

CHILDREN'S HEARTLINK CENTERS OF EXCELLENCE RECOMMENDATIONS

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START CENTER

STRATEGIC ANALYSIS,
RESEARCH & TRAINING CENTER

Methods: Extensive SME Interviews & Literature Review

- Interviewed 27 Staff & Subject Matter Experts
- Reviewed published and grey literature

CHL Staff

- Adriana Dobrzyscha
- Andreas Tsakistos
- Anne Betzner
- Bistra Zheleva
- Courtney Geolat
- Jackie Boucher
- Wade Jones

CHL Volunteers & Partners

- Bruna Cury
- David Overman
- Jeff Paurus
- Mark Lewin
- Steve Schwartz
- Sandy Staveski

Subject Matter Experts

- Barclay Stewart – Operation Smile
- Beth McNairn – HVO
- Dilys Walker - PRONTO International
- Jeffery Burns – OpenPediatrics
- Kathy Jenkins – IQIC
- Kristin Hatcher – Operation Smile
- Steven Hatting – University of Washington
- Ly Phuong Anh – MEET International
- Pam Kohler – University of Washington
- Robert Gertler – MEET International
- Sarah Orth – Seattle Children’s Hospital
- Bruce Avolio – University of Washington
- Jodie Miner – Swedish Medical Center Foundation

Scaling CHL's Impact

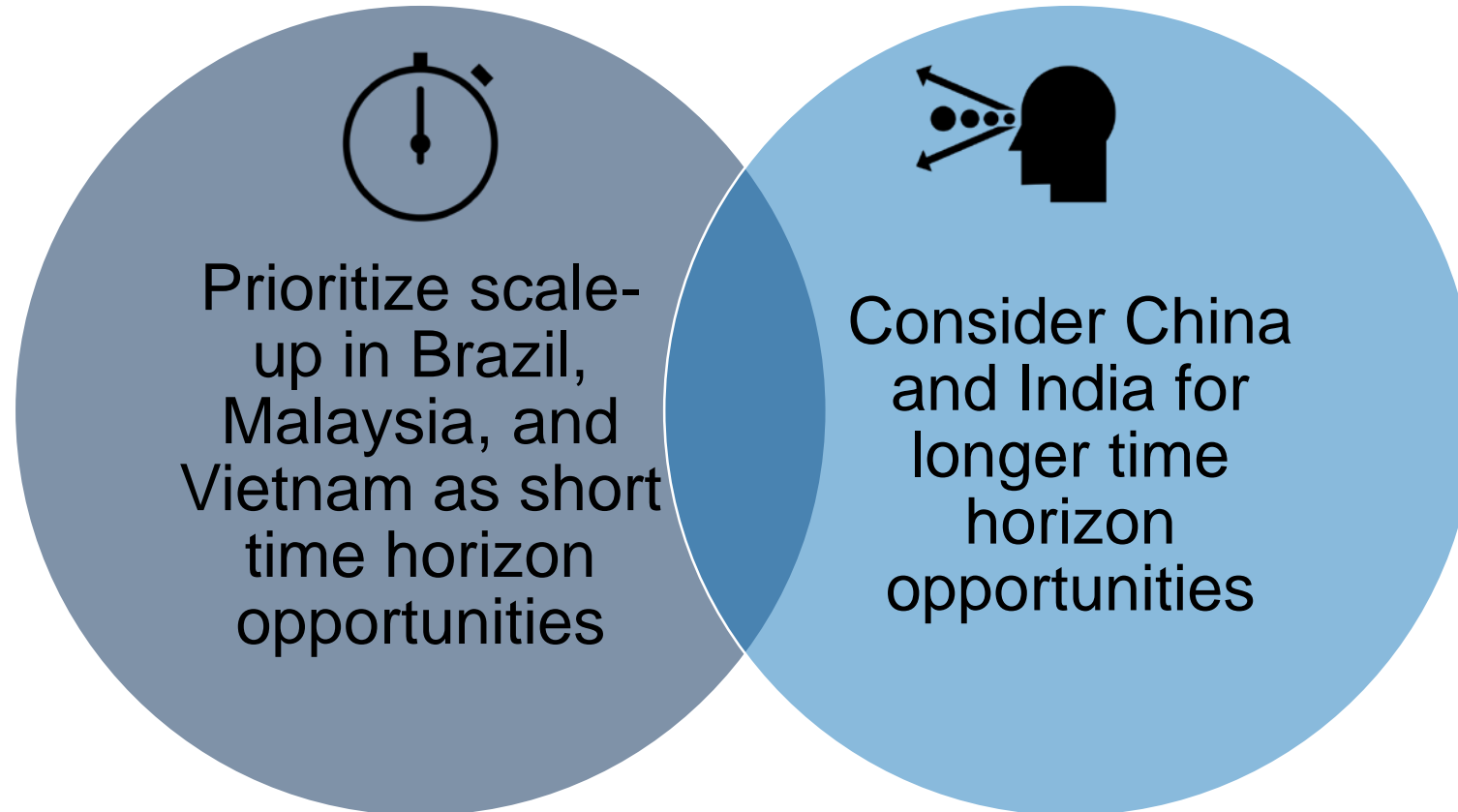
Building on CHL's successes to save more children with CHD



**Increase # of Centers of Excellence:
Operational Opportunities**

Recommendation: Expand Within Existing Countries

CHL has an opportunity to expand the reach by leveraging existing relationships and know-how within current countries



CHD Patient Population 2030

For catchment areas of 50 partners¹

4.6M

**TOTAL CHD PATIENT
POPULATION**

| Geography | CHD Population | No. Partners |
|-----------|----------------|--------------|
| India | 1.5M | 17 |
| China | 1.2M | 12 |
| Brazil | 430,000 | 9 |
| Vietnam | 327,000 | 6 |
| Malaysia | 124,000 | 3 |
| 3 new LIC | 205,000 | 3 |

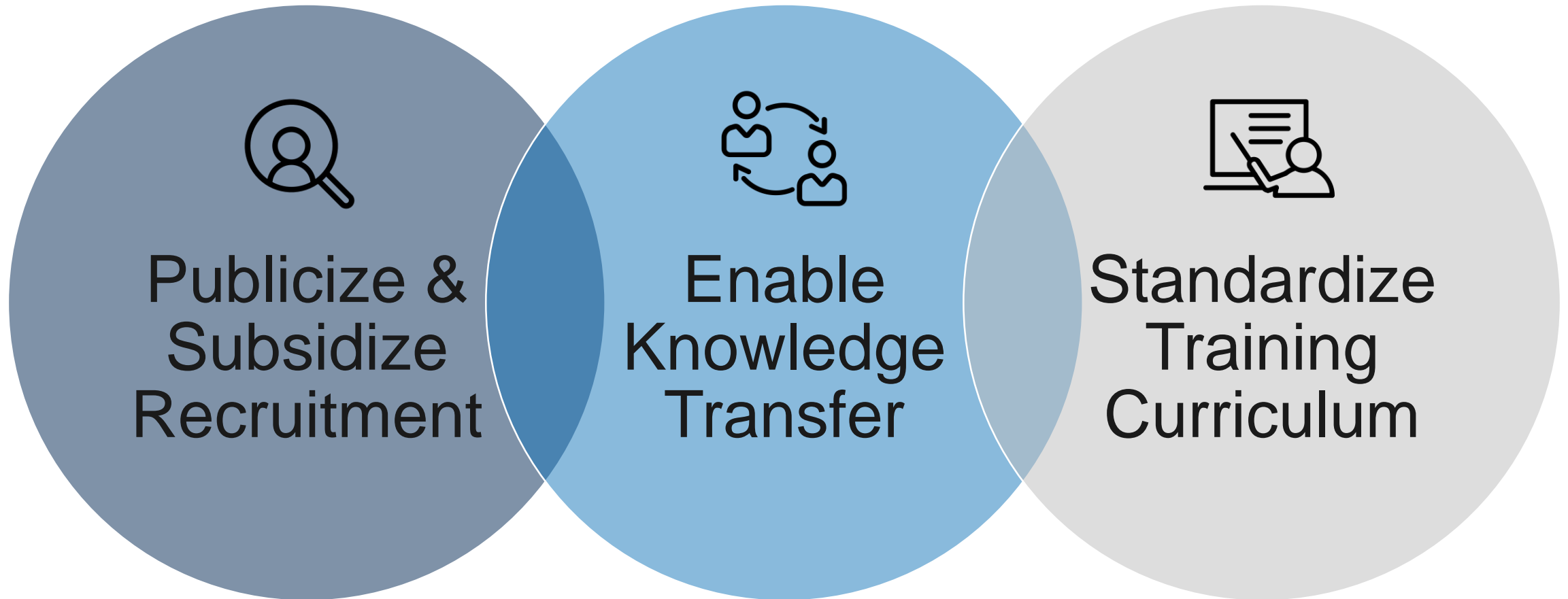
Identifying Enabling Country Environment

| Strength of evidence | |
|----------------------|----------|
| | Strong |
| | Moderate |
| | Weak |

| | China | India | Vietnam | Malaysia | Brazil |
|--|-------|-------|---------|----------|--------|
| Increase in GDP spending on healthcare | | | | | |
| Evidence for successful private-public partnerships | | | | | |
| Overall conditions for establishing training programs | | | | | |
| Evidence of UHC ¹ , essential surgery or clinical skill development | | | | | |
| Presence of philanthropic efforts to support CHD treatment | | | | | |
| Number of medical doctors per 10,000 population ² | | | | | |

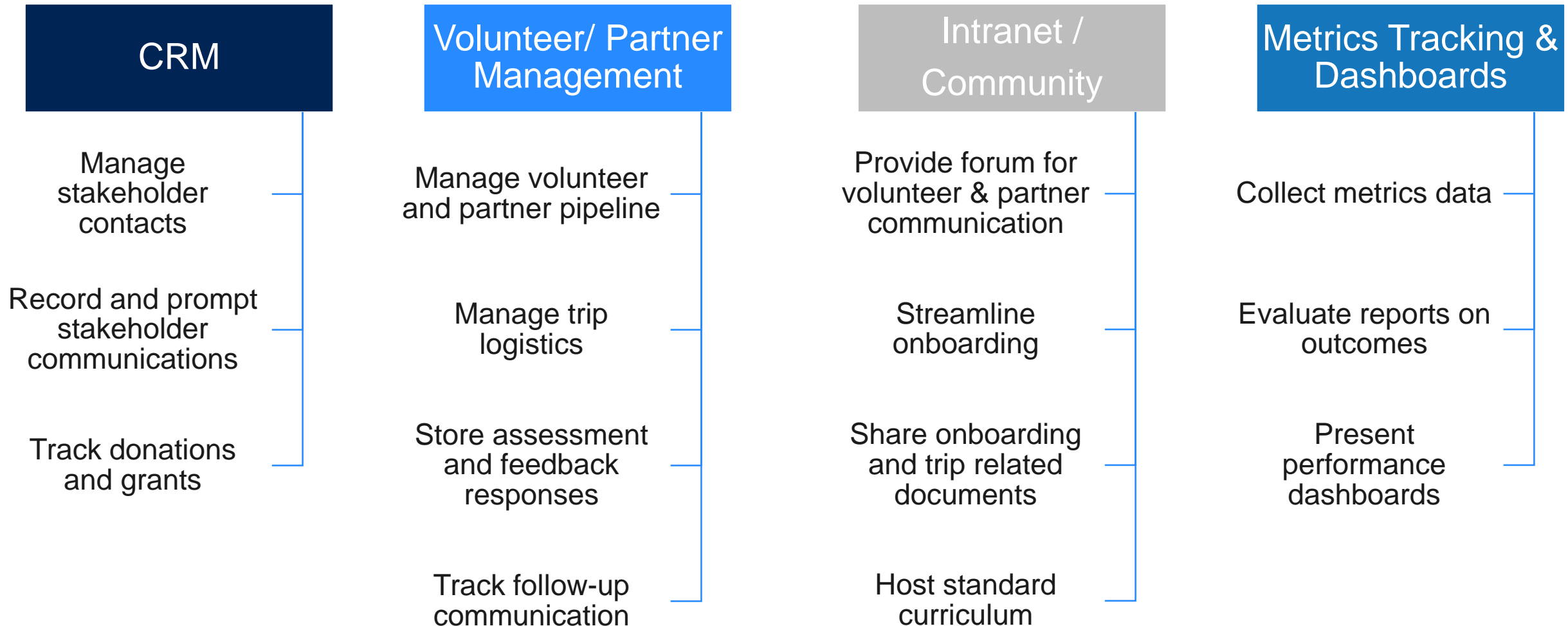
Recommendation: Optimizing Volunteer Management

Bolstering recruitment efforts & enabling global collaboration will help CHL prepare the volunteer model to scale



Data System to Support Operations

A single, integrated data system can help support CHL's work in four areas



Example Data System Solution

Case Study: Hope On A String (HOAS) operated community center in rural Haiti to empower children and adults through music and performing arts

Context

Challenge:

Scattered information made process of tracking student enrollment, retention, and outcomes impossible

Product Solution: Salesforce.org

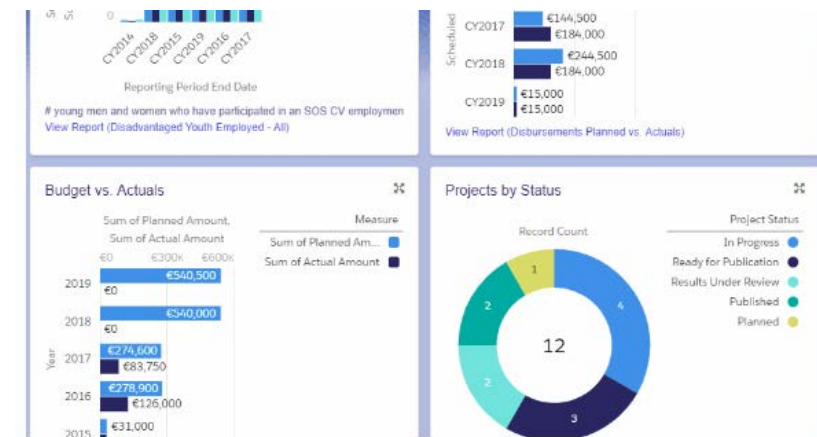
Used by 40K + nonprofits and education institutions globally with dynamic online support community of users and developers on the Power of Us Hub

Potential Cost Considerations

- Licenses
- Initial setup and training
- System admin

Result

- CRM helps HOAS manage donor outreach and pipeline
- Student registration/attendance is now easily trackable and HQ staff have access to real-time, actionable data on program satisfaction surveys and student outcomes



Dashboards for Performance Management

Aggregate phasing metric data can provide insight into site progress

Benefits

- Help CHL internally evaluate performance of partner sites
- Serve as tool for knowledge transfer and transparency among volunteer and partner sites by helping them compare progress and engage in conversations about best practices
- Enable comparison of progress within a hospital over time, and across hospitals
- Act as a communication tool for donors and funding agencies

OVERVIEW

Determine the most relevant metrics to provide insight into site progress over time. Overlay progress chart for all selected sites for easy comparison and display annual information for patients seen, patients treated, and mortality rate

Example Dashboard with One Site

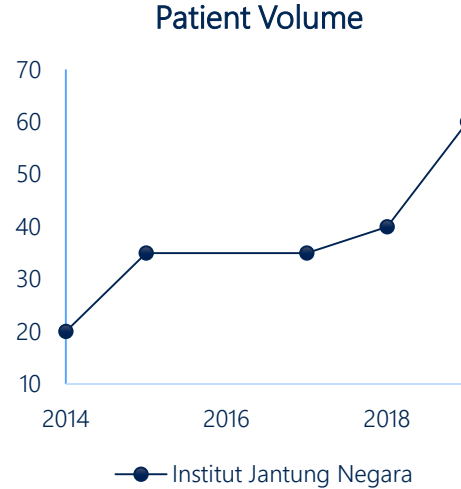
Institut Jantung Negara | COE

Site Selection

- + Brazil
- + China
- + India
- Malaysia
 - ✓ Institut Jantung Negara
- + Vietnam

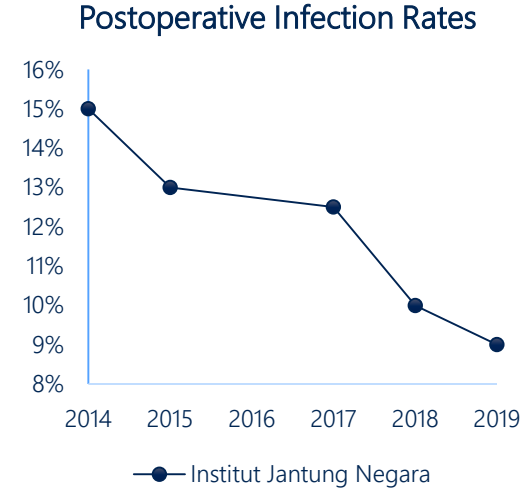
PATIENTS SEEN
2018

40



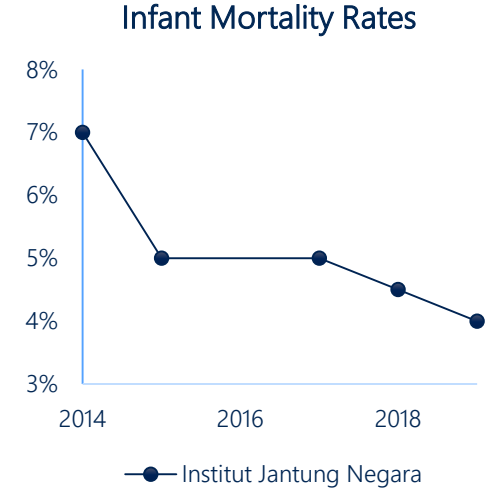
PATIENTS TREATED
2018

33



MORTALITY RATE
2018

4%



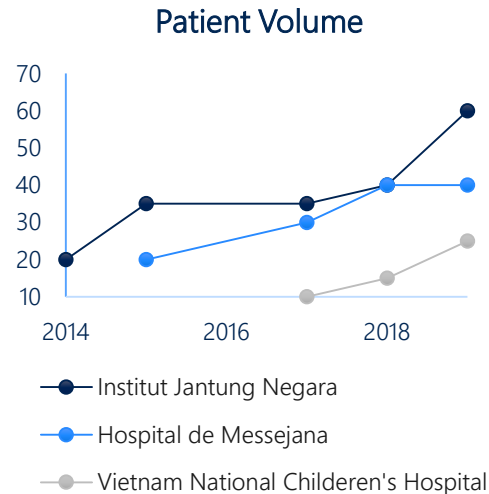
Example Dashboard with Multiple Sites

Hospital de Messejana | Phase 1
Institut Jantung Negara | COE
Vietnam National Children's Hospital | Phase 1

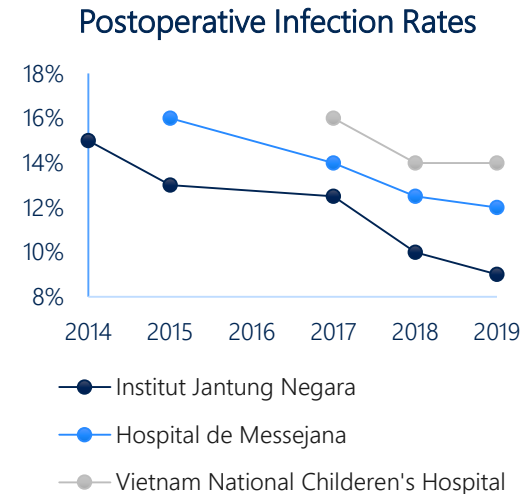
Site Selection

- **Brazil**
 - ✓ Hospital de Messejana
 - Hospital da Crianca e Maternidade
- + **China**
- + **India**
- **Malaysia**
 - ✓ Institut Jantung Negara
- **Vietnam**
 - ✓ Vietnam National Children's Hospital
 - Nhi Dong 1
 - Kien Giang General Hospital

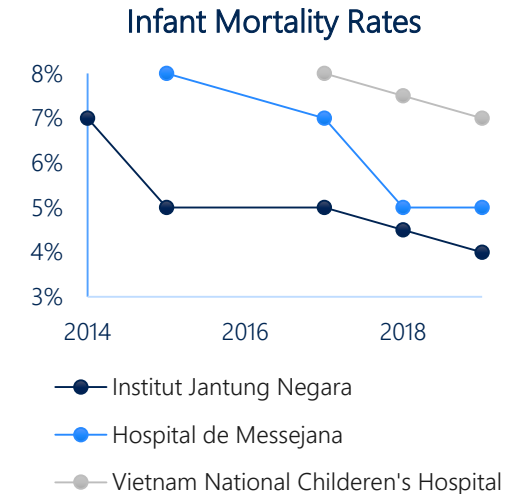
PATIENTS SEEN
2018
95



PATIENTS TREATED
2018
76

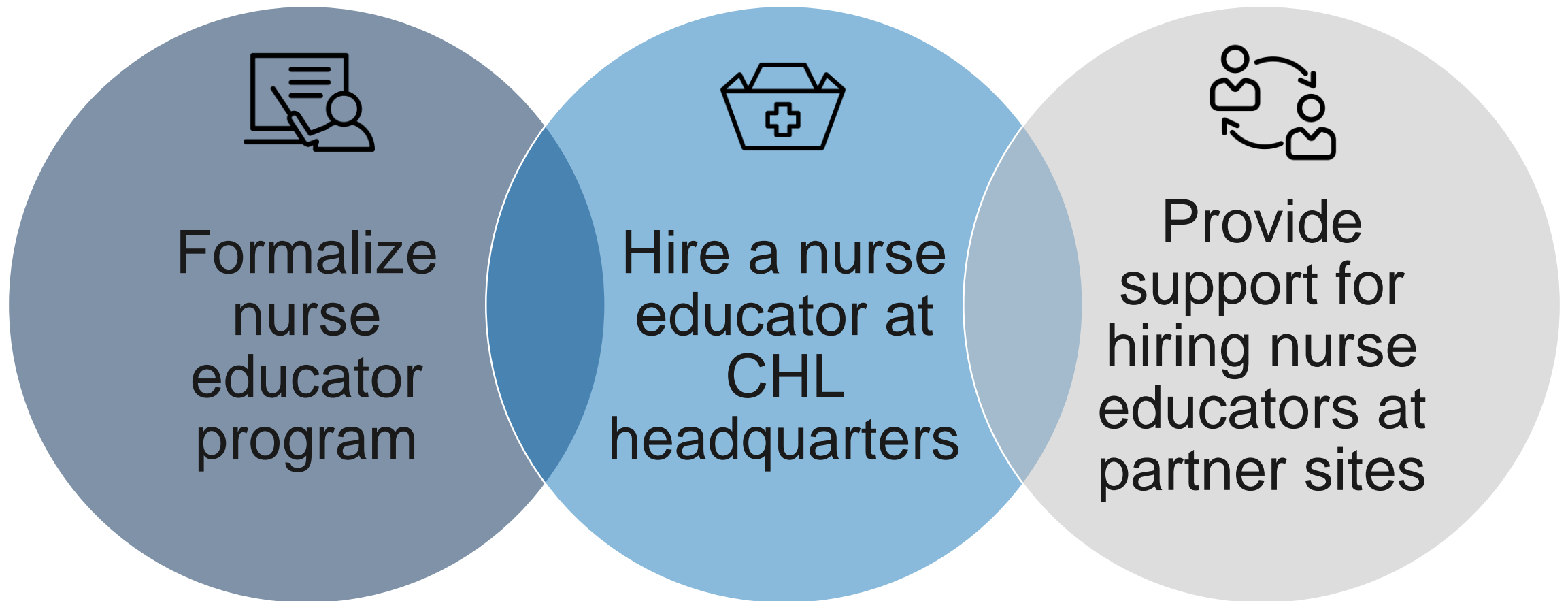


MORTALITY RATE
2018
5.7%



Recommendation: Nurse Educators Are Vital For Success

Nurse educators create a sustainable way to improve competency of nursing staff and reduce turnover



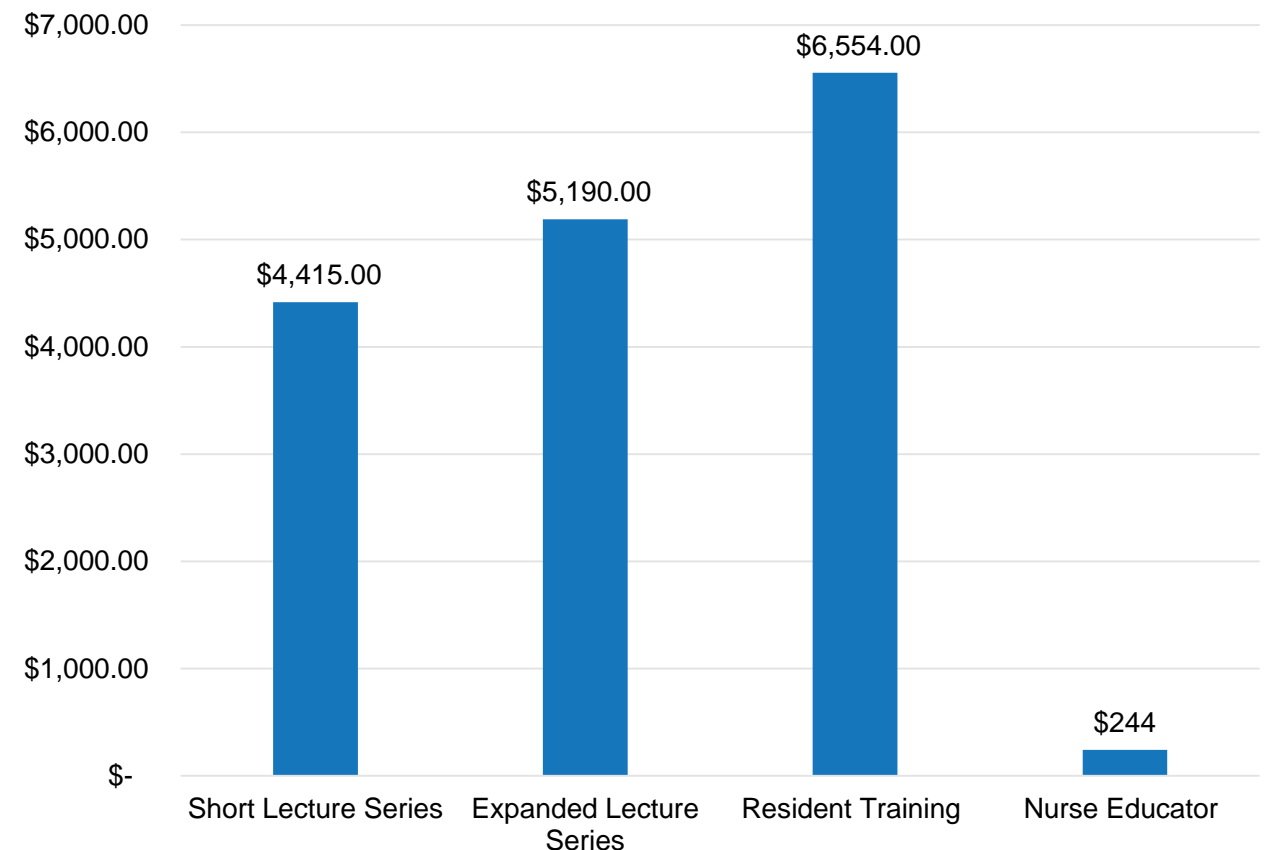
Nurse Educators Are Highly Cost Effective

A case study of nurse educators cost-effectiveness in the pediatric oncology nursing education programs across 7 Latin American countries

Cost comparison results^{1, 2}:

- Short lecture series: 1-2 week lecture series at partner site = \$4,415 / nurse
- Expanded lecture series: 12-week lecture series at partner site = \$5,190 / nurse
- Residential training: 3-month residential training = \$6,554 / nurse
- **Nurse educator: direct costs of salary and benefits of a full-time nurse educator providing education to 49 nurses 01/07-09/09 = \$244/nurse**
- The study was scaled to 13 nurse educators across 7 countries in Latin America

Average Educational Cost per Pediatric Oncology Nurse by Education Model



Key Factors For Hiring Nurse Educators

Accelerating organization change through formalizing nurse educator program

| | AT CHL HEADQUARTERS | AT PARTNER SITES |
|----------------------|---|--|
| Key Responsibilities | <ul style="list-style-type: none">• Develop and maintain curriculum for overall nurse education program• Facilitate development and implementation of PCICU quality control projects• Coordinate data collection from partner sites and provide data analysis | <ul style="list-style-type: none">• Customize and implement nurse education curriculum• Manage PCICU quality control projects• Perform data collection |
| Qualifications | <ul style="list-style-type: none">• Master's Degree¹• International clinical and administrative experience | <ul style="list-style-type: none">• Master's Degree¹• Clinical experience• Local |
| Profile Example | <ul style="list-style-type: none">• Sandra Staveski, PhD, RN, PNP• Jeff Paurus, MS | <ul style="list-style-type: none">• Bruna Curry, MS |

Recommendation: Standardize Phasing

Implement new 15-question annual survey to enable apple to apple comparison of growth between and across sites



Link benchmarks for success to indicators and use IQIC to support clinical data collection and reporting



Implement standard annual survey for partners



Consider one set of core indicators for all sites and adoption of a competency area approach for assessing progress



Long-term: develop and integrate quantitative indicators for non-clinical benchmarks

Core Indicators by Competency Area

Competency area approach uses one set of core metrics across all sites and allows progress to be determined by competency area

| Clinical Care | Multidisciplinary Approach | Regional Leader in CHD |
|---|---|---|
| <ul style="list-style-type: none">• Number of cases, disaggregated by gender• Range of services provided• In-hospital mortality• Development and use of QI system• Development and use of infection prevention and monitoring system• Infection rate• Mortality within 30 days• Number and proportion of patient families who receive counseling and education intervention• Actions taken to support sustainability of QI system | <ul style="list-style-type: none">• Develop team communication plan to support a team-based approach to care• Use of communication plan and/or change management tool for communication• Actions taken or outcomes attributed to adoption of multidisciplinary approach | <ul style="list-style-type: none">• Explore potential partnerships in region with MoH and primary health care systems• Actions taken to show commitment to clinical research• Implement continuing education program for all practitioners at partner hospital• Number of publications and poster presentations on research or lessons learned, disaggregate by formal/informal• Actions taken to show commitment to regional training efforts• Number of trainings and participants |

Black text: available from IQIC

Blue text: collected through annual survey or internal partner activity tracking spreadsheet

Potential Frameworks for Assessing Progress Against Core Indicator Targets

Incremental wins as center builds capacity

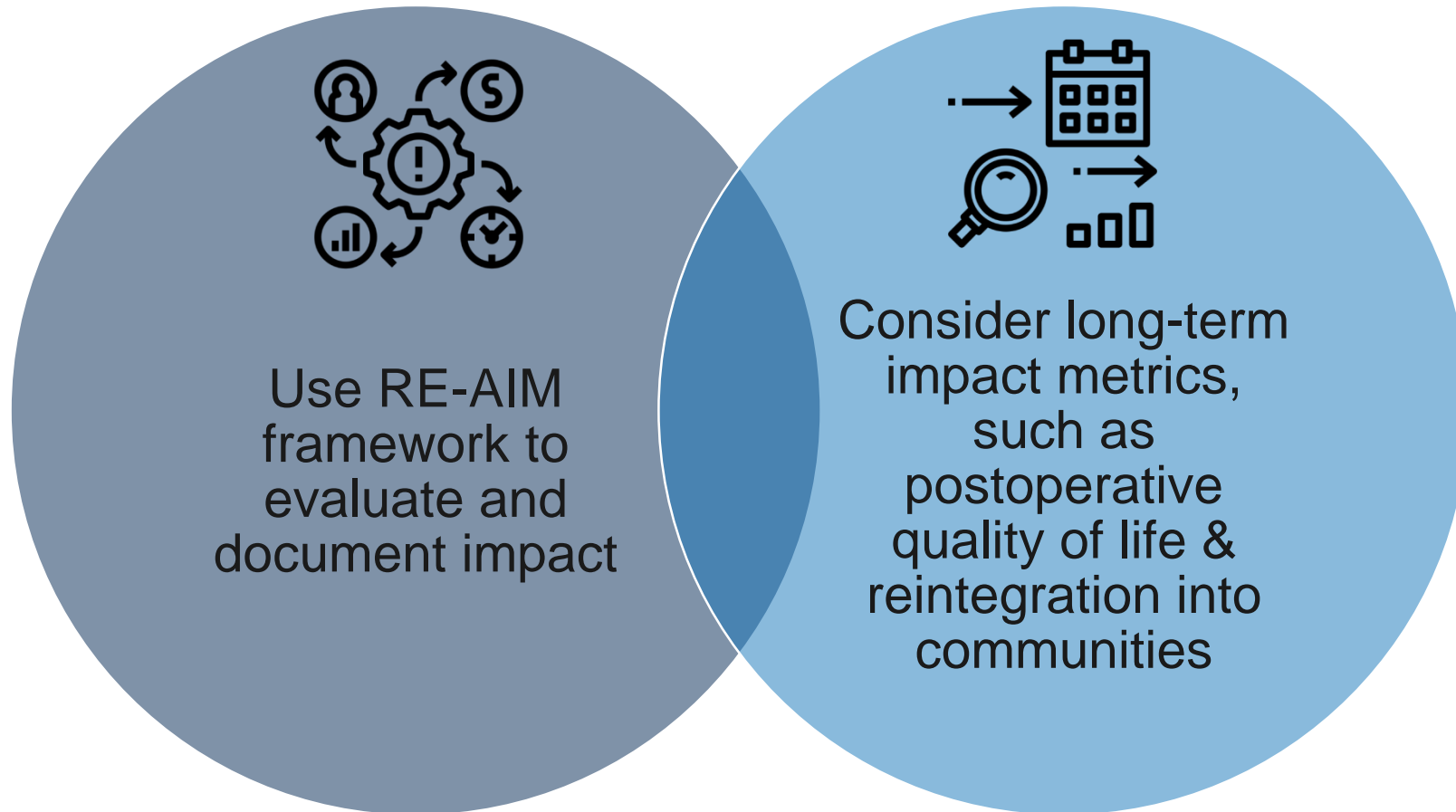
| | Clinical Care | Multidisciplinary Approach | Regional Leader in CHD |
|--------|--|---|--|
| Learn | <ul style="list-style-type: none"> More than 100 cases per year In-hospital mortality baseline determined QI system is developed Infection prevention and monitoring system is developed | <ul style="list-style-type: none"> Develop team communication plan to guide a team-based approach to care | <ul style="list-style-type: none"> Explored potential partnerships in region with MoH and primary health care systems |
| Refine | <ul style="list-style-type: none"> Baseline for mortality within 30 days is established QI system is used to improve clinical outcomes Infection prevention and monitoring system data is used to improve clinical outcomes Infection rate is less than X% Mortality less than 10% The proportion of patient families who receive counseling and education intervention is greater than X% | <ul style="list-style-type: none"> Evidence of communication plan and/or change management tool used to support multidisciplinary team communication | <ul style="list-style-type: none"> Significant actions taken to show commitment to clinical research Implementation of continuing education program for all practitioners at partner hospital |
| Expert | <ul style="list-style-type: none"> Significant actions taken to support sustainability of QI system Infection rate is less than X% Mortality less than 4% More than 250 cases per year Full range of services provided The proportion of patient families who receive counseling and education intervention is greater than X% | <ul style="list-style-type: none"> Evidence of communication plan and/or change management tool used to support multidisciplinary team communication Significant actions taken or outcomes attributed to adoption of multidisciplinary approach | <ul style="list-style-type: none"> Number of publications and poster presentations on research or lessons learned, disaggregate by formal/informal Significant actions taken to show commitment to regional training efforts Number of trainings and participants |

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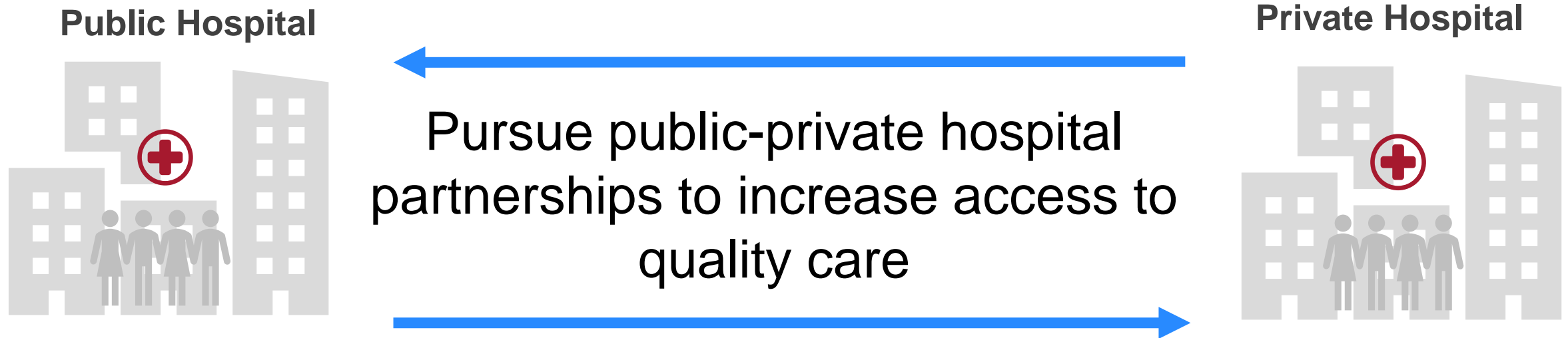
Recommendation: Impact Metrics

Consider adopting new metrics and the RE-AIM framework to convey CHL's impact on CHD



Recommendation: Expanding Impact Through Public-Private Partners

The public-private hybrid hospital model can solve capacity and quality issues, benefiting both sectors simultaneously



Public-Private Partnerships

Capture private sector capital and expertise to improve provision of public health services

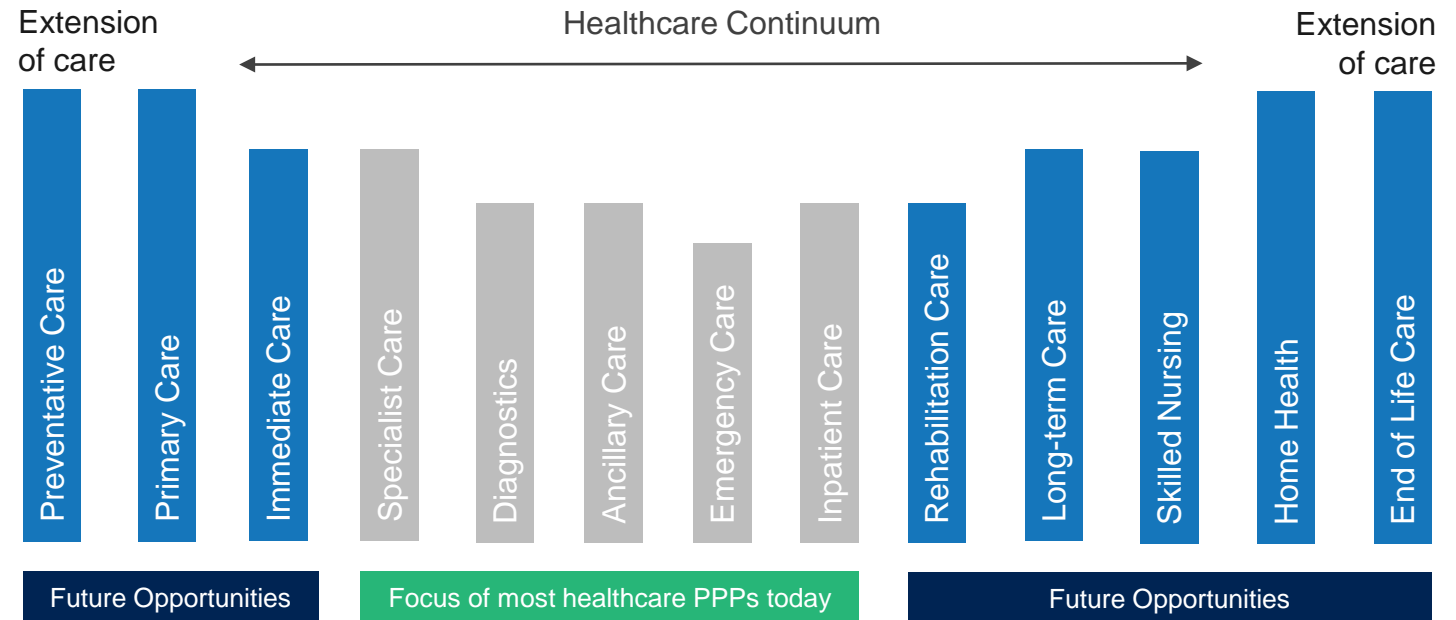
Cross-leverage strengths:

- Private sector: capacity building, clinical expertise, high quality care
- Public sector: access to patients, national insurance schemes

Three most common PPP business models:

1. Infrastructure-based model
2. Discrete clinical services model
3. **Integrated/Hybrid PPP model**

Potential for future PPPs across the healthcare continuum¹



Hybrid Public-Private Model Example: Mexico

“The advantages of each of the different sectors were exploited to create a better model.” –Dr. Alexis Palacios-Macedo



INP-ABC-TCH Partnership

- Care provided at ABC
- MOH agreed to fund 40 positions - multidisciplinary team provided by INP
- Patients referred from INP and other public hospitals
- Surgery conducted at INP or ABC depending on bed availability
- 447 patients (379 from public 68 from private) have undergone surgery
- Overall mortality reduced from 15% in 2012 to 6.6% in 2018

Deeper Look at INP-ABC-TCH Model

Notes from a stakeholder interview with Dr. Alexis Palacios-Macedo & Blanca del Valle Perochena

Success Factors

- Seguro Popular covers treatment in private hospitals
- ABC cross-subsidizes public care with portion of profits
- Kardias Foundation support
- Twinning partnership with TCH
- Dedicated, full-time team
- Joint Commission certification



Challenges

- Insufficient volume of private patients
- High-income patients seeking care in another country
- Weak referral networks
- Patients loyalty rests with doctors instead of institutions



Hybrid Public-Private Model Example: Vietnam

Vietnam's enabling environment and buy-in to a hybrid hospital program offers a promising opportunity for CHL



Gia An 115 Hospital (Established 2018)

- First hospital established under PPP model
Approved by People's Committee of HCMC to relieve patient overload at public hospitals
- Engages specialists from state run People's Hospital 115 to work at private Gia An 115 to ensure provision of specialized services
- Grand opening ceremony campaign by doctors and nurses raised \$27 thousand for "Healing Heart Beat" project to provide treatment for CHD for low-income families

Hybrid Model Facilitators & Barriers

Facilitators and barriers to the success of public-private hybrid hospital partnerships were identified as common themes in country case studies

Facilitators

Political

- Enabling regulatory and political environment
- National public health insurance coverage

Organizational

- Sufficient patient volume and provider expertise
- Sufficient volume of privately insured patients
- Demand-side control factors
- Teams solely dedicated to hybrid program
- Internal champions
- Philanthropic support

Barriers

Political

- Partnerships subject to changing political whims
- Trust deficit
- Labor union rules that limit work schedule flexibility
- Insufficient salaries of public providers

Organizational

- Not enough private patient-flow for cross-subsidy sustainability
- Mismatched organizational styles and differing priorities
- Lack of sustainable funding source

Hire/Expand Role of In-Country Managers

In-country managers can lead country-level advocacy, local fundraising, and can support data collection

Role & Responsibilities

- Advocate for issues that support CHD care, such as expansion of insurance to include CHD services or government programs for early detection
- Develop relationships with local philanthropists and organizations to explore local fundraising opportunities
- As M&E efforts expand, provide support to partner hospitals for data capture, management, and reporting, particularly for indicators outside of IQIC

Profile

- Local connections with MoH/government officials
- Policy/advocacy experience
- Fundraising experience
- Monitoring and evaluation experience

Example

Blanca del Valle Perochena

- Vice President of the Board of Directors of Kardias, a foundation for children with heart disease
- Supporting Kardias to professionalize and develop a strategic plan

Recommendation: Partnerships for Sustainability and Influence

Partnerships can help CHL gain access to influential decision-makers and raise its profile as the preeminent global CHD thought leader



Medical & nursing associations to influence relevant national policies



NGOs to expand CHL's reach



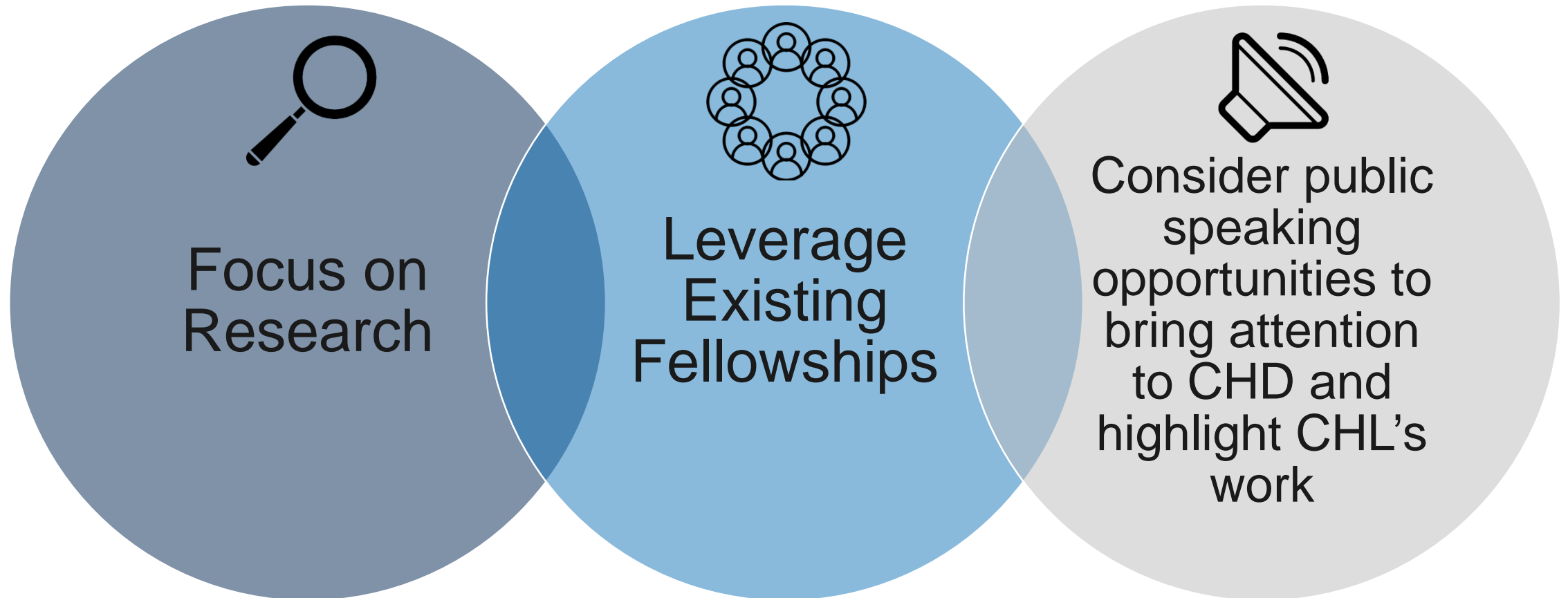
Corporate giving programs to diversify funding



Local philanthropists to diversify funding and gain influence

Recommendation: Supporting the Research Agenda

Opportunity to increase research efforts through CHL Fellowship & participating in existing research focused fellowships



Leverage Students & Existing Fellowships

Opportunities to support research efforts through existing research focused fellowships & public health students

Existing fellowship opportunities to support junior researchers

Fogarty funding

- Funds US fellows to go to partner hospitals to conduct independent research and to support broader research efforts at the hospital

Northern/Pacific Global Health Fellows

- Fellows pursue a wide range of research opportunities including into cardiovascular disease. Researchers are paired with a team of mentors to provide support over the course of the fellowship

Work with public health graduate students

- Inexpensive way for CHL to support research and/or M&E efforts
- MPH students usually need to complete a practicum
- PhD students are looking for dissertation projects
- Students are looking for real world experience and on-going projects

Conclusion

Implementing Recommendations

Building on CHL's success will have significant organizational implications in a few areas

Staffing

- Expand volunteer pipeline
- Expanded roles of country directors
- Nurse educators – CHL HQ and at partner hospitals
- Fundraising specialists

Knowledge Sharing

- CRM
- Develop standardized core curriculum
- Integrated communication for volunteers

Partnerships

- Extend partnership strategy

Phasing

- Standardize core metrics
- Develop and conduct standardized annual survey for all partner hospitals

