VIVEKANANDA MISSION ASRAM NETRA NIRAMAY NIKETAN	42500	21169	40%	728	21897	2125	338	101	78	0	0
Total :-	**213168**	**117836**	**20%**	**7223**	**125059**	**10659**	**2627**	**1390**	**773**	**0**	**0**

Before REACHSoft, students [interns] would be up late after the camps entering data into Excel and students were unhappy. Afterwards we did direct entry into Excel at the school [that was being screened]. But [between] every stage there was no link [...], it was still manual. Now REACHSoft allows this to be streamlined and automatically done. REACHSoft has helped us do a better job in those aspects. So those small things have made life much simpler."

- Chennai

3.
PROJECT OVERVIEW

Objectives and questions investigated as part of the SIPA project

PROJECT OBJECTIVES

1. **Document the implementation of REACH**, including the context in which it is being implemented, focusing on three hospital partners:
    - H. V. Desai Eye Hospital in Pune
    - Sankara Nethralaya in Chennai
    - Aravind Eye Hospital in Madurai
2. Identify **current and potential innovations** within the REACH program, with a specific emphasis on REACHSoft
3. Describe both the **positive or negative outcomes** resulting from these innovations
4. Recommend ways to leverage these innovations to **improve REACH implementation**

Appendix 01. Executive Summary

EVALUATION QUESTIONS

In order to complete project objectives, the SIPA team aimed to answer:

How has REACH been implemented in three project sites (Pune, Chennai, Madurai) in India?

- What are contextual variables that are critical to its implementation?
- What is the role of REACHSoft within the REACH Program?
- What are preliminary short-term outcomes, intended and unintended, observed by staff as having resulted from the implementation of REACH since 2016?
- In terms of implementation, what works, what doesn't work, and why? In particular, what factors have been critical to successful implementation and/or acted as barriers?
- What are the commonalities, deviations and innovations in REACH implementation across the different sites? What is the reason for these, and what has resulted from these?

LEARNING QUESTIONS

In addition to the evaluation questions, the SIPA team set out to learn:

- What are the variables that Orbis should consider to sustain, expand, and/or improve REACH within India?
  - What areas for further exploration should Orbis consider from other country programs beyond India to improve outcomes?
  - Where is there need to address barriers or mitigate negative outcomes of REACH in India?

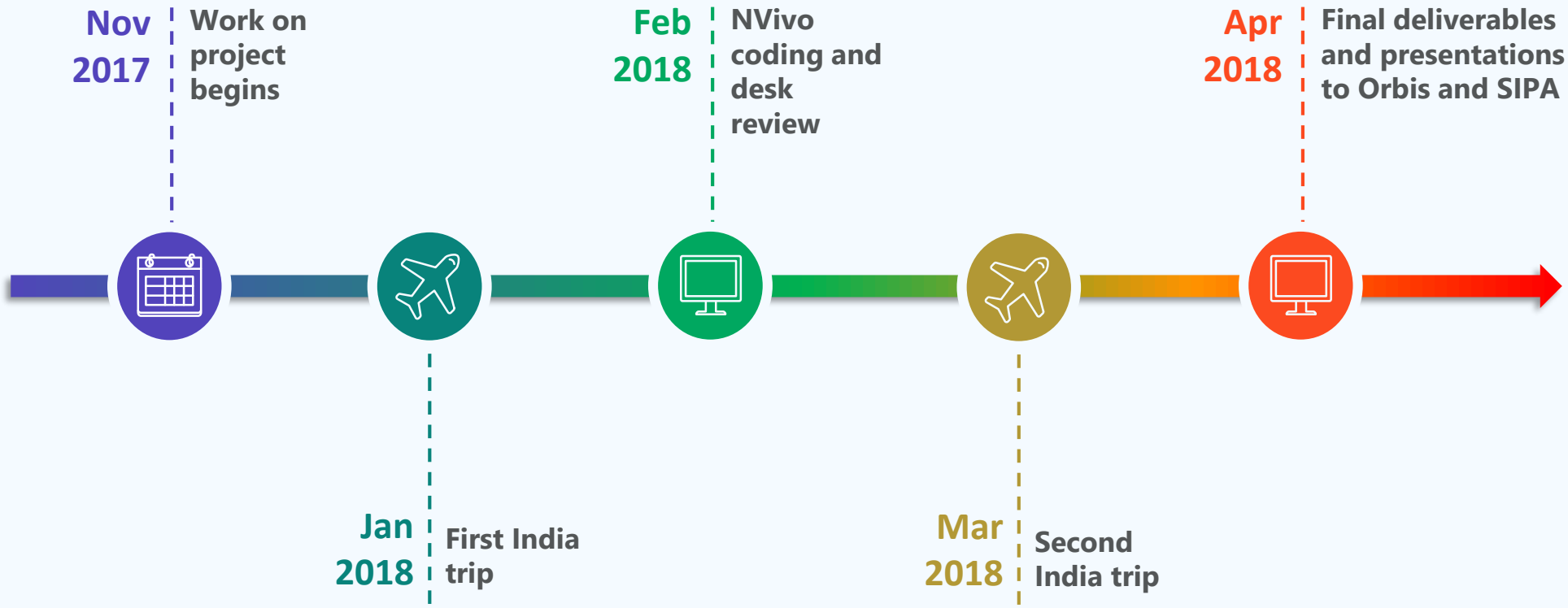
- What can Orbis learn from other organizations working in eHealth innovations, and where are there potential ways to incorporate these learnings in the Indian REACH and REACHSoft context?

Throughout the project, evaluation and learning questions changed incrementally as the team learned more about the program and the interconnected nature of REACH and REACHSoft.

4. TIMELINE

Key dates of the SIPA project

TIMELINE



Appendix 02. SIPA Trip Photos

5. METHODOLOGY

Individual field interviews and
Most Significant Change Light

PROJECT METHODOLOGY

The project was implemented in five main phases:

1. Preliminary desk review and instrument development for **field interviews**
2. **Field interviews** to scope the current state of REACH (January trip)
3. Documentation: qualitative analysis of data from **field interviews**, and instrument development for the implementation of the **Most Significant Change Light** method
4. Implementation of the **Most Significant Change Light** method in Pune, and review of learnings with Orbis Staff in the Delhi Office (March trip)
5. Analysis of accumulated qualitative data and report development

FIELD INTERVIEWS

Main Objective	The current state of REACH activities and the context of the program's implementation	**Outputs**
Method	**Individual interviews in the field** Interview notes were processed using a qualitative data analysis software. For this purpose, a codebook considering the key topics of the evaluations questions was developed. The analysis was carried out by and across the three researched locations: Pune, Chennai, Madurai.	Qualitative data to answer the evaluation questions

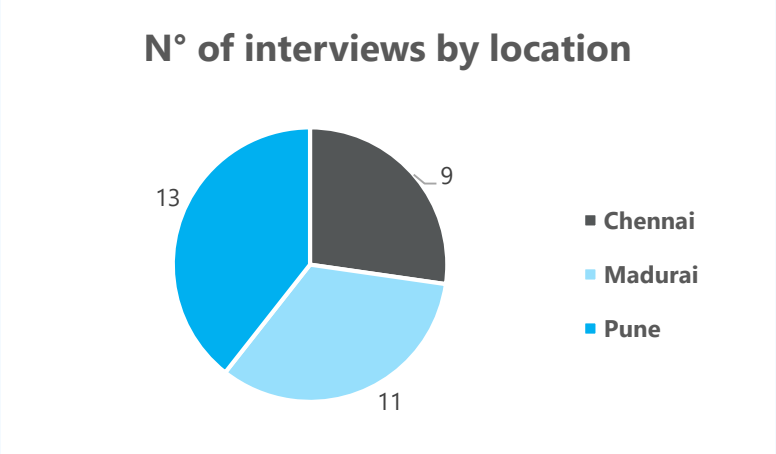
Appendix 03. January Interview Guide

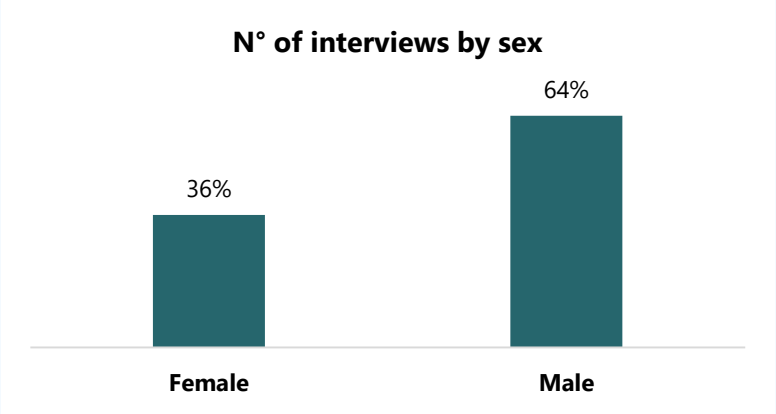
Appendix 04. Interview Analysis Codebook

FIELD INTERVIEWS

33

interviews





- Clinical Coordinator
- Community Outreach
- Community Worker
- District Coordinator
- Hospital Director
- Intern
- IT Support
- Ophtamologist
- Optical Director
- Optometrist
- Outreach Coordinator
- Pediatric Director
- Principal
- Project Manager
- Referral Coordinator
- Refractive Error Specialist
- Social Worker
- Teacher
- Vision Screener

FIELD INTERVIEWS

- **Location:** Chennai, Madurai, Pune
- **Date:** January 3-14, 2018
- **Interviewees:** REACH stakeholders

MOST SIGNIFICANT CHANGE (MSC) LIGHT

Main Objective	Explore the potential and feasibility of using MSC method to monitor and analyze the impact of REACH.	**Outputs**
Method	**Most Significant Change (MSC)** is a qualitative data collection method in which stories are gathered from an intervention's participants. Due to methodological and logistical limitations, the simplified version **MSC Light** was piloted. MSC Light is a simplified version of MSC, which usually involves all hierarchies of an organization.	Lessons and considerations for further usage of MSC methods Stories that illustrate the main outcomes participants identify from REACH.

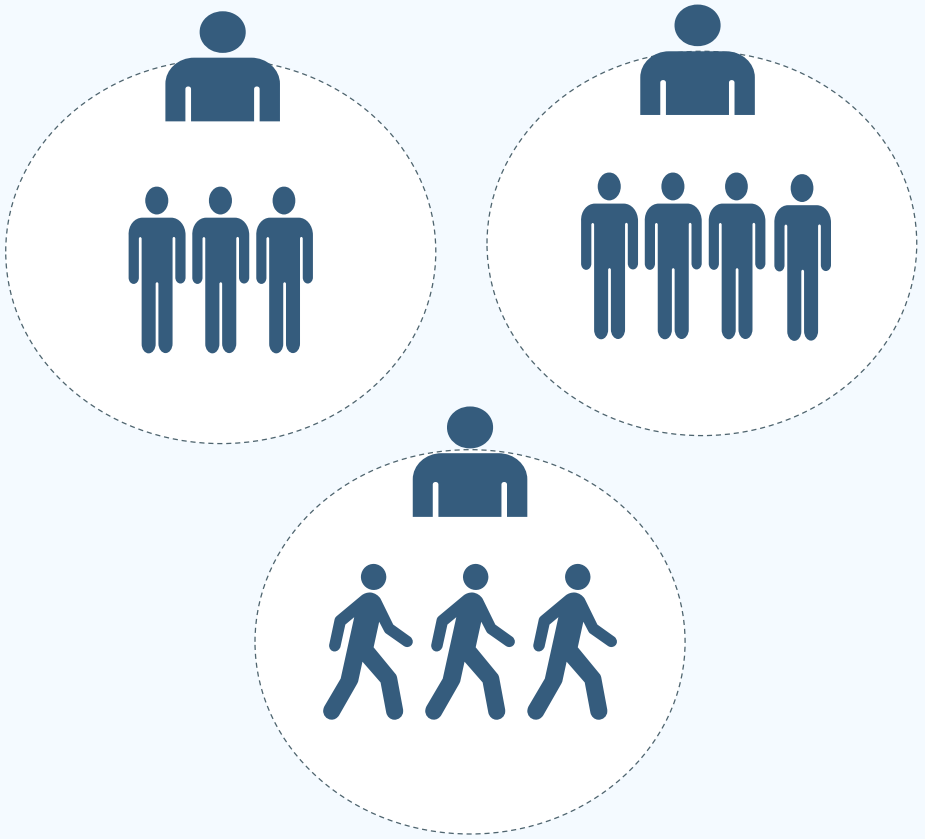
Appendix 05. Most Significant Change Light Memo

(NGO-IDEAs, 2012)

MSC LIGHT

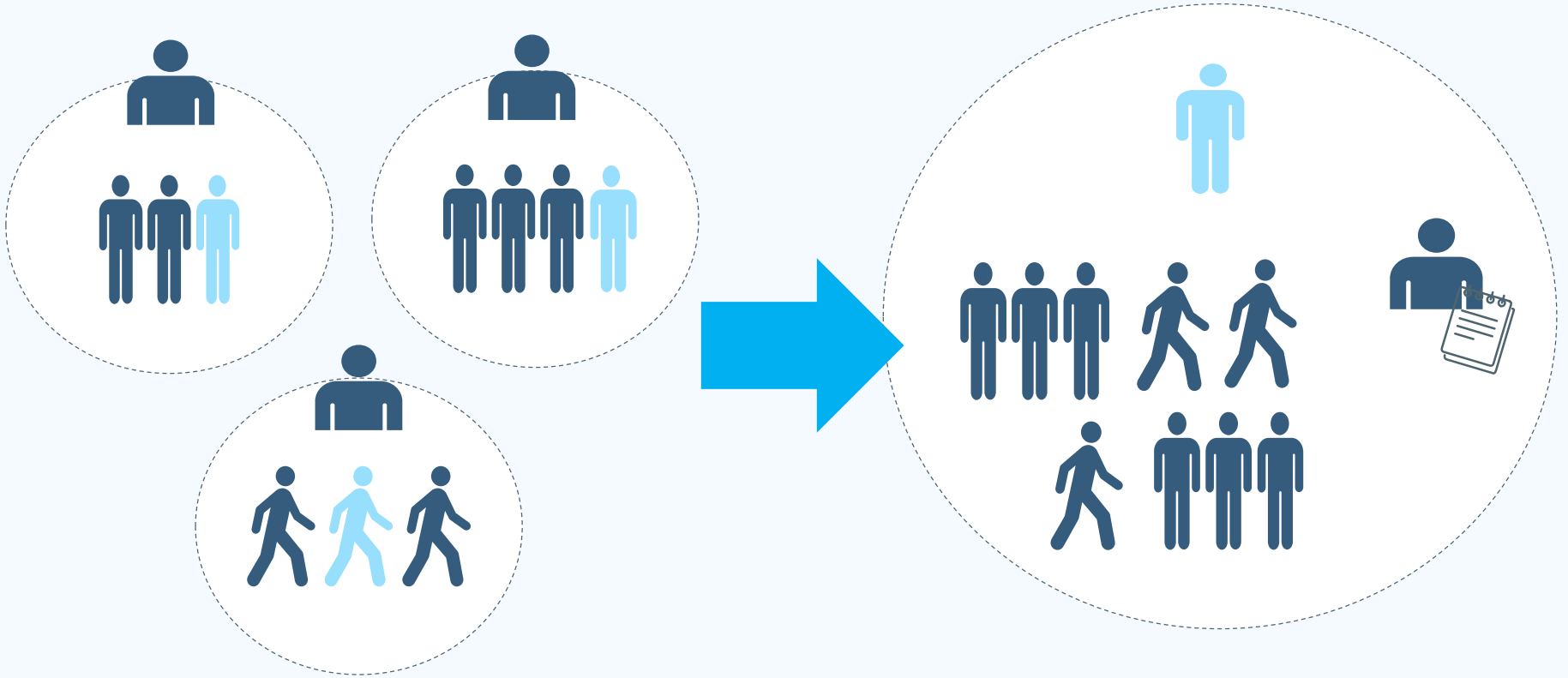
Sub-group discussion prompts:

1. Your child/student **before** they received spectacles
2. Your child/student **after** they received spectacles
3. The biggest or **most significant change** seen in your child/student as a result of receiving spectacles



MSC LIGHT

4. Selection of MSC stories and group share out

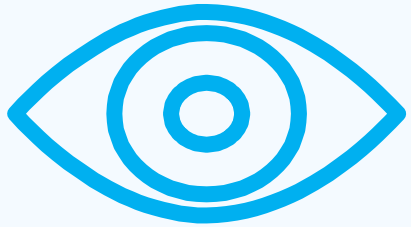


MSC LIGHT SESSION

- **Location:** BPV School, Bhuinj, Satara District (Pune)
- **Date:** March 13, 2018
- **Duration:** 45 minutes to 1 hour per session
- **People:** 3 facilitators and 21 participants total over 2 sessions (parents and teachers)

SECTION B

MAIN FINDINGS

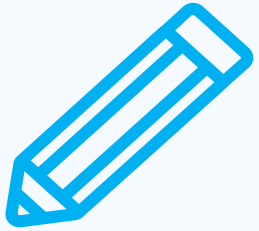


PERCEIVED POSITIVE OUTCOMES

Interviewed staff, parents and teachers agree that the provision of spectacles has improved children's eye health, which *could be* having positive effects on their educational experience.

FIDELITY TO THE MODEL

Staff understands and faithfully implements the REACH protocol.
REACHSoft is consistently used across the sites.



ADAPTABILITY AND FLEXIBILITY IN IMPLEMENTATION

Specific context and hospital partners' own human and social capital has led to differences in the strategies used to implement REACH at each site.

RESOURCE-INTENSIVE MODEL

REACH requires extensive human and financial resources to provide quality screenings and treatment. In response, partnerships have been established to obtain resources free-of-cost .

LOGISTICAL CHALLENGES

Limitations in physical and digital connectivity within and among districts make the implementation of REACH complex. The involvement of teachers and parents has been key to overcoming these challenges.

REFERRAL CHALLENGES

Families face constraints that hinder compliance with referrals and there is limited integration between hospital records and REACHSoft that allows effective follow-up.

LIMITED LEARNING ACROSS PARTNERS

Individual practices and research done by hospital partners is rarely shared among sites. There is a potential for learning that is yet to be tapped into.

ACTIVE RELATIONSHIP BETWEEN ORBIS INDIA AND HOSPITAL PARTNERS

There is fluid coordination among Orbis India and its hospital partners. Hospital, corporate, and school partners have a positive perception of Orbis and REACH.

SECTION C

GENERAL STATE OF REACH

1. GOVERNMENT PROGRAMS

Co-existence of REACH and other eye screening programs

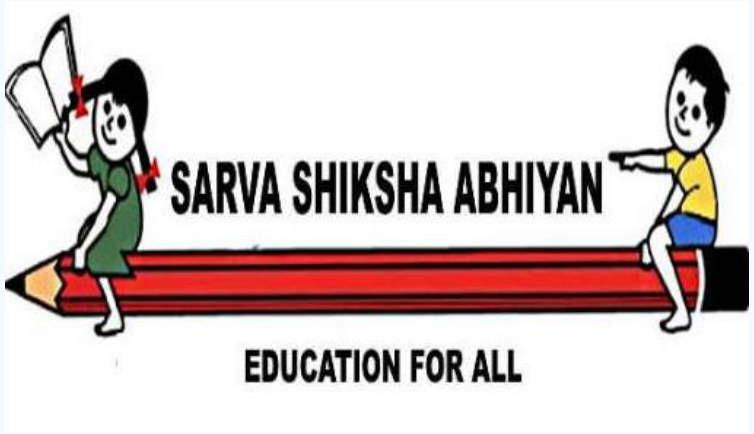
NATIONAL PROGRAM FOR CONTROL OF BLINDNESS

- In 1976, the Indian government established the National Program for Control of Blindness (NPCB).
- In 1994, after the implementation of a pilot in 5 districts, the School Eye Screening (SES) program was integrated as part of the NPCB.
- SES is carried out by the District Health Societies (DHS).

(National Programme for Control of Blindness, 2018); (Jose, 2009); (Department of Health & Family Welfare, 2016)

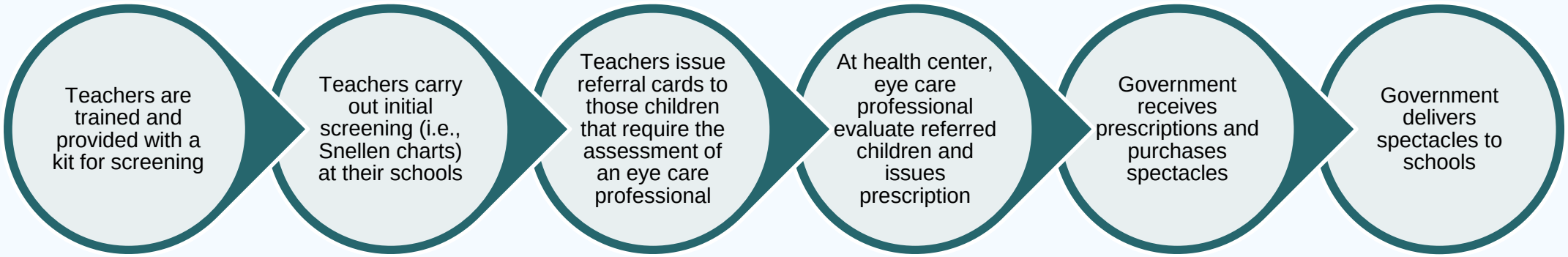
SARVA SHIKSHA ABHIYAN

- Since 2000-2001, the Indian government has been operating Sarva Shiksha Abhiyan (SSA), its flagship elementary education program.
- SSA provides diverse interventions for universal access, retention, and improved quality of learning.
- Through SSA, the Education Department provides eye school screenings.



(Department of School Education & Literacy, 2018);
(VISION 2020: The Right to Sight – India, 2014)

TYPICAL GOVERNMENT SCHOOL SCREENING PROCESS



MAIN DIFFERENCES WITH REACH

- Teachers conduct screenings.
- Spectacles are purchased in bulk by the government.
- The process flow ends with spectacle delivery.
- Limited service is provided to clusters of schools with fewer students.

(VISION 2020: The Right to Sight – India, 2014).

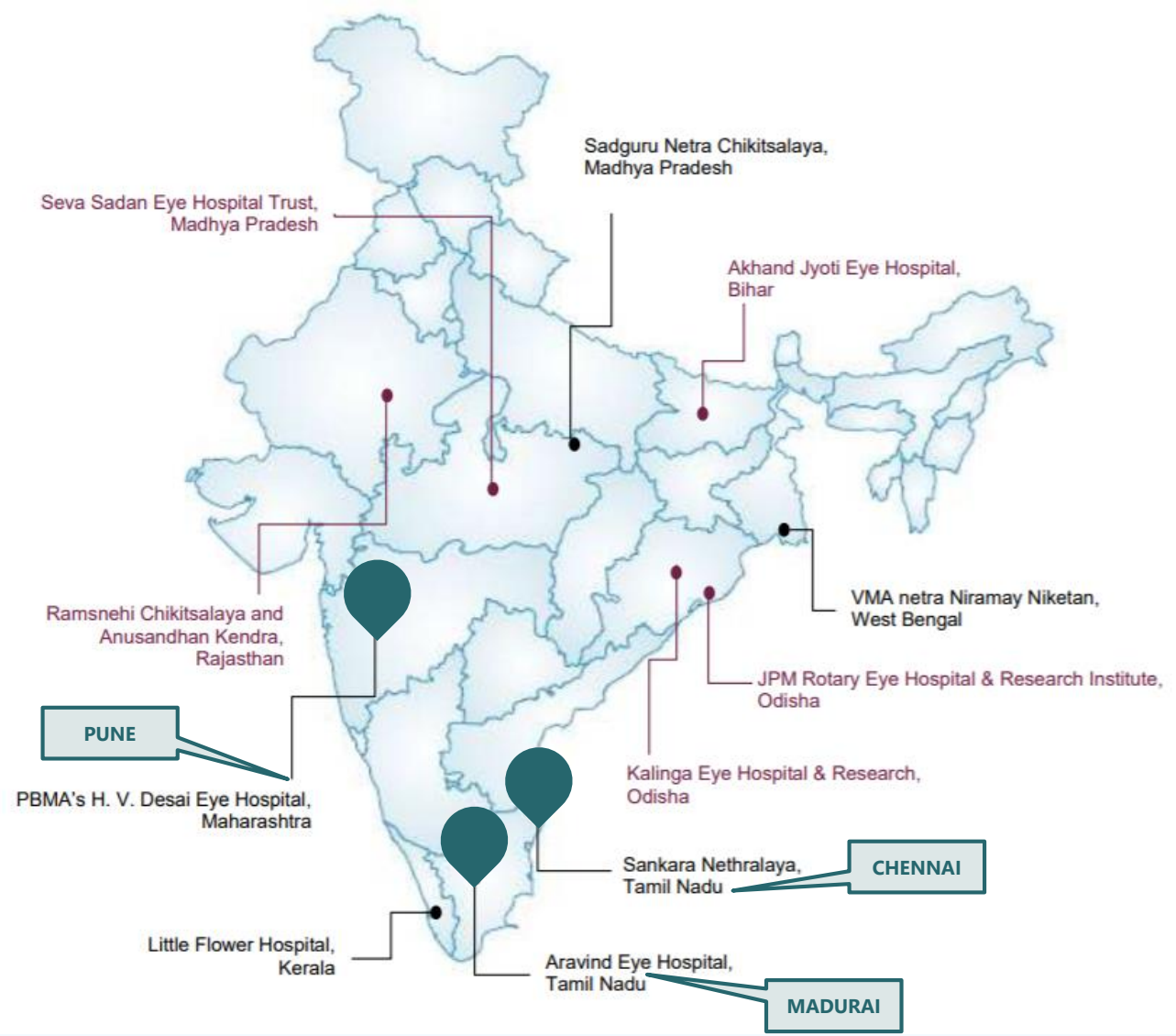
2. IMPLEMENTATION CONTEXT

Local conditions affecting the implementation of REACH

CONTEXTUAL FACTORS

Particularities of India and the specific characteristics of each of the assessed locations (e.g. geography and weather) shape the way REACH has been implemented. Moreover, the presence of different stakeholders in each location has influenced the partnerships REACH has been able to develop.

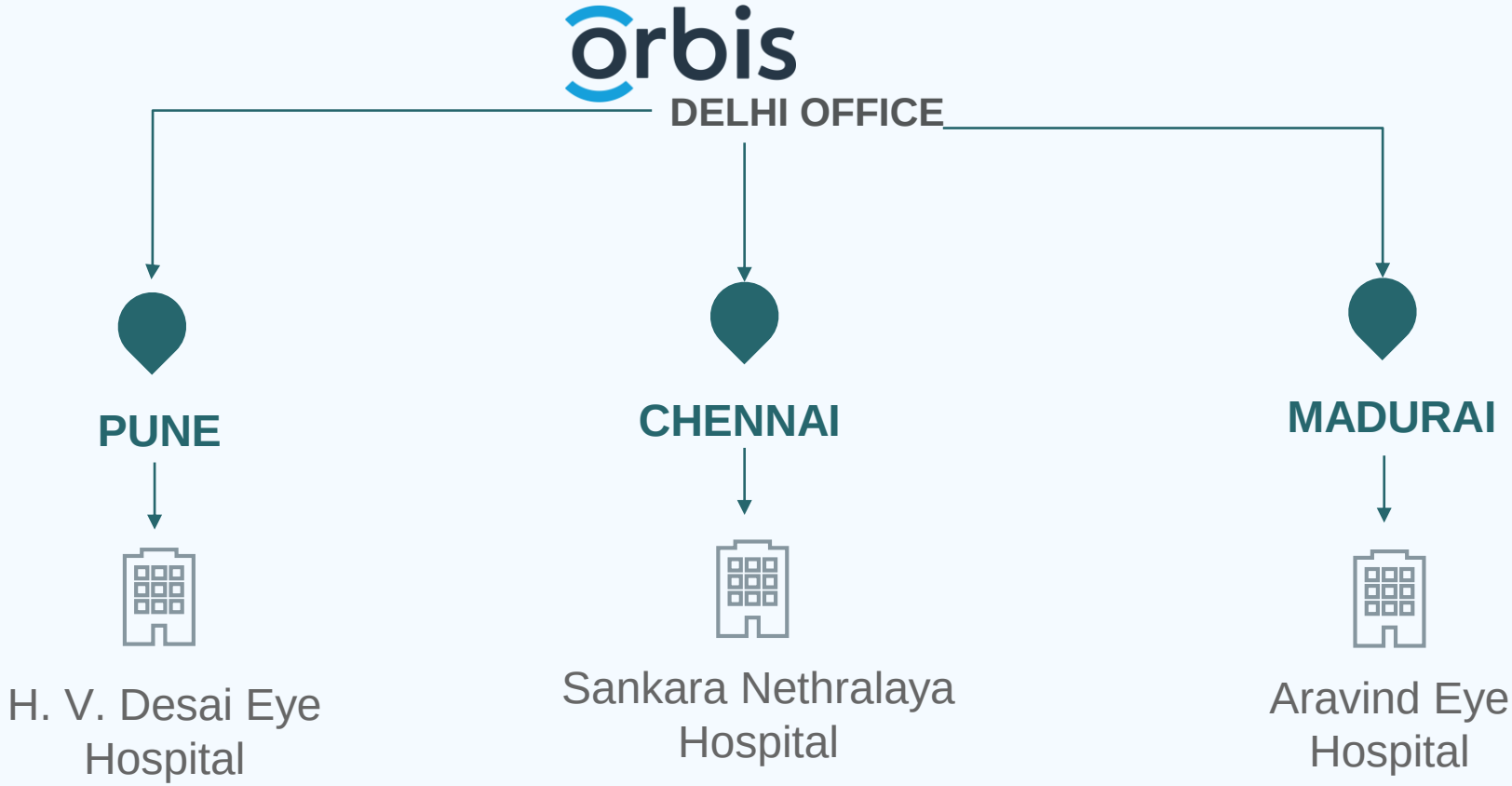
REACH IN INDIA



- Long distances
- Limited transportation options
- Predominantly rural areas
- Existence of previous government programs

(Orbis International, 2018)

HOSPITAL PARTNERS PER SITE



PUNE: MAPRO'S ACTIVE ROLE

Founded in 1959, food and beverage processing company Mapro is a market leader in Western India.

Mapro undertakes a series of Corporate Social Responsibility (CSR) activities in Maharashtra.

Mapro founders have a close relationship with the hospital partner in Pune, HV Desai Hospital.

REACH

Mapro provides human resources, helps establish relationships with local authorities, and is currently building a secondary eye hospital for referrals and minor surgeries (scheduled for completion in late 2018).

(Mapro, 2018)

PUNE: LIONS CLUB HOSPITAL

The Lions Club of Poona Sarasbaug was founded in 1977 and is a branch of Lions Club International.

Every year, the club organizes Free Eye Check-Up Camps to offer eye examinations and distribute spectacles.

REACH's clinical coordinator in Pune is an advisor for Lions.

REACH

Although there is no formal agreement between the two, the Lions Club Hospital supports REACH with simple screenings for free. When the Lions Hospital location is more convenient, referrals are made there.

(Lions Club of Poona Sarasbaug Charitable Trust, 2018)

CHENNAI: ELITE SCHOOL OF OPTOMETRY (ESO)

ESO is the first college of optometry in India to offer a four-year Bachelor of Science in Optometry.

The college is run by Sankara Nethralaya, a tertiary eye care hospital, in collaboration with SASTRA University.

REACH

ESO students and staff conduct REACH screening. Lead ESO optometrists are in charge of coordinating training for REACH staff. Sankara Nethralaya is the partner hospital.

(Elite School of Optometry, 2018)

CHENNAI: DISRUPTIONS

News » City News » Chennai News » Rain: Schools in Chennai, Kancheepuram and Tiruvallur districts to remain closed on Monday

Rain: Schools in Chennai, Kancheepuram and Tiruvallur districts to remain closed on Monday

Chennai rains: Tamil Nadu government orders shut down of schools, colleges; heavy downpour predicted in 9 districts

Chennai rains: Tamil Nadu government has directed schools and colleges to shut down after rains has been lashing parts of the state. It has been learnt that heavy downpour is predicted in 9 districts today.

Chennai Shuts Schools, Issues Warning as Heavy Rains Lash City, Weatherman Predicts More Rain

Owing to a cyclone formation over the Bay of Bengal, the weather department has issued an alert for the coastal districts of heavy rainfall.

Poornima Murali | CNN-News18 | Updated:October 30, 2017, 6:08 PM IST

REACH

Natural disasters and political disruptions have led to the frequent cancellation of classes. As a result, delays in the academic calendar make school authorities less willing to participate in in eye examinations.

(B Sivakumar, 2017); (FE Online, 2017); (Poornima Murali, 2017)

MADURAI: ARAVIND'S SISTERS

Aravind Eye Hospital implements a program known as Aravind's to train women from rural areas to work in the hospital:

- **Years 1-2:** Women are trained for the department they will work in and receive a stipend.
- **Year 3:** Women are hired in the hospital's corresponding department.
- **After Year 3:** Women decide to leave or continue working at the hospital.

REACH

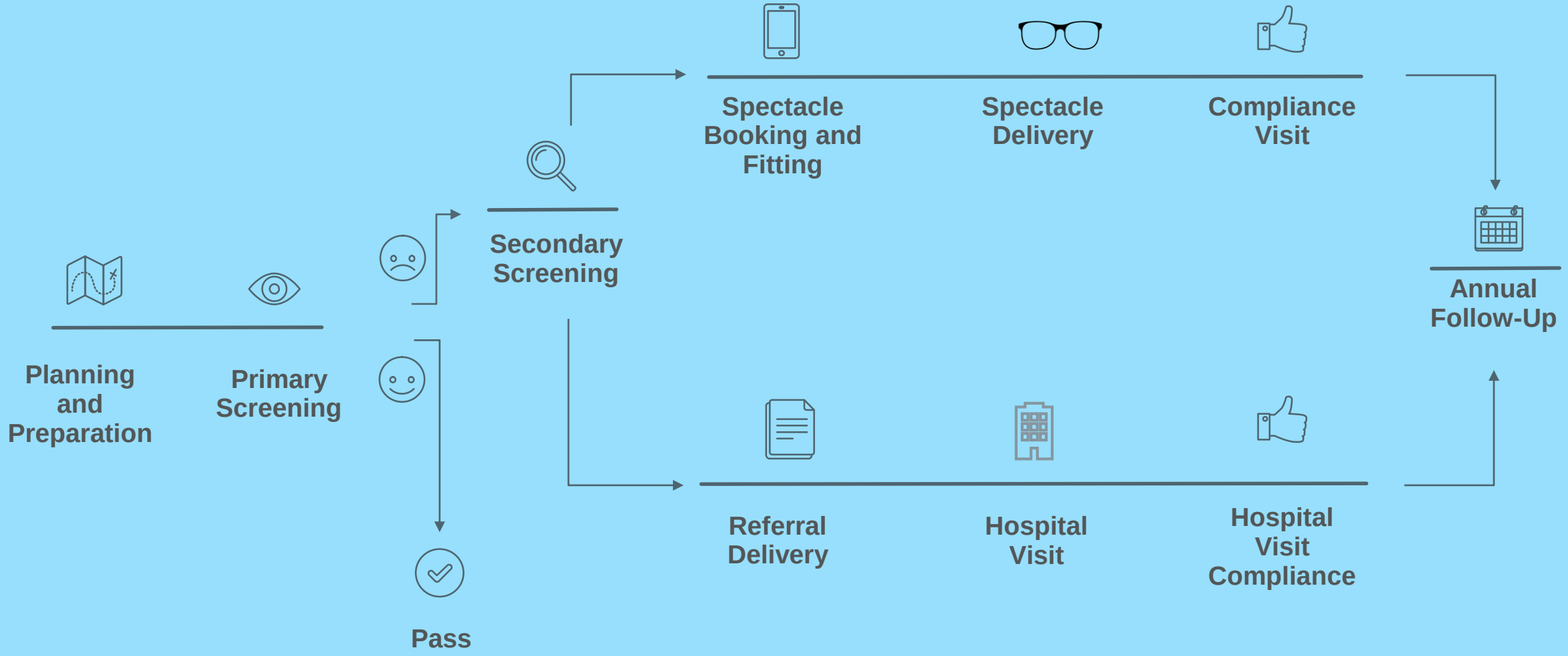
Women from the training program ("sisters") support REACH activities in secondary screening.

(Harish Kilaru, 2014)

3.
GENERAL PROCESS FLOW

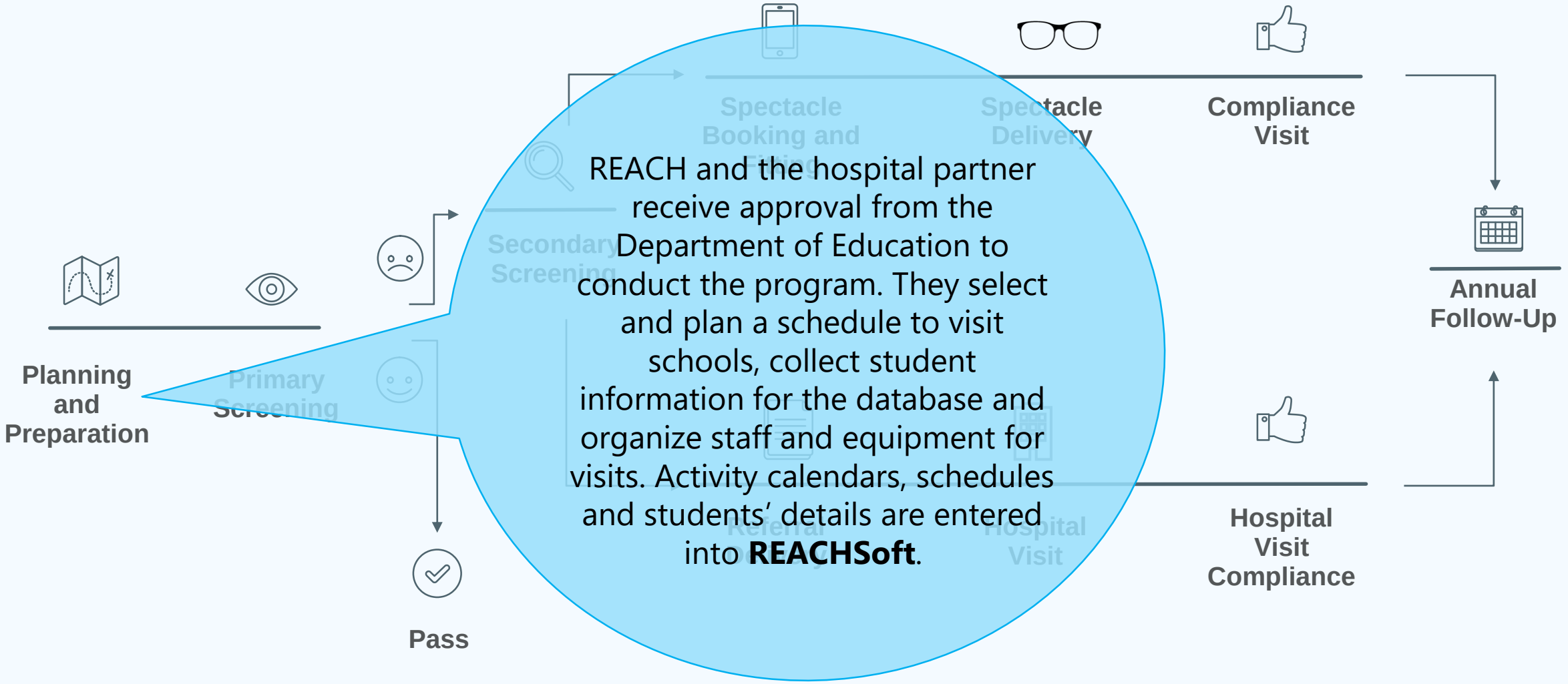
REACH protocol and commonalities across sites

GENERAL: REACH PROCESS FLOW



Appendix 06. General REACH Process Flow

GENERAL: REACH PROCESS FLOW



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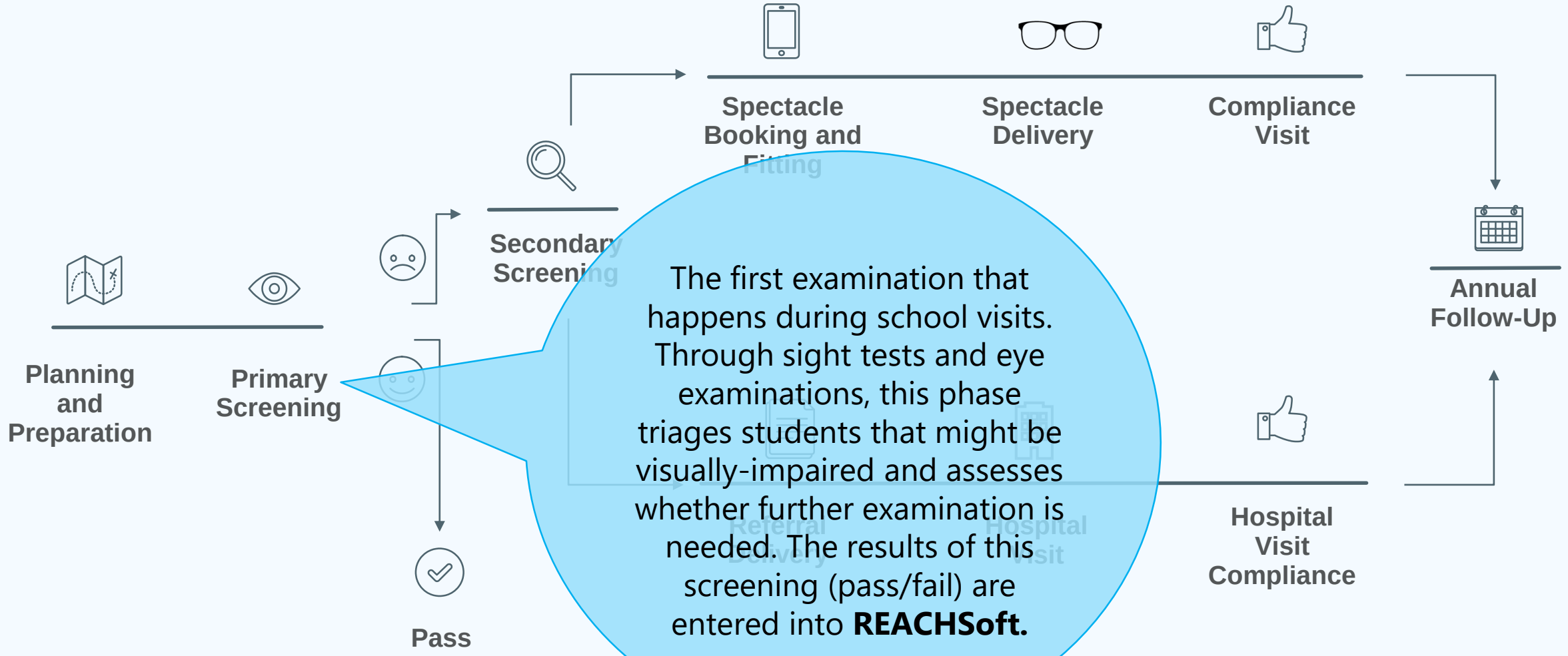

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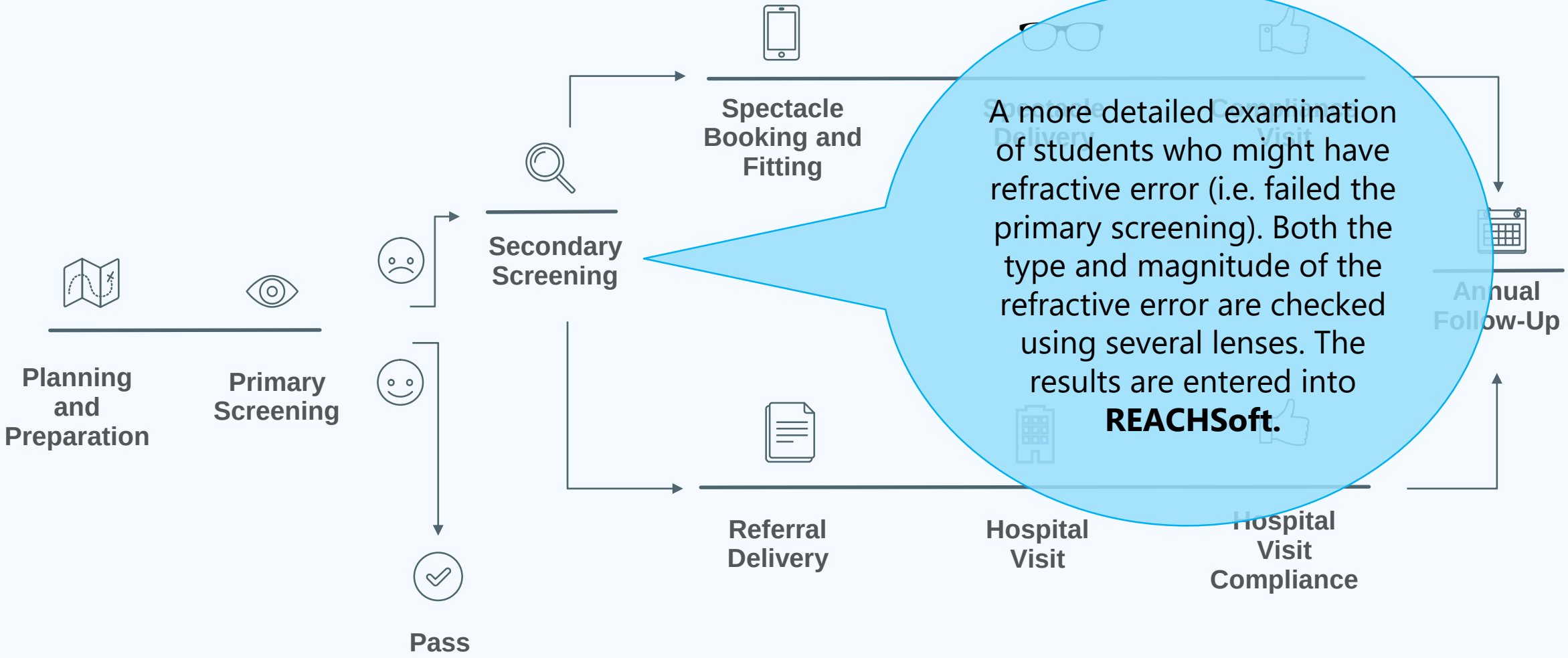

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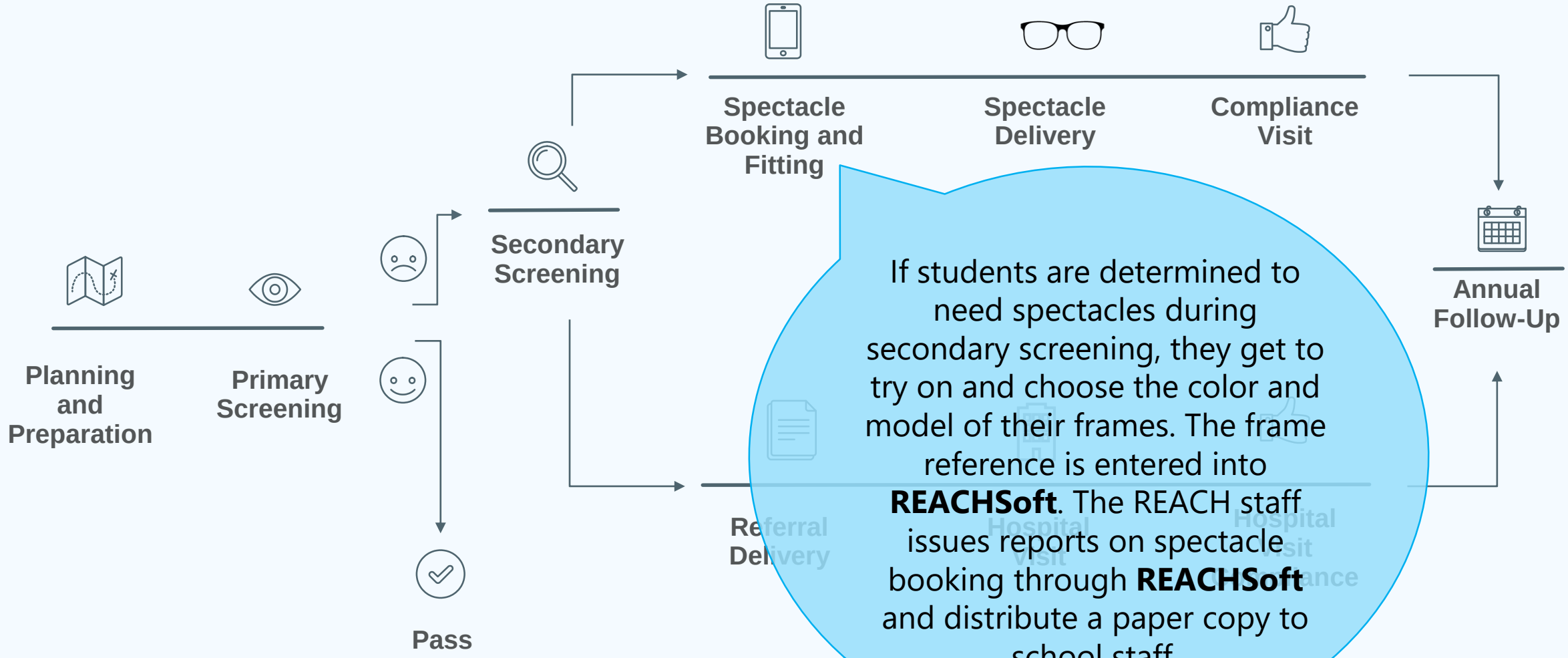

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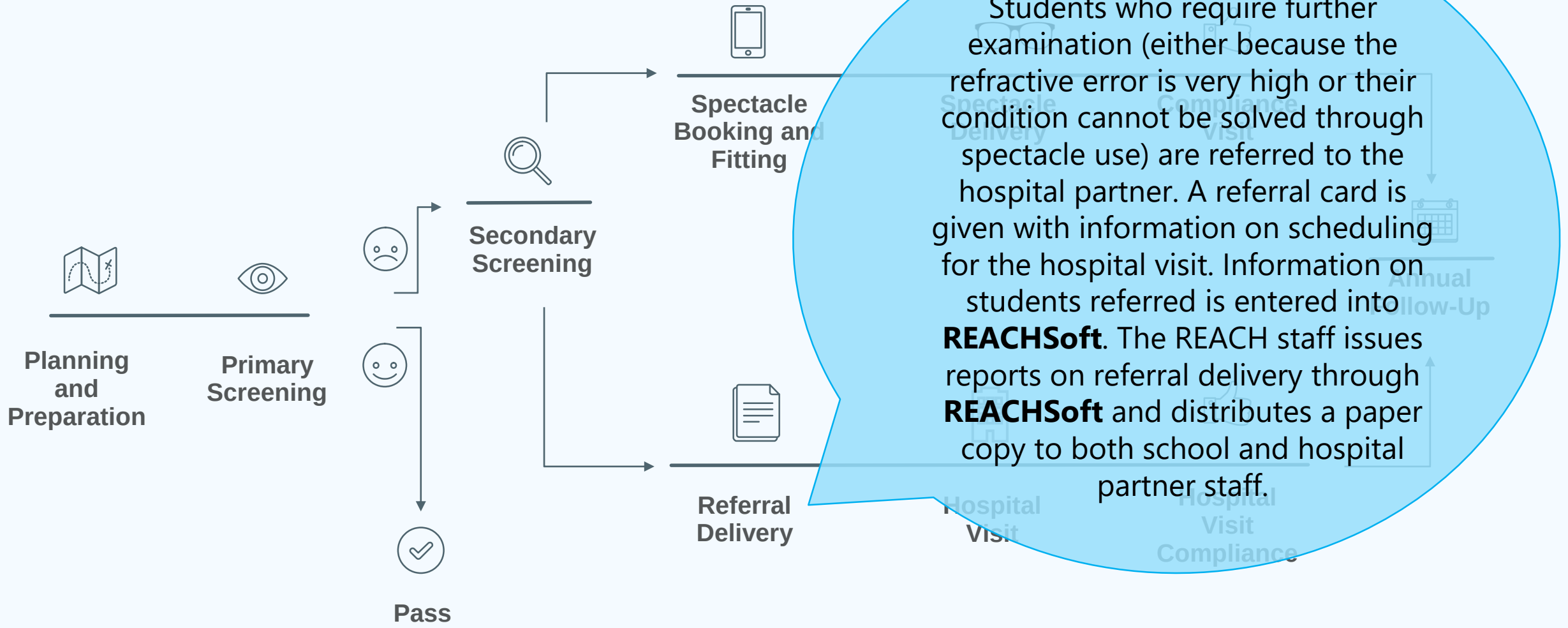
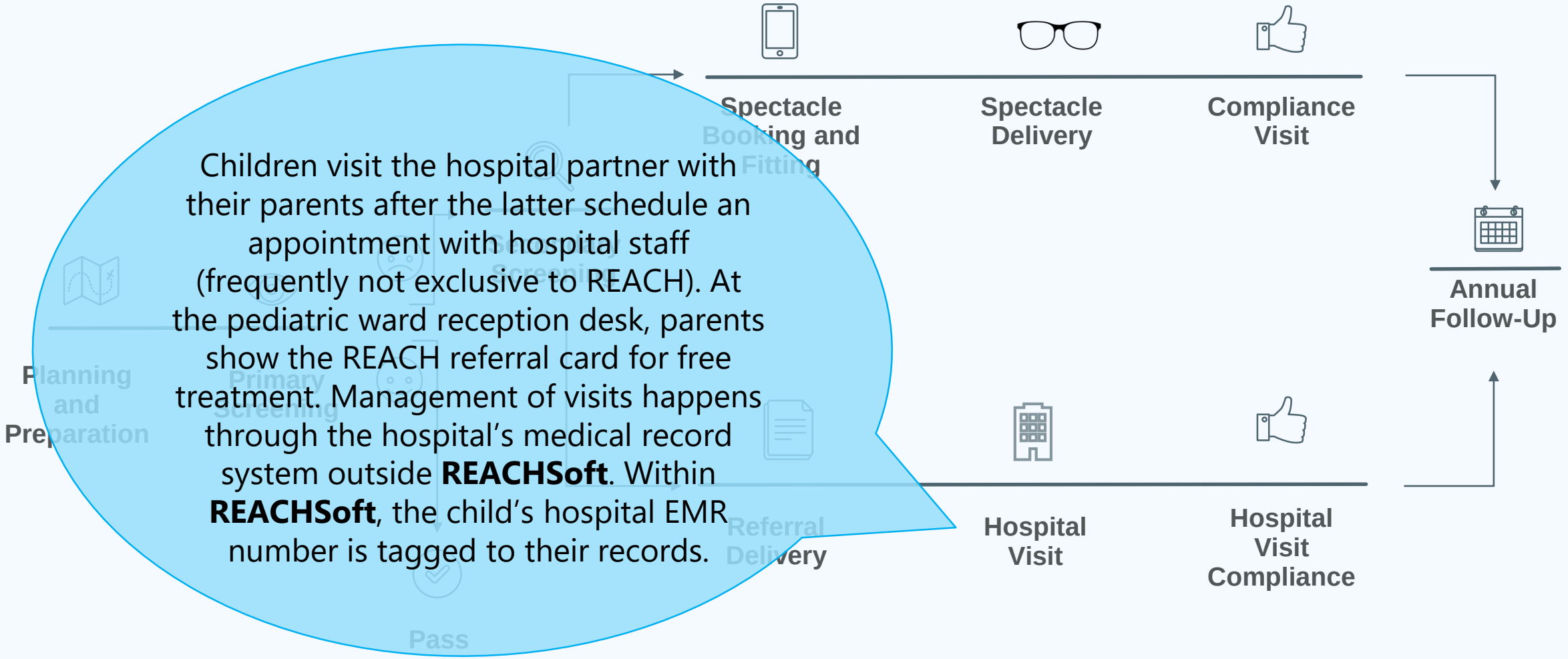


Students who require further examination (either because the refractive error is very high or their condition cannot be solved through spectacle use) are referred to the hospital partner. A referral card is given with information on scheduling for the hospital visit. Information on students referred is entered into **REACHSoft**. The REACH staff issues reports on referral delivery through **REACHSoft** and distributes a paper copy to both school and hospital partner staff.

Appendix 06. General REACH Process Flow

GENERAL: REACH PROCESS FLOW



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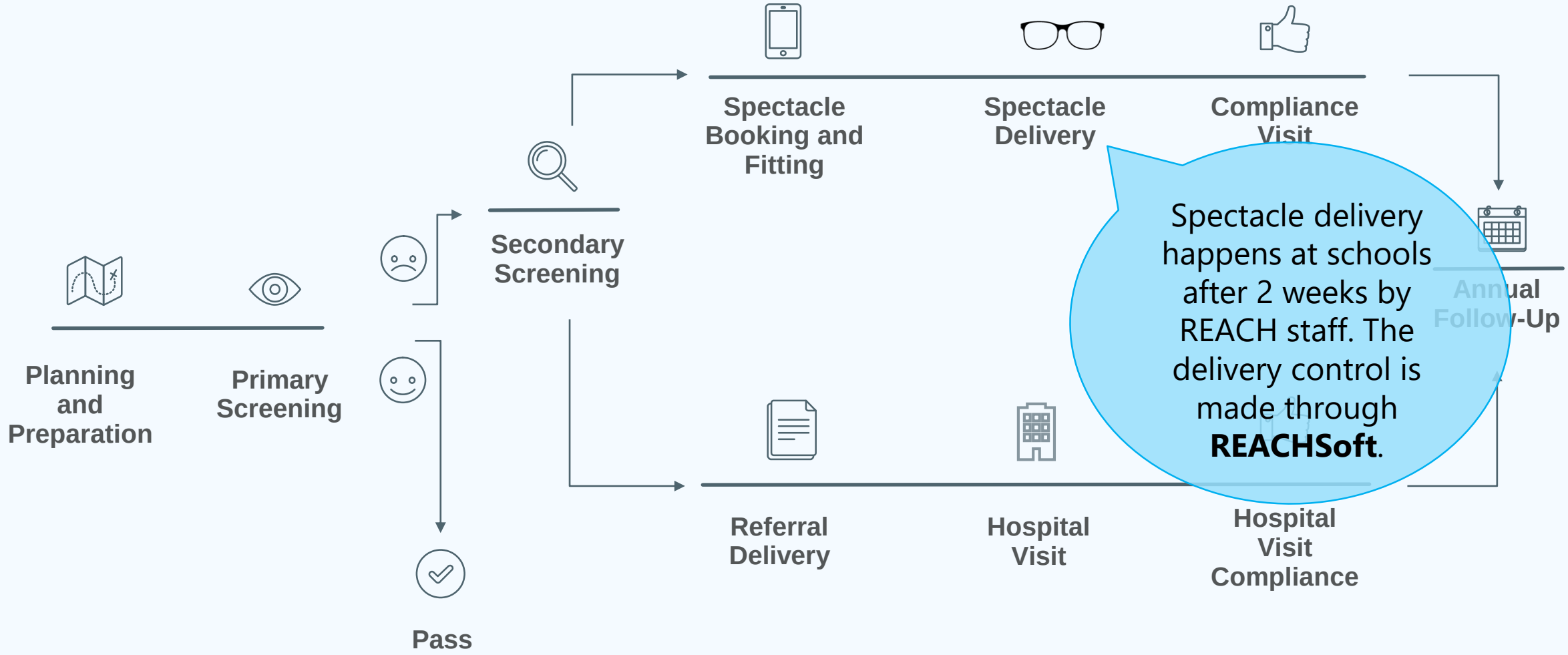
GENERAL: REACH PROCESS FLOW



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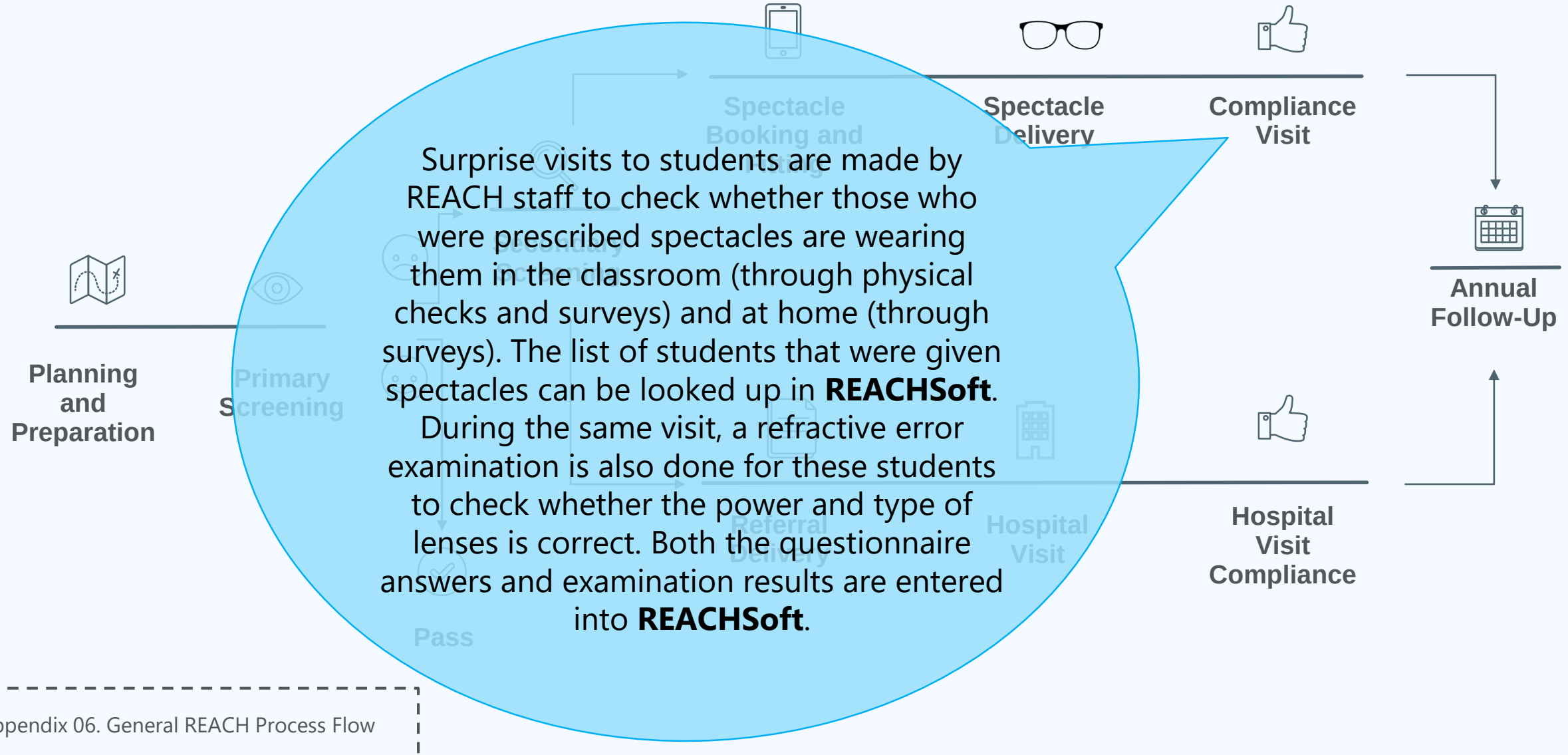

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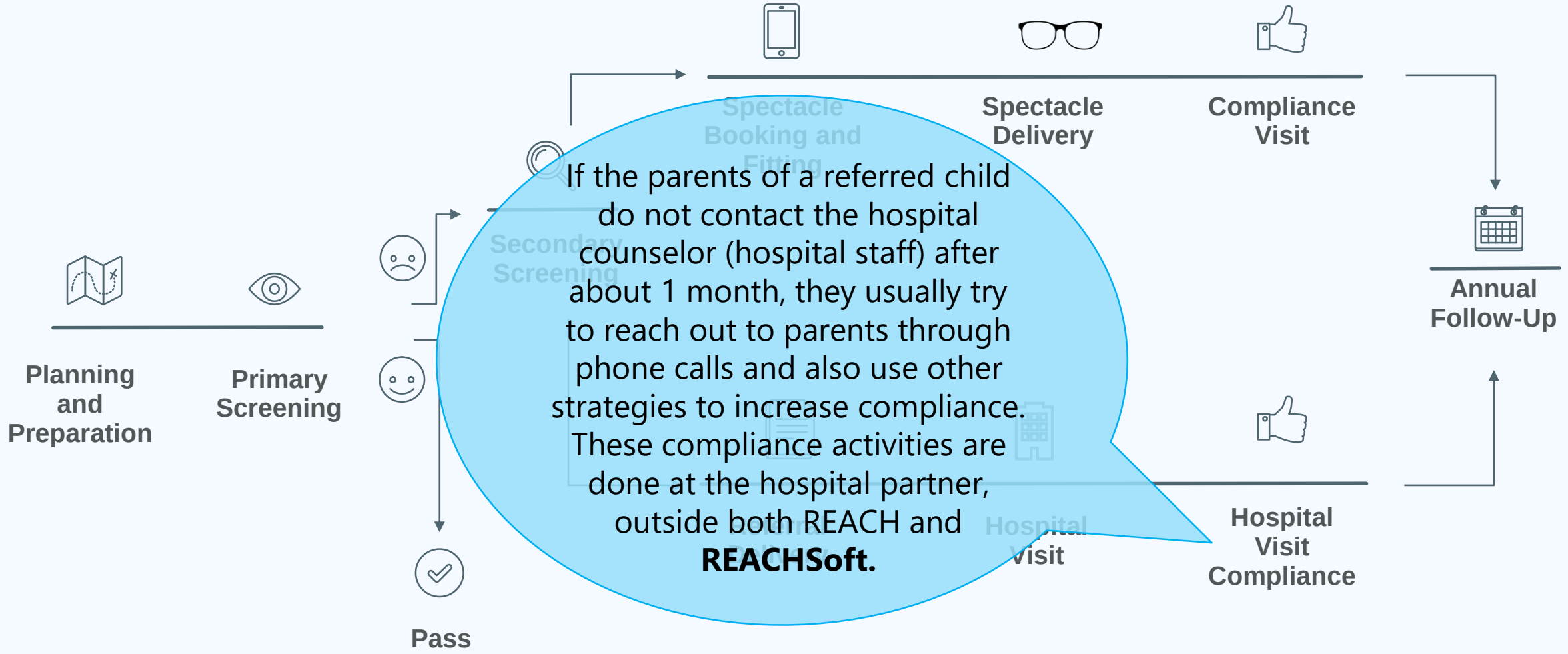

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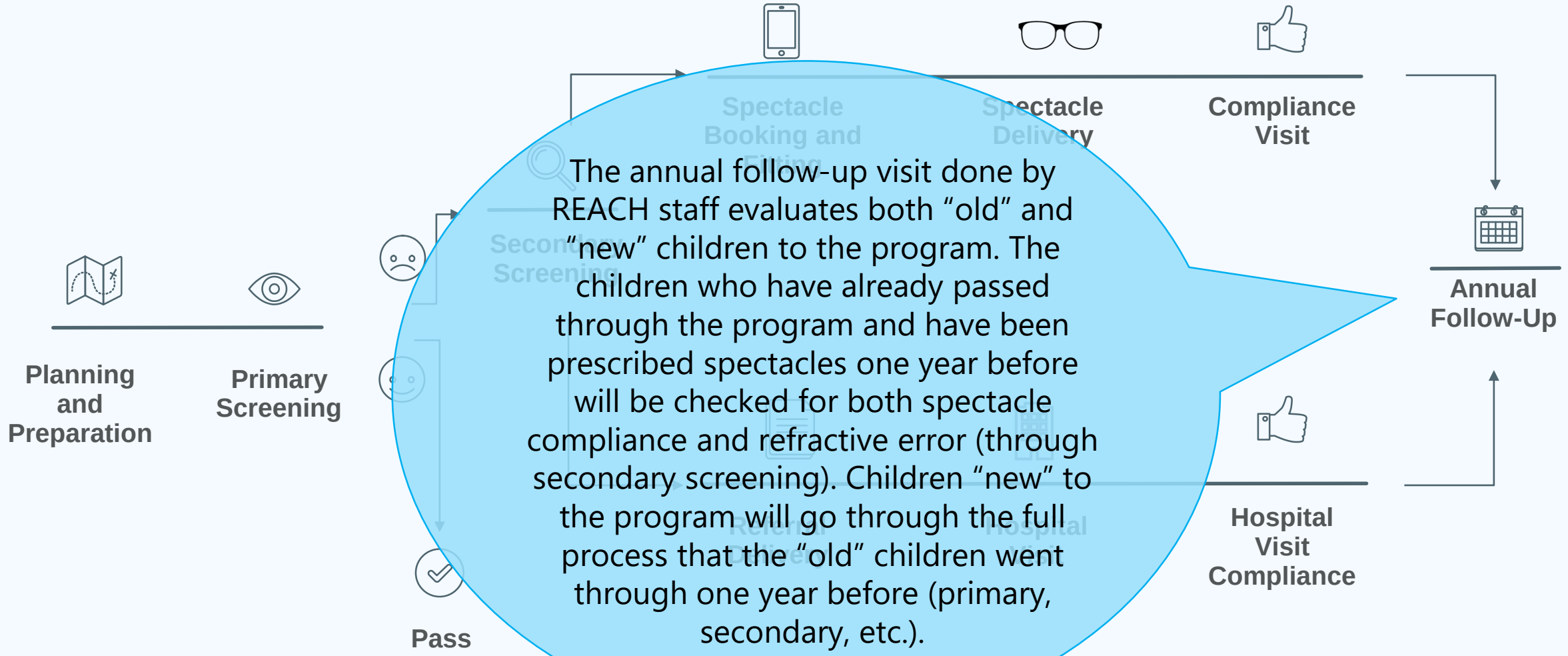
GENERAL: REACH PROCESS FLOW



Appendix 06. General REACH Process Flow

4. IMPLEMENTATION EFFECTIVENESS

What works well and what needs improvement in REACH and REACHSoft

GENERAL STATE OF REACH: IMPLEMENTATION EFFECTIVENESS

i) Strengths and weaknesses of REACH

STRENGTHS OF REACH

Program comprehensiveness

- **Expanded reach:** The program enables staff to reach more schools, many of which are first-time users. Students who were in clusters previously ignored by the government are now being covered by REACH. Partners are also seeing more referrals; for example, the Madurai team has reported a *five-fold increase* in patients at Aravind Hospital's low vision clinic.
- **Greater user choice and convenience:** Unlike the government program, students can choose from different frame styles, sizes, and colors, which both *reduces teasing and helps with compliance*.
- **Follow-up mechanism:** The program's follow-up aspect is *"unique";* REACH partners can know if students actually wear their spectacles and replace their spectacles if they break or are lost.
- **Quality of service:** Schools are often surprised by the *speed and efficiency* of the REACH program. Once they realize the seriousness of the process, they tend to comply. The clinical staff has more time with each student and can ask them questions.

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“There are too many NGOs doing check-ups and distributing material but not doing follow-ups. Thus, our follow-ups have been appreciated a lot. Now people want screenings to be done by us.

- Pune

STRENGTHS OF REACH (cont.)

Team dynamics

- **Large team:** Having a large team enables REACH staff to go to the schools to do primary and secondary screenings; before, all students had to go to the clinic for that purpose.

- **Well-defined roles:** Though human resource deployment varied across project sites, all members of each team had a well-defined role. Furthermore, there was high involvement at all levels; for example, in Chennai sometimes the principal of the partner optometry school participated in REACH.

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“There are many team members. From the top to bottom, every member participates in screenings – they call this aikya [“integrating together”].

- Chennai

STRENGTHS OF REACH (cont.)

Program flexibility and adaptability

Orbis allows for modification in the model so that it is flexible to each place; this has resulted in many interesting deviations and innovations (more on those later).

Close involvement and support from HQ

- **Regular visits:** Orbis staff from Delhi visit monthly to see if everything is working well; partners think they are very helpful in trying to find solutions to challenges.
- **Knowledge-sharing:** All 6 of the REACH partners come together every 3-4 months in Delhi at Orbis' invitation to share challenges and solutions. This provides a great opportunity to learn from each other.
- **Leadership:** REACH serves as an example; other institutions have already implemented one of their innovations (the illuminated pocket vision screener, IPVS).

STRENGTHS OF REACH (cont.)

Other strengths

- **Perceived social benefit:** REACH staff reported liking the program due to their ability to work on their own village or people's behalf.

- **Making allies out of teachers:** Some teachers saw the value of the program and responded by being very helpful. At one school in a village, a teacher used her own leave time to bring referred students to the hospital because their parents were unable to. Teachers have given feedback that what REACH does is completely different from other models.

WEAKNESSES OF REACH

Complex logistics

- **Program complexity:** The comprehensiveness of the program means it is also complex to implement. There are challenges at every step, including obtaining government approval, team scheduling, liaising with schools, conducting screenings, and referrals.
- **Coordination with schools:** One of the biggest logistical hurdles. Obtaining lists of student names from schools and scheduling screening dates are some of the most common challenges. Furthermore, there is high turnover among headmasters.
- **Distance from rural communities:** The further the distance a student's family lives from the base hospital, the more difficult it is to ensure compliance for referrals.
- **Program disruptions:** Especially in Chennai, screenings had to be canceled due to political disruptions or natural disasters like flooding and monsoons.

WEAKNESSES OF REACH (cont.)

Securing buy-in from stakeholders

- **Examination fatigue:** Schools often experience examination fatigue due to government health initiatives taking place such as their own vision screenings and MMR vaccination drives.

- **Difficulty of involving parents:** Some parents do not want their children to wear spectacles while others do not understand their child's eye problem or what is required of them. Some parents do not want to go to the hospital for referrals because that means taking time off work and/or traveling long distances. In addition, some parents associate free services with low quality.

WEAKNESSES OF REACH (cont.)

Resource-intensiveness

- **High costs:** REACH requires a large team, equipment such as tablets and laptops, and strong Internet connectivity. This brings up questions about its scalability and sustainability.

- **Human resources:** In each of the three project sites examined, the REACH team relies on a pool of unpaid labor to keep costs down (e.g. student vision ambassadors, Aravind women's program trainees, hospital interns).

Appendix 07. Strengths and Weaknesses of REACH

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Another problem is that REACH and REACHSoft is very dependent on social workers to function. This is not really realistic globally to have this support and is costly. There is also very high attrition of social workers here.

- Chennai

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For this project, we are overshooting our budget for spectacle distribution, for salaries, and now the hospital has to make provisions. I have to come with a plan and have to identify resources either internally or externally.

- Pune

WEAKNESSES OF REACH (cont.)

Other weaknesses

- **Challenging work conditions for staff:** REACH staff tend to be overburdened and work very long days. They must often travel to remote schools (up to 100km); since buses do not run very often, they must sometimes spend the night in the area. Salaries are also low.

- **Overlooked populations:** REACH currently does not examine students under 6 years of age because this requires specialists. In addition, the program does not currently extend to children who do not attend school.

- **No standard protocol for referrals:** There are currently no standard operating procedures in place to address if a student loses their referral card or does not show up to the hospital.

GENERAL STATE OF REACH: IMPLEMENTATION EFFECTIVENESS

b) Strengths and weaknesses of REACHSoft

STRENGTHS OF REACHSOFT

Streamlining of work

- **Simplified follow-up:** Because all the patient information is already in the software from the primary screening, clinical staff can be aware of problems for follow-up in the secondary screening; this information can easily be retrieved by REACH staff if there are any questions surrounding a child's referral at the hospital.
- **Saves time and paper**: A project lead can get an idea of the team's activities without asking them what they are doing and how many people they are reaching. Everything is paperless and can be checked remotely.
- **Simplified data analysis and monitoring:** Reports are easy to generate with REACHSoft and the Orbis India team can monitor what project sites are doing.

STRENGTHS OF REACHSOFT (cont.)

Ease of use

- **Intuitive interface**: The team members who conduct the screenings tend to be quite young (early 20s) and familiar with mobile phone and laptop applications, so they have had an easy time learning how to use REACHSoft.
- **Adaptability:** Some features were previously missing, but REACHSoft has been adapted and improved based on feedback from field staff.

Potential uses beyond program implementation

There is potential to apply data from REACHSoft towards advocacy purposes such as expanding government support for vision screenings in schools.

WEAKNESSES OF REACHSOFT

Lack of integration with hospital systems

REACHSoft is not linked up with hospital EMR systems. That means that a REACH staff member (usually the referrals coordinator) must receive the student at the hospital and manually enter that they are a REACH beneficiary in the student's EMR file. The process then has to be manually done again after the child's hospital visit to enter their diagnosis outcome back in REACHSoft for data completion. This has a resulted in a backlog of data to be entered into REACHSoft.

Lack of equipment

For practical purposes, the number of schools that can screened in a day is limited by the number of available tablets and laptops. For example, if there are only 10 laptops but more than 10 schools scheduled, schools must be cut that day because there are only 10 laptops. This is particularly a problem in locations with many interns available for work yet limited equipment.

WEAKNESSES OF REACHSOFT (cont.)

Juggling permissions

Not all of the data contained in REACHSoft can be shared or emailed with non-REACH staff such as interns or hospital workers. As a result, the data must be manually downloaded into Excel and a staff member emails the relevant portions to different team members.

Quality of training

Training on REACHSoft was not comprehensive enough to cover all the things that REACH staff members needed to know. This is also because the software was not fully developed at the time, but there might be an opportunity to standardize the training process.

WEAKNESSES OF REACHSOFT (cont.)

Lack of data utilization

Besides monthly and quarterly reporting, project teams are not necessarily utilizing the data in REACHSoft to do anything.

Lack of uptake with some existing features

Some staff members still prefer Excel over REACHSoft for activity planning. In the field, we saw that the HR and financial planning features were not really being used.

Appendix 08. Strengths and Weaknesses of REACHSoft

WEAKNESSES OF REACHSOFT (cont.)

Missing features

- **Checklists:** There are no features to help maintain records and do planning, such as checklists.
- **Qualitative information**: The reports generated by REACHSoft are quantity reports, not quality reports. The team must perform random checks for quality.
- **Clinical entry options:** Because REACHSoft was not designed by doctors, sometimes the clinical entry options are missing, wrong, or incomplete. Most of these issues have been addressed but further consultations may be needed.

5. SUGGESTIONS FOR THE IMPROVEMENT OF REACH

Ideas identified in January 2018 interviews to improve the effectiveness of the REACH program

REALMS FOR IMPROVEMENT

Out of the weaknesses identified, REACH staff and partners identified suggestions for program improvement in four key areas:

1 RESOURCES

2 IMPLEMENTATION

3 COMPLIANCE

4 DATA COLLECTION

INCREASE PROGRAM RESOURCES

1

RESOURCES

- Increase funding for dedicated support staff. Certain roles, like social workers or community workers, have a high workload, resulting in high attrition within the job. More support staff is needed to ensure follow-up is completed, especially in referral compliance
- Increase the budget given for hospital services. In one location, the hospital is continually having to find third-party funds to cover the expenses of staff and surgery for REACH patients

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Orbis only supports each surgery with 6500 rupees but they cost a minimum of 10000 rupees, so I need to find other funds to cover the expenditures of REACH patients beyond the funds that Orbis provides.

- Pune

INCLUDE ABSENT CHILDREN

2

IMPLEMENTATION

- Do not miss students who are absent during primary or secondary screening. Absent students should be screened when REACH staff returns to the school for spectacle distribution.
- Where possible, spectacles should be delivered on the same day as a screening; this can possibly be done with the use of a van with capacity to make spectacles onsite. This will ensure that no student who is prescribed spectacles will miss the spectacle delivery.

INCREASE COMPLIANCE

3

COMPLIANCE

- Use peer youth vision ambassadors in primary screenings who other children look up to so children want to wear spectacles.
- Give students awards if they wear their spectacles every day.
- Strengthen parent outreach, especially in sites where only written communication with parents is conducted. This could be done via phone calls or in-person follow-ups.
- Develop promotional materials with celebrities with messages about the important of vision and spectacle wearing.
- Integrate the use of celebrities as role models for older children.
- Develop anti-stigma, anti-bullying, and counseling strategies.
- Costs of travel and loss of work are a major barrier to going to referrals. Explore options to provide bus services or a transportation subsidy for parents and children.

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Parents are often not present at any stage of the camps. We only deal with kids at camps and rely on counselors. It would be better if we could explain everything in person to the parents.

- Madurai

ENHANCE DATA COLLECTION AND USAGE

- Link referrals within REACHSoft to the hospital electronic medical records (EMR) if possible, or improve efficiency of information sharing.
- Make REACHSoft less dependent on internet connections. Options to increase use of mobile phones with data connection should be explored.
- Increase quality monitoring reports from Orbis India. Partners would like to see a centralized report from Orbis on where there are data gaps, such as schools with missing GIS coordinates or students. This type of monitoring report is requested on a weekly basis.
- Use data generated by REACHSoft for real-time learning.

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REACH is a separate stand alone program but many studies should be done after REACH with the data generated. What age does refractive error start coming? How does refractive error decrease? There is potential for a lot of generation of knowledge.

- Madurai

We need more quality reports. I also want to know how much in terms of data completion – how much is not entered or wrongly entered? If at the central server room they could check this and send us a report that would be good. For example- at this site HR employment was not entered or GIS not tracked, it would be great to get a monitoring report like this every week from central Orbis.

- Pune

SECTION D

STATE OF REACH PER LOCATION

VARIATION IN REACH IMPLEMENTATION

In order to understand the innovations and deviations in each project site, the details of implementation at each stage of the REACH project were identified using interview data, mapped according to the general REACH process low, and compared across the three project sites.

This illuminated the overall innovations and deviations at each stage of the REACH process flow. These deviations illuminated the key unique functionalities about each program that impacted success.

Appendix 09. Summary of Variations by Site

UNIQUE IMPLEMENTATION:
CHENNAI, MADURAI AND PUNE

PUNE	CHENNAI	MADURAI
PARTNERSHIP	ACADEMIC ENGAGEMENT	IN-SCHOOL DILATION
MOBILITY	FAMILY INVOLVEMENT	TRAINING SYNERGY
COMMUNICATION	VISION AMBASSADORS	REFERRALS HELP

STATE OF REACH PER LOCATION

1.
PUNE

Details of REACH implementation and additional research conducted

PUNE: KEY THEMES

PARTNERSHIP

Pune uses an innovative model that is heavily supported –from planning and implementation, to program staffing, to garnering sustained funding—by a local corporate partner, Mapro.

MOBILITY

Moving the location of the REACH project office allows the team to operate out a of a hub near the schools, decreasing travel time and costs, and increasing their connection to the local area.

COMMUNICATION

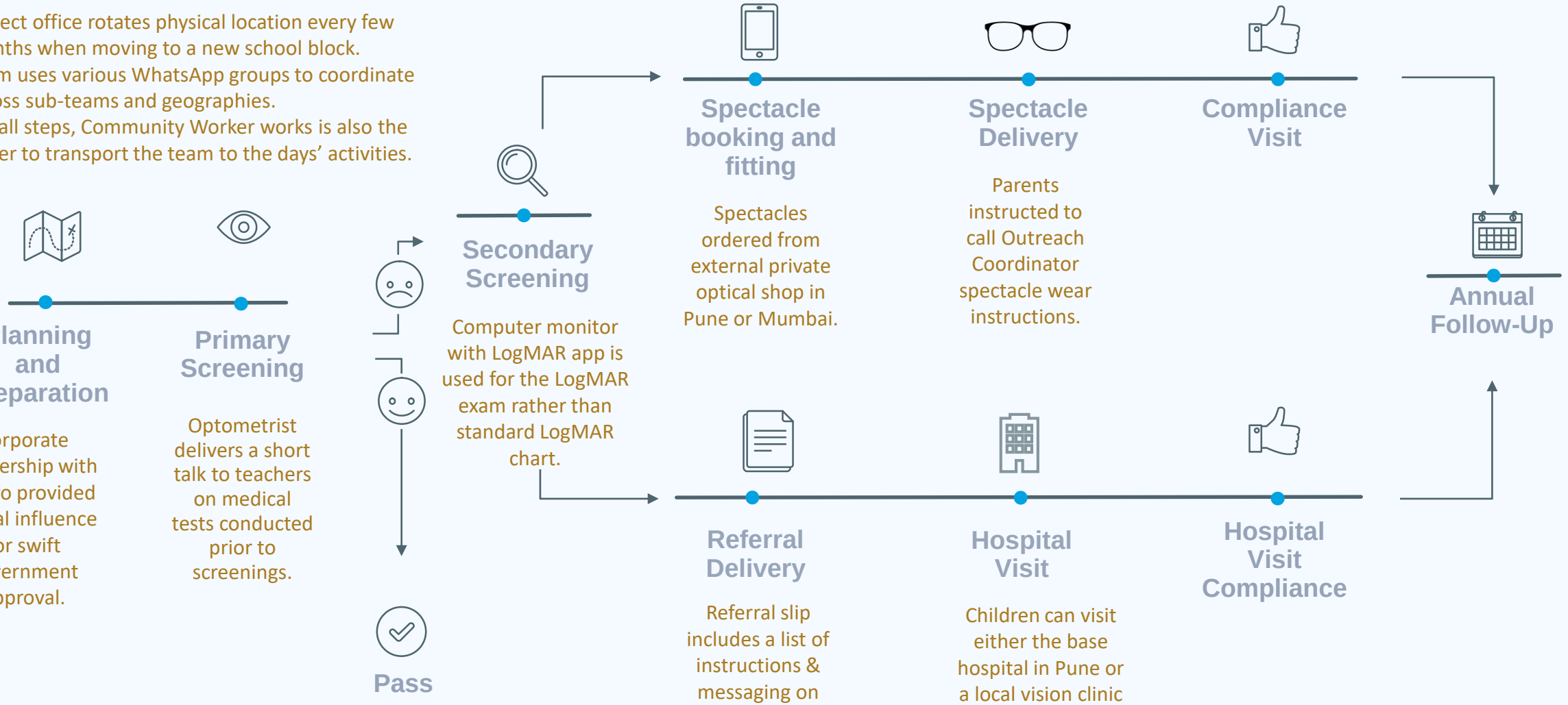
Pune relies on technology and uses REACHSoft as an integral part of the program design to facilitate the satellite office many kilometers from the base hospital.

First we approached political leaders in district collective, who gave orders to district education officer who released a letter that is a program schools should support…. Permission is easier if there is a top down approach. No school would comply if not authorized. This was possible only because Mapro was a leader in the area and had all for the contacts with district leaders.

- Pune

PUNE: REACH PROCESS FLOW

- Project office rotates physical location every few months when moving to a new school block.
- Team uses various WhatsApp groups to coordinate across sub-teams and geographies.
- For all steps, Community Worker works is also the driver to transport the team to the days' activities.



Appendix 10. Pune Process Flow

PUNE: ADDITIONAL RESEARCH

Beyond the required REACH protocol, the **project is facilitating additional learning**. In partnership with H.V. Desai Hospital, Post-Graduate in Ophthalmology students occasionally use the REACH program infrastructure to conduct dissertation work.

Questions that current students are examining include:

- What activities improve spectacle wearing compliance?
- What is the capacity for students to accurately conduct vision screenings?
- What is the impact of wearing spectacles on child education and quality of life?

It is not clear whether or not these learnings are being shared with the REACH program or how often these activities take place.

Appendix 10. Pune Process Flow

2. CHENNAI

Details of REACH implementation and additional research conducted

CHENNAI: KEY THEMES

ACADEMIC ENGAGEMENT

The partner hospital works with the Elite School of Optometry (ESO). ESO students serve as interns within the REACH program. An ESO faculty member is REACH's Outreach Coordinator. At ESO, she conducts research in behavioral change, to increase treatment and spectacle compliance.

FAMILY INVOLVEMENT

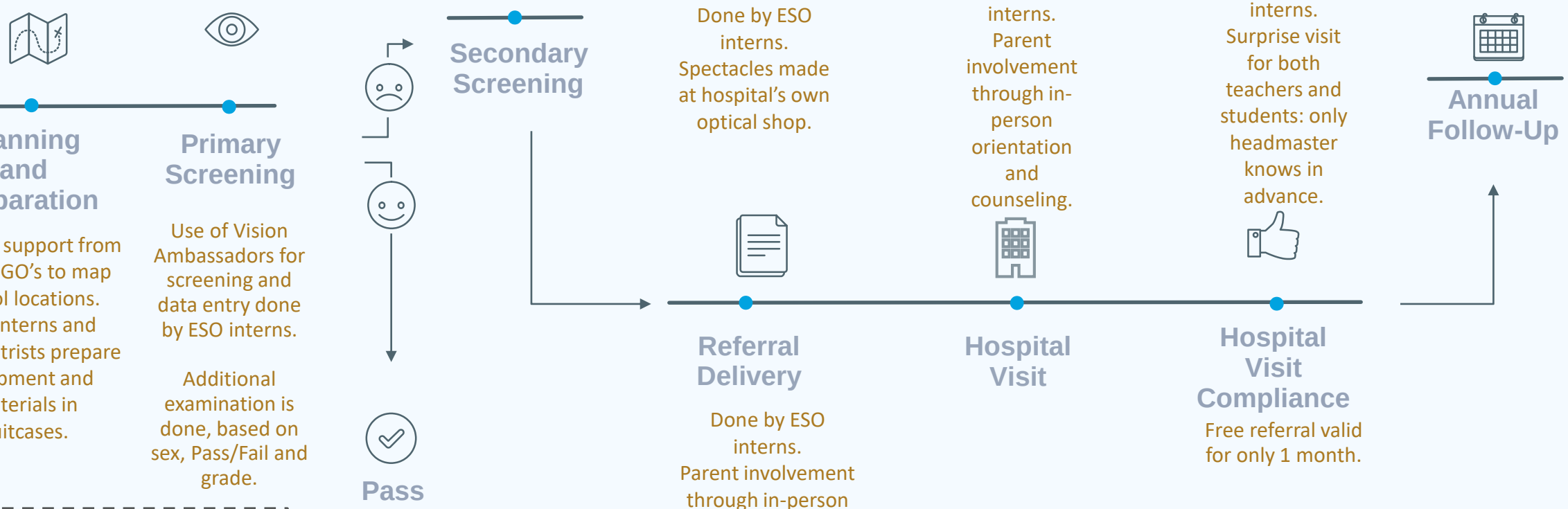
Both parents and children are viewed as sharing responsibility for treatment and spectacle compliance. REACH staff explains in person to both parent and child the importance of wearing spectacles for education and socioeconomic outcomes and the cost of spectacles.

VISION AMBASSADORS

In each school, middle and/or high school students are selected and trained to be Vision Ambassadors. They are the ones conducting primary screenings for their younger peers. The initiative recognizes students as leaders within the school community.

CHENNAI: REACH PROCESS FLOW

Additional details on deviations in the following slides



Appendix 11. Chennai Process Flow

DETAILED PROCESS FLOW

Planning and preparation

- Receive support from local NGOs to map out school locations, which helps staff plan and optimize visits.
- Interns previously pack suitcases containing all equipment needed and checked for screenings. The quantities of equipment and material are determined by school size
- Use of paper version of REACHSoft templates for spectacle fitting, booking and delivery, when the number of tablets needed exceeds the number available. Later, the paper copy data is entered in REACHSoft.

Appendix 11. Chennai Process Flow

DETAILED PROCESS FLOW (cont.)

Primary screening

- Vision Ambassadors: secondary and/or high school students are selected and trained to perform primary screening.
- Kindergarten children are screened in their own classroom, a practice that is less stressful to younger students. They are only brought to the screening room if further examination is needed.
- Vision Ambassadors do not have access to REACHSoft. After they give Pass/Fail stickers to screened students, this information is entered into REACHSoft by REACH staff/ESO interns at a separate data entry station.

Appendix 11. Chennai Process Flow

DETAILED PROCESS FLOW (cont.)

Primary screening (cont.)

Different examinations are done on students based on sex, Pass/Fail status and grade:

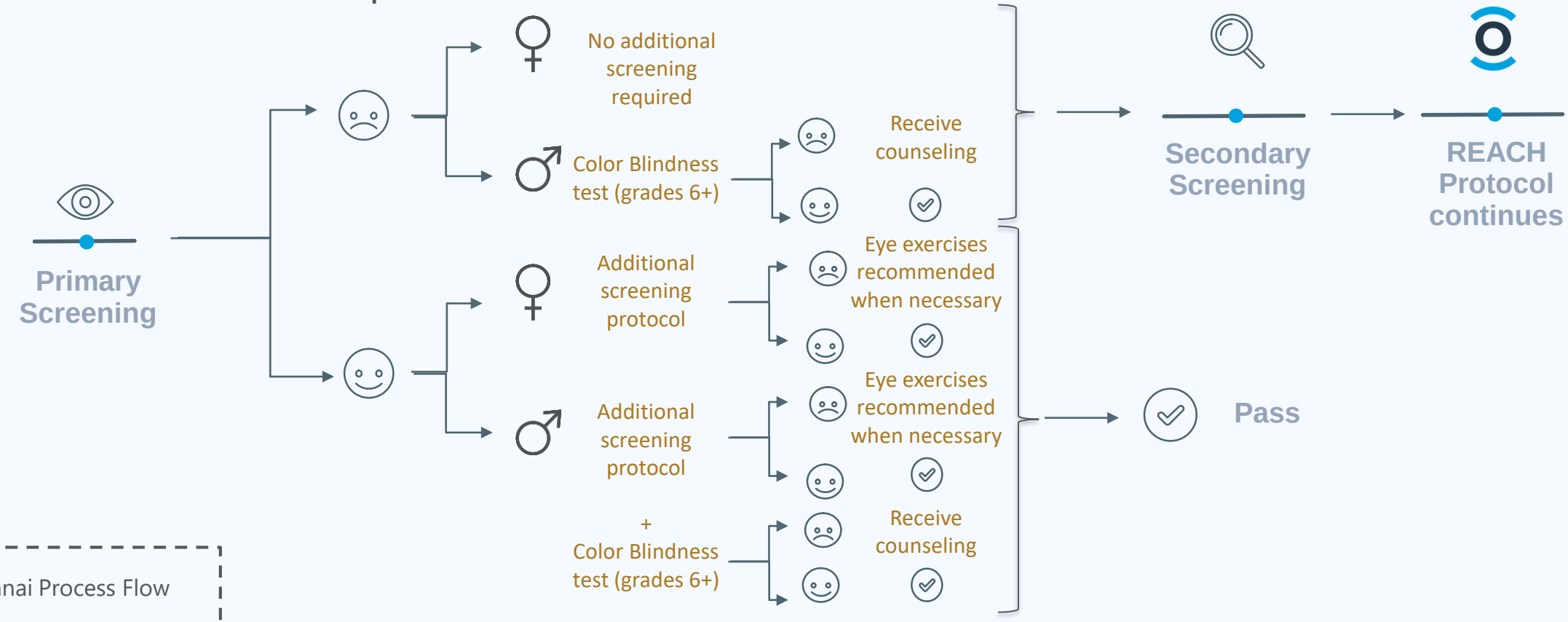
- Girls and boys who pass the primary screening go through an additional screening protocol, which consists of checking for other ocular conditions such as squint, cataract and droop and checking for binocular vision dysfunctions, which can affect educational attainment and cognitive development.
- Boys, regardless of Pass/Fail and in grades 6 and up, undergo a color blindness examination. If color blindness is detected, the school staff provides counseling, especially in regards to career options.

Appendix 11. Chennai Process Flow

DETAILED PROCESS FLOW (cont.)

Primary screening (cont.)

Additional examination process flow:



Appendix 11. Chennai Process Flow

DETAILED PROCESS FLOW (cont.)

Spectacle booking and fitting

- Using information from REACHSoft, a prescription is filled in paper by REACH staff/ESO interns, attached to the frame style chosen onsite, and delivered by ESO interns to the optical shop at the hospital partner.

Referral delivery

- Wait to give referral cards until the spectacles are ready for return.
- A REACH staff member/ESO intern stays “on duty” during referral delivery to receive parents and students. During the meeting, the referral card is handed over and orientations and counseling are given to both children and parents.

Appendix 11. Chennai Process Flow

DETAILED PROCESS FLOW (cont.)

Spectacle delivery

- Happens at the same time as the referral delivery.
- A REACH staff member/ESO intern stays “on duty” during referral delivery to receive parents and students. During the meeting, the referral card is handed over and orientations and counseling are given to both children and parents.

Hospital visit compliance

- To get free treatment at the hospital, parents and children have to use the referral card (i.e. schedule a hospital visit) within one month of receipt.

Appendix 11. Chennai Process Flow

CHENNAI: ADDITIONAL RESEARCH

ESO hosts an annual conference in which they give an award for the institution with the most innovative community outreach initiatives.

ESO is also organizing a case study contest in which Orbis India will award the most meaningful change story.

Published the booklet "Guidelines for School Eye Screening/Testing," which aims to give eye care practitioners the essentials to conduct a school eye screening program in accordance with ESO protocols and guidelines.

Additional examinations are being conducted during camps to (i) assess differences in refractive error incidence among students of public and private schools, due to children's habits and (ii) evaluate if spectacle makers should change or add sizing by sex and/or public/private schools, to improve compliance.

In Chennai, additional learnings from ESO's research in behavioral change are constantly being added to the vision screening protocol to increase compliance. The changes in Chennai's protocol do not conflict with REACH guidelines.

Appendix 11. Chennai Process Flow

Now we are trying to have the teachers have fun sessions with students and read the book [The Singing Tree] out loud. […] For a few schools we arrange other activities, such as science activities, to understand light refraction and vision, but it depends on the rapport with the schools.

- Chennai

3.
MADURAI

MADURAI: KEY THEMES

IN-SCHOOL DILATION

REACH staff have secured government authorization to conduct dilation in schools during secondary screening, which significantly cuts down on the number of students needing to go to the hospital for the process.

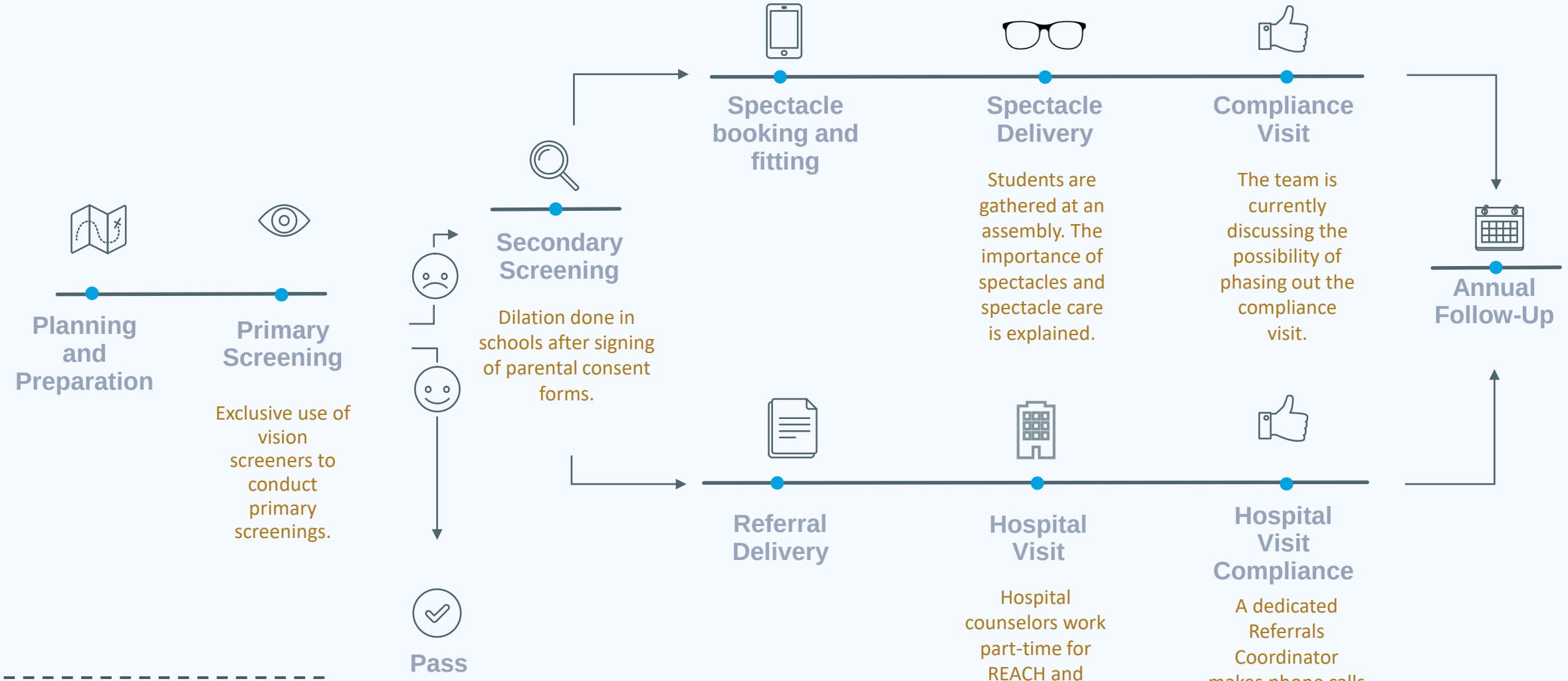
TRAINING SYNERGY

REACH and the Aravind Sisters program share a mutually beneficial arrangement in which hospital trainees get hands-on experience by participating in school vision screenings and REACH has access to a pool of free but skilled labor.

REFFERALS HELP

Special attention is paid to ensuring compliance for referrals through the employment of a dedicated Referrals Coordinator and use of hospital counselors to receive students and their parents at the hospital.

MADURAI: REACH PROCESS FLOW



Appendix 12. Madurai Process Flow

MADURAI: ADDITIONAL RESEARCH

Study on autistic children

Previously, not enough autistic children were coming to the low-vision clinic to warrant additional research, but now they are.

Eye screenings for teachers

Currently conducting vision examinations on teachers to assess the potential to improve teaching and student compliance. Also looking at screening admin staff and drivers (giving prescriptions but not free spectacles).

Mobile laboratory van

A van was donated by the ArcelorMittal Foundation 10 years ago to serve as a mobile spectacle fitting laboratory, but the equipment is currently not working. The team is looking at the feasibility of refurbishing the equipment for same-day spectacle delivery.

Appendix 12. Madurai Process Flow

SECTION E

PERCEIVED OUTCOMES OF REACH

1. REACH STAFF PERCEPTIONS

REACH outcomes as perceived by staff in Pune, Chennai and Madurai

MAIN OUTCOMES PERCEIVED BY REACH STAFF IN PUNE, CHENNAI AND MADURAI

Access to screenings	The number of students who have received eye screenings and treatment, particularly in rural areas, has increased.
Children's health and education	Children who were treated have experienced improvements in eye health, which has had a positive impact on their education.
Spectacle usage	Although there is still a stigma around wearing spectacles, the variety of frames offered and the counseling provided by REACH have improved usage among students.
Teachers and parents involvement	Teacher and parental involvement has been critical to REACH's success stories.
Awareness and compliance	REACH has improved students' and families' awareness of eye health and their compliance to the program.

ACCESS TO SCREENING

"We are giving them comprehensive services, not only the screenings but glasses and surgical interventions free of cost."
– Pune

"This is a remote place. People don't go to hospitals here. Now with Aravind coming here they get screened and get spectacles. Otherwise they can't afford it."
– Madurai

"REACH has given us the possibility of doing this process for adjacent districts. There are few schools in these clusters. Beforehand these students were ignored. The government does not have resources to bother with these children."
– Chennai

CHILDREN'S WELL-BEING: HEALTH AND EDUCATION

"[During primary screening] we found that a child had a small piece of metal in their eye. Nobody knew about this for years. We saved her from future blindness."
– Chennai

"[REACH spectacles} enable children to see better, for example the blackboard, so villagers can continue studying and access better education"
– Pune

"Many [students] used to have headaches or couldn't read properly, and now they can"
– Pune

SPECTACLE USAGE

"Some children don't like those frames. If they don't like them, they don't wear. Some students are teasing them. That in boys it reduces their power. And with girls the mentality is that they won't get married."
– Pune

"Previously, children did not have a choice of glasses to wear especially when glasses were given for free, which increased teasing and children did not want to wear them."
– Chennai

"0% of students wearing glasses feel they'd be teased. The school has been giving counseling."
– Madurai

TEACHER AND PARENT INVOLVEMENT

"A teacher spent her own money to bring all of her students who were referred to the hospital."
– Chennai

"Teachers and parents are aware of eye's [health], treatments needed, how to take care of glasses, and how daily use of computer or mobile affects".
– Pune

AWARENESS AND COMPLIANCE

"Posters at schools are increasing awareness of the importance of glasses and also the counseling to parents is increasing awareness."
– Chennai

"At the compliance check, about 55% were wearing glasses during the surprise visit."
– Madurai

"In 99% of cases, children come for follow-up."
– Pune

2. TEACHER AND PARENT PERCEPTIONS

REACH outcomes as perceived by teachers and parents in Pune

MOST SIGNIFICANT CHANGE STORIES

SCHOOL PERFORMANCE

"We have observed that the marks scored by a particular student have a correlation with the accuracy of his vision. Better accuracy of vision yields better percentage of marks. We have observed that after using your spectacles, the affected students have demonstrated an improved scoring of marks."

TEACHING

"Teachers used to encounter problems. Some students used to demand that they'd be allocated seats in the front rows so that they can see the contents on the board clearly. […] Another common complaint was that students were suffering from headache or watery eyes. […] [REACH] has enabled teachers to impart training on such students swiftly and seamlessly. The core problems of the affected students have been addressed. In a nutshell, the 'Teaching-Learning' process has been simplified."

SOCIO-EMOTIONAL HEALTH

"A girl studying in 5th standard in our school, due to a high eye number, could not even walk confidently. Due to weak financial condition, her family couldn't afford to conduct an eye check up for her. […] . After she started using your spectacles, we observed a very pleasant change in her. […] Her interaction with teachers and fellow students has increased."

SECTION F

LOOKING TO THE FUTURE OF REACH

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REACH SUSTAINABILITY

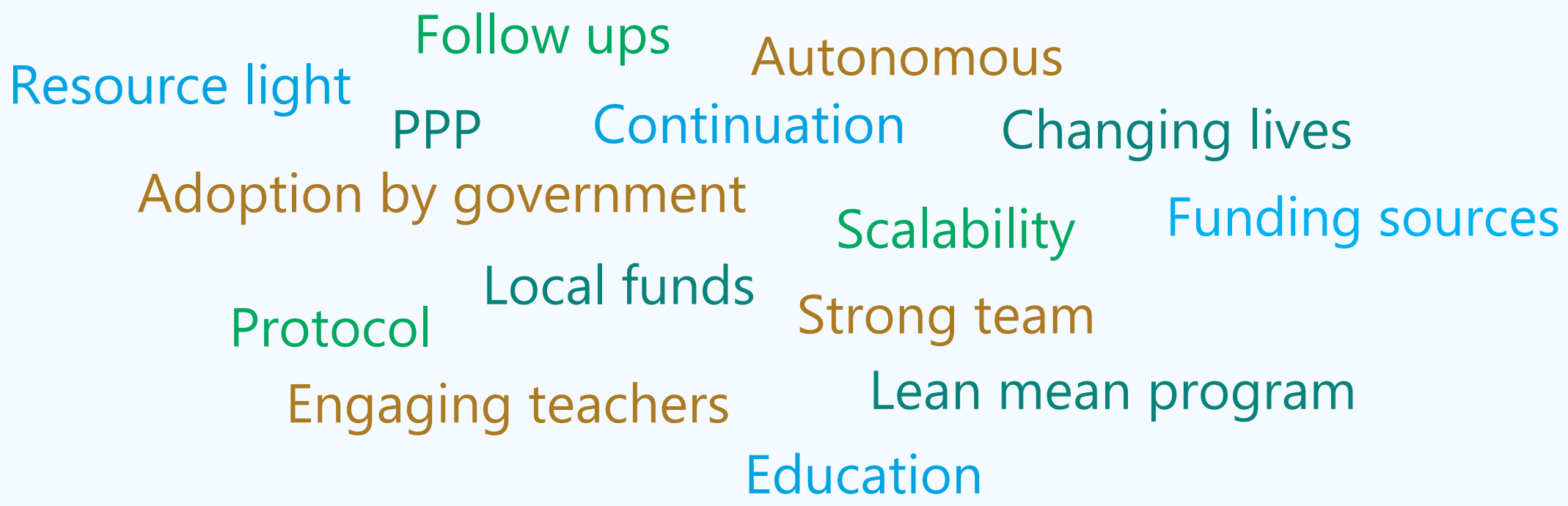
Current funding for REACH is set to end in 2019. With future funding currently unknown, and the goal to continue programming and potentially expand the model to other locations, understanding how REACH can be sustainable is critical for the future.

1.
INSIGHTS FROM ORBIS INDIA

Observations gathered from the Orbis Delhi team in March 2018

SUSTAINABILITY: DEFINITIONS FROM ORBIS DELHI TEAM

"What words come to mind when you think about sustainability for REACH?"



SUSTAINABILITY AS SEEN BY THE ORBIS DELHI TEAM

Challenges

- Model is currently resource-intensive by design
- Long-term funding is a concern
- REACH is a program that happens "at the numbers level" – difficult to introduce new practices

Opportunities

- Establish Orbis India as a thought leader among other nonprofits
- Standardize the protocol for greater program quality, leanness and scalability
- Explore possibilities for REACHSoft (licensing, data mining)

2. INSIGHTS FROM REACH PARTNERS

Data collected from REACH partners in January 2018

INCREASING SUSTAINABILITY

When thinking about REACH beyond 2019 or in the context of program expansion, REACH staff and partners identified suggestions for increased sustainability in four key areas:

1. HUMAN RESOURCES
2. IMPLEMENTATION
3. PARTNERSHIPS
4. TECHNOLOGY

DECREASE RELIANCE ON REACH STAFF

1

HUMAN RESOURCES

- Advocate for a pediatric rotation in residency programs to increase available pediatric ophthalmologists to partner with REACH.
- Decrease reliance on pediatric ophthalmologists, and train general ophthalmologists for basic pediatric needs.
- Expand the utilization of interns by increasing their capacity building.
- Explore the possibility of training teachers or less-specialized hospital staff as vision screeners to decrease costs but ensure accuracy.

REDUCE NUMBER OF SCHOOL VISITS

2

IMPLEMENTATION

- Explore ways to make the process leaner, including decreasing the number of school visits to reduce the burden of planning and staffing. Even with combining primary and secondary screening, the number of visits is very high. Consider removing the three-month compliance visit.
- Eliminate the provision of free spectacles for private schools. Private school visits are much more challenging to organize than public school visits because they do not fall under the government mandate for school vision screenings.

INVOLVE CORPORATIONS, NGOS AND GOVERNMENTS

- Strengthen partnerships and involvement with NGOs to lower overall costs.
- Explore ways to cover project costs with external support from corporate partners, such as Mapro in Pune.
- Partner with the government to reduce overlap with other eye screening programs. Consider linking eye screenings with programs like government immunization drives or other health initiatives that have an established and lasting infrastructure.

EXPAND UTILIZATION OF REACHSOFT

- Decrease initial technology costs that REACHSoft requires by exploring potential for use of mobile phones, which most staff and healthcare workers already own.
- Consider making REACHSoft publicly available for purchase to increase program revenue.

3. INSIGHTS FROM EXTERNAL RESEARCH

Opportunities for learning from other health NGOs and critical policy moments

EXTERNAL RESEARCH STRATEGY

Additional research was conducted using online sources to identify best practices and considerations relevant to REACH in three key areas:

a) Other school-based vision screening program design

b) eHealth innovations

c) Government and policy considerations

LOOKING TO THE FUTURE OF REACH: INSIGHTS FROM EXTERNAL RESEARCH

a) Vision screening program design

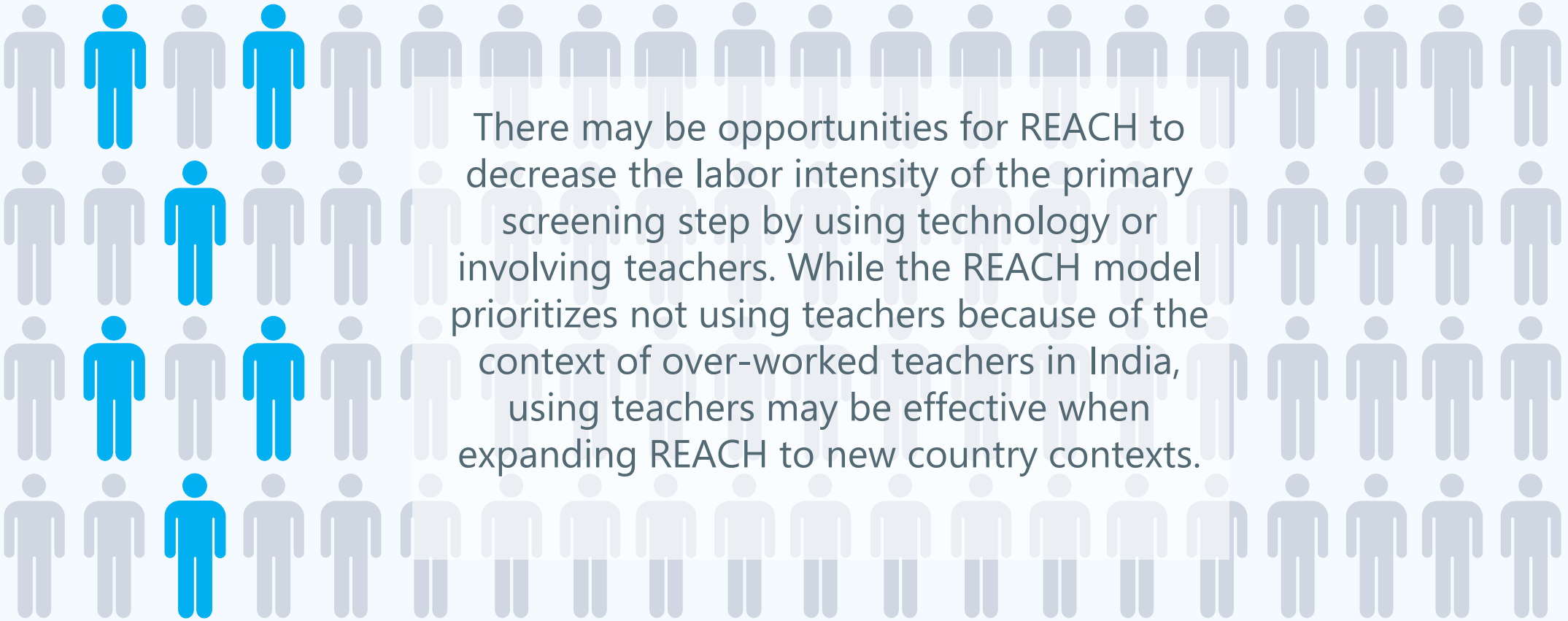
OVERALL FINDINGS

Many programs are exploring alternative models that **rely less heavily on trained clinicians**:

- Photo-screening is being explored for school screening programs in Taiwan and Alaska. More research is needed on the cost-effectiveness and efficiency of this method.
- A study in northern India found that self-assisted vision examination (SAVE) could provide a simple, acceptable and valid alternate strategy for school vision screening to identify the cohort of students needing a secondary screening. However, factors influencing procurement of glasses and their use require further study.
- In a study in Southern India, it was found that a school screening vision program involving all class teachers (ACTs) compared with the standard program involving a limited number of selected teachers (STs) resulted in more efficient screening than a program involving STs at about a third of the cost and also improved compliance with hospital referral.
- The Portable Eye Examination Kit (Peek) has a suite of applications, including for measuring visual acuity, which has been found to be an acceptable tool for patients, examiners and stakeholders in a recent study in Kenya. This trial in schools in Kenya using the system demonstrated that teachers could be taught to screen vision reliably using the Peek app.

(Rewri, 2013); (Canadian Paediatric Society. 2009); (Priya, 2015); (Lodha, 2016)

KEY FINDING: DATA ON SCHOOL VISION SCREENINGS IS LIMITED



There may be opportunities for REACH to decrease the labor intensity of the primary screening step by using technology or involving teachers. While the REACH model prioritizes not using teachers because of the context of over-worked teachers in India, using teachers may be effective when expanding REACH to new country contexts.

KEY FINDING: DATA ON SCHOOL VISION SCREENINGS IS LIMITED

Published findings from government or NGO school vision screening programs are scarce and not representative of the many programs being piloted.

Orbis has an opportunity to add to the weak evidence base by **publishing learnings from the REACH program.**

LOOKING TO THE FUTURE OF REACH: INSIGHTS FROM EXTERNAL RESEARCH

b) eHEALTH innovations

USE OF MOBILE PHONES IN HEALTH IS INCREASING GLOBALLY

- Smartphones are on the whole more expensive than a basic Snellen chart but less expensive than a retro-illuminated logMAR or Snellen chart.
- With the increased availability of low-cost smartphones and tablets, many health care workers may already own a device suitable for downloading multiple applications.
- Use of automated SMS to send messages to patients is increasing across the health world and is showing signs of increased efficacy.

The global increase in mobile phone access and eHealth infrastructure provides potential to expand REACH with a greater reliance on mobile phones and data networks. This includes the potential for an automated referral text messaging system to decrease reliance on community and social workers. The expanse in eHealth around the world is promising for REACH's potential in other geographic contexts.

(Bastawrous, 2013); (Bastawrous, 2015); (Free, 2013)

STANDARDS IN DATA QUALITY MANAGEMENT MUST BE IN PLACE

Recommendations from other international public health programs working to expand eHealth recommend the following strategies for improved quality assurance:

- Provide supervisors with regular reports tracking the data quality performance of their teams.
- Tie data quality alerts/flags to actionable follow-up items that can be tracked.
- Provide partners with timely, useful, and supportive feedback on the quality of their submitted data.
  - Messages that acknowledge the achievements of partners and individual employees can be motivating, making them feel supported and valued.
- Institute regular (monthly or quarterly) meetings where partners discuss data quality and are engaged in developing appropriate solutions to rectify identified issues.
- Develop a documented protocol for higher-level data quality checks.
  - This should involve regular mechanisms for advanced checks (such as data quality spot checks) to detect suspicious patterns, inconsistencies, or anomalies in data. Checks may be automated, but some may require manual review of the data. Manual checks should consider the context of the program; these may be undertaken at the managerial level and require additional training in data analysis skills.

(Measure Evaluation, 2017)

NGOS ARE INNOVATING TECH FOR VISION SCREENINGS

Peek Vision:

Developed smartphone-based vision eye test apps that allow anyone to measure visual acuity using only a smartphone to identify who needs further examination. The app calculates the vision score and automatically sends information on those who need an exam to a local eye care professional who can schedule visits to the school to work out the reasons for the sight problems, provide treatment (e.g. glasses, eye drops), or refer them on for specialist care. Parents of the children receive automated SMS (text) messages or voice messages in their local language notifying them of the result of the screening tests. The head teacher or contact person for the school receives an SMS list of the children in their school who require further support.

- Explore sending automated messaging to parents and headmasters using REACHSoft.
- Potential to integrate use of PEEK applications or similar software in the primary screening process to avoid the need for trained vision screening staff and decrease the burden of data entry.

(Bastawrous, 2016); (Peek, 2018)

DATA INTEGRATION WITH EMR SYSTEMS

- Most NGOs that are integrating data into automated Health Management Information Systems (HMIS) are doing programs directly through public health clinics and national employees through Community Health Workers or other government health structures.
- NGOs with their own data systems struggle to integrate data with public health records in many countries.
- An added challenge in India is that many government hospitals are still not using any automated record system. Private hospitals primarily use EMRs, but they are different systems and information cannot be shared across platforms.

The inability to integrate REACHSoft with hospital EMRs continues to be a gap in efficiency for REACH. Additional research and innovation how to handle this challenge is needed. Conversations with other partners, like PEEK, who are facing this same challenge in the Indian context may be useful.

(Srivastava, 2016)

FURTHER RESEARCH OPPORTUNITIES

Current Randomized Control Trials (RCTs) and other studies are being conducted by PEEK. These findings may be informative to REACH. Orbis should follow-up upon study completion to learn:

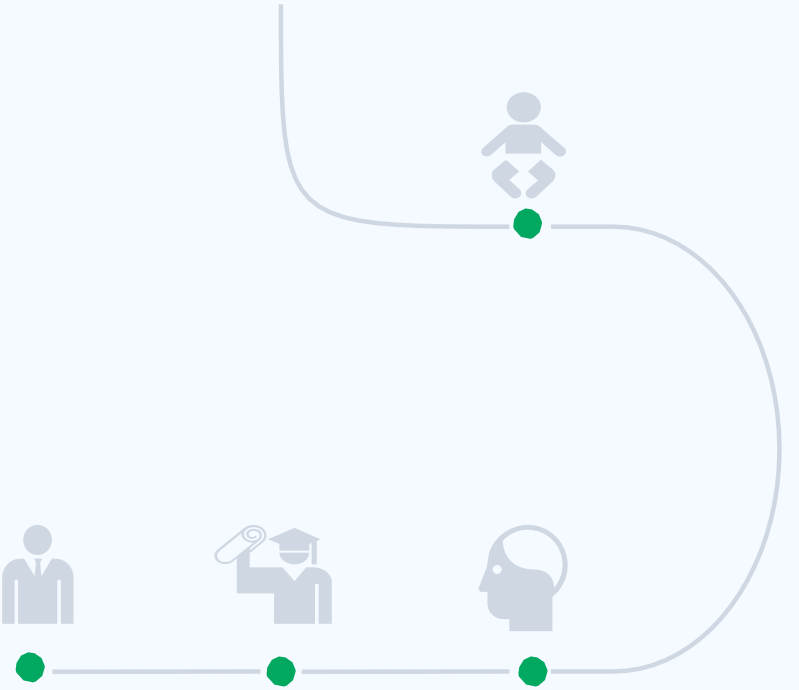
- What did PEEK find during current trials in Kenya? Are the opportunities for integration of any of these learnings into REACH?
- What did PEEK find on their current RCT in India? PEEK is currently running an RCT in India to investigate the effectiveness of their mobile health education intervention on children to evaluate whether using Peek increases spectacle wear at 3 to 4 months and uptake of referral of children identified with other eye conditions. The trial will also assess the cost of developing and delivering the Peek health education intervention and the cost of dispensing and delivering the spectacles in both arms of the trial.

(Peek, 2018)

LOOKING TO THE FUTURE OF REACH: INSIGHTS FROM EXTERNAL RESEARCH

c) Policy considerations

OUTLOOK ON HEALTH AND EDUCATION IN INDIA



The 2018-2019 government budget speech had both positive and negative implications for the operation and expansion of REACH:

- Health and education had the most mentions ever when compared to all of the budget speeches given since Indian independence.
- Both areas were announced as government priorities; this provided fertile ground for implementing policies and nongovernmental programs that improve health and educational outcomes.
- However, budget allocation for health and education remains low despite their frequent mentions: 2.2% and 3.84% respectively – representing an increase of only 2.76% and 3.48% compared to last year's allocation.

Additionally, the increase in the Health and Education Cess (revenue from tax on personal income and corporations which is allocated to health and education) to 4%, compared to last year's 3%, to especially target the needs of poor and rural families, is aligned to REACH's mission and may set a government's greater commitment toward programs that target both health and education matters, such as school eye screenings.

(Right to Education,in, 2013); (Press Trust of India, 2018)

Appendix 13. Indian Eye Screening Landscape

CRITICAL POLICY MOMENTS

India's Lower House general elections, which will take place in May 2019, may represent a shift in government priorities and thus might strengthen or weaken the implementation of eye screening programs in schools. It does, nevertheless, open a space in the public policy agenda to restructure the government's school eye screening program. There is an opportunity for Orbis to partner with the national government and institutionalize a more comprehensive school eye screening public policy.

Orbis should consider prioritizing increased advocacy and technical assistance around the development of national mHealth guidelines, to streamline data collection and move towards a framework that will strengthen the future of EMR records and open opportunities for data sharing and cohesion.

(Election Commission of India, 2018)

Appendix 13. Indian Eye Screening Landscape

SECTION G

RECOMMENDATIONS

RECOMMENDATIONS FOR REACH

The following recommendations were developed by the SIPA Consulting Team and are linked to the main findings from the team's visits to India described in Section B, as well as the desk research.

They aim to provide guidance on how Orbis can sustain, expand and improve REACH.

MAIN RECOMMENDATIONS

REDUCE RESOURCE-INTENSIVE NATURE OF THE MODEL

REACH was found to be very resource-intensive in terms of both human and financial capital. To improve the sustainability and scalability of the program, Orbis should:

- Explore additional partnerships with other companies who may be willing to take on a similar community role as Mapro has done in Pune. Public-private partnerships may have the potential to further fill funding gaps. Additionally, spectacle manufacturers might present an opportunity to establish Corporate Social Responsibility (CSR) initiatives or negotiate long-term contracts.
- Capitalize on critical policy moments in India (including the upcoming May 2019 general elections) and look for opportunities to partner with the government to restructure their school eye screening program or prioritize national eHealth guidelines with a view to improving future health data collection in India.
- Train more laypeople for each step of REACH to minimize the need for specialized staff, including developing and expanding internship program partnerships with other optometry schools.
- Pursue technological advances for REACHSoft such as automated SMS messaging to parents to inform them of referral and spectacle prescriptions, reduce the need for staff follow-up and increase program compliance.
- Learn from PEEK Vision different ways of applying technology to decrease the need for trained vision screeners during the primary screening stage.

MITIGATE LOGISTICAL CHALLENGES

In all of the project sites, managing the often shifting details of school screening dates and staff allocation requires a lot of time. Additionally, some schools are becoming frustrated with the many disruptions to class caused by the frequency of visits that the model requires. To mitigate for these challenges, Orbis should:

- Decrease the number of visits made to each school to reduce disruptions in learning and alleviate the burden of scheduling on staff. Removing the 3-month compliance visit, as done in Madurai, may be a potential option to pursue once sufficient data is collected on the effectiveness of the REACH model. Continued follow-up with parents via SMS messaging may also allow for compliance reminders without school disruption.
- Pursue national government authorization for conducting dilation in schools to allow all hospital partners to perform detailed examinations in schools and reduce the number of hospital referrals required. Lessons learned from Madurai in this process may help guide strategies to make this possible everywhere.
- Leverage technology to strengthen communication between REACH and parents, teachers, and other stakeholders (e.g. using automatic text messages through REACHSoft) to decrease the need for intensive follow-up by REACH staff.

STRENGTHEN REFERRAL PROCESS

Many parents have a hard time taking their referred child to the hospital due to time lost from work, resulting in low compliance. Additionally, REACHSoft cannot be integrated with hospital EMRs. To improve this process, Orbis should:

- Strategize ways to better involve parents in the referral and spectacle compliance phases by facilitating a conversation across hospital partners about what works and what does not. Chennai is a good partner to lead this discussion, as they have the most innovative model in this area and have done considerable research around behavior change related to eye health and spectacle use.
- Partner with local vision clinics whenever possible to provide clinical visit options other than the base hospital and decrease travel time for follow-up.
- Consider providing travel subsidies or other transportation incentives for poor families who live very far from the clinic or hospital.
- Research additional ways to streamline the referral compliance tracking process with hospital staff and electronic medical records. Consultations with other NGOs also facing this same challenge will be helpful in developing a comprehensive solution.

FACILITATE LEARNING ACROSS HOSPITAL PARTNERS

In all of the three project sites, considerable innovations and deviations are happening with regards to human resources being deployed, side research being conducted and solutions being implemented to improve program effectiveness. To capitalize on these, Orbis should:

- Encourage hospital partners to share the details of how they have approached staffing of their program in order to accelerate impact. Convening a session using the process flows developed from this project, and having partners share each of the steps and innovations they have developed may be a meaningful way to begin this conversation.
- Spearhead knowledge exchange across hospital partners with regards to additional research being conducted to identify possible opportunities for collaboration or best practices that could be adopted across localities.
- Foster an environment in which hospital partners are routinely in contact with each other outside of the Orbis-convened sessions to generate additional opportunities for information-sharing.

STRENGTHEN DATA QUALITY CONTROL MECHANISMS

REACHSoft is being used extensively and quite uniformly across the different sites. However, there is a need to ensure the accuracy and quality of information that is being inputted. To do this, Orbis should:

- Employ a data quality control protocol to decrease data entry errors. The project sites visited do not have any way of minimizing human error in data entry. This is especially important when many people are inputting data – including interns, REACH staff and optometrists. Organizations such as MEASURE Evaluation are a valuable resource for field-tested protocols.
- Include quality monitoring in the monthly reports that hospital partners send to Orbis India and identify ways that the Orbis India team in Delhi can further improve the quality of the data being entered.
- Complement REACHSoft monthly monitoring reports with qualitative M&E strategies that could enrich analysis of program outcomes and improve sensemaking of the quantitative data.

ESTABLISH ORBIS INDIA AS A THOUGHT LEADER

The REACH model is perceived to have positive impacts for students and has increased the number of children being screened annually in India. Orbis has access to extensive data on the program from REACHSoft as well as other innovative research areas being facilitated by the REACH program infrastructure with hospital partners. The unique strategies used by different partners provide lessons on how to address challenges in school-based vision screenings. To capitalize on these learnings, Orbis should:

- Develop a plan to publish both positive and negative findings from the REACH pilot and REACHSoft. The details of this model, the results of the pilot program, and the data generated by REACHSoft are all valuable for adding to the evidence base on school-screening programs.
- Capitalize on the additional research and information being conducted and collected by hospital partners through REACH by supporting its dissemination and potential publication in order to grow the evidence base around vision screening in India.
- Convene other NGOs working in eHealth to develop solutions for data integration between EMRs and REACHSoft. As eHealth expands, this challenge will only continue to grow across all health sectors. Orbis can establish itself now as a leader in innovative solutions to address this obstacle.

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12. Madurai Process Flow
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See “Appendices” zipped file

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WORKSHOP IN DEVELOPMENT PRACTICE 2017-2018

Sijia Chen, Angela Hartley, Marina Lafer and Maria Jose Meza-Cuadra

Columbia University
School of International and Public Affairs