



# Childhood Cancer Drug Access in the Caribbean Region: A SickKids Caribbean Initiative Study

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Health Systems Strengthening for  
Childhood Cancer in the Caribbean  
PAHO Regional Meeting  
Port of Spain, Trinidad & Tobago  
Feb 11-12, 2020



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Garron Family Cancer Centre in collaboration with the Centre for Global Child Health at The Hospital for Sick Children (SickKids)

# Agenda

- Background
- Study Goals & Methods
- Findings
- Results
- Discussion
- Conclusion



Childhood Cancer Drug Access in the Caribbean Region

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# Background

**Problem:** Lack of context-specific data on drug need and determinants of access

## PAHO Childhood Cancer Working Group

Improving childhood cancer care in Latin America and the Caribbean: a PAHO Childhood Cancer Working Group position statement



THE LANCET Oncology

	Challenges	Lessons
Governance	Insufficient governance capacity: absence of national childhood cancer plans, accreditation processes and treatment protocols Competing agendas in context of multiple needs divert attention from childhood cancer	International collaboration as facilitator of knowledge translation for context-sensitive programmes and standards Broad stakeholder engagement is key to increase political visibility of childhood cancer agenda
Access to medicines	Erratic supply of EML medicines for children with cancer: decentralised purchasing, weak procurement and supply management processes, and poor pharmacovigilance	Role of PAHO Strategic Fund to facilitate pooled procurement, improved supply management, and quality assurance to overcome existing market failures
Health workforce	Limited resources invested in human and infrastructural bases of childhood cancer care	Potential to regionalise health workforce training and translate successful models across jurisdictions
Financing	Constrained public resources in the context of competing health system priorities, perceived opportunity costs of resource allocation	Opportunities for innovative financing through cross-sector models, including private sector and civil society in public-private partnerships
Service delivery	Coordination and continuity of care: treatment delay and abandonment due to insufficient diagnostic or therapeutic capacities and sociodemographic barriers	Centralised referral of high complexity care and carefully distributed follow-up as a feasible model to increase coordination across the care continuum
Health information systems	Absence of reliable epidemiological and outcome evidence on which to adjudicate system performance	Opportunities for cross-country diffusion and scale-up of childhood cancer registry structures and processes

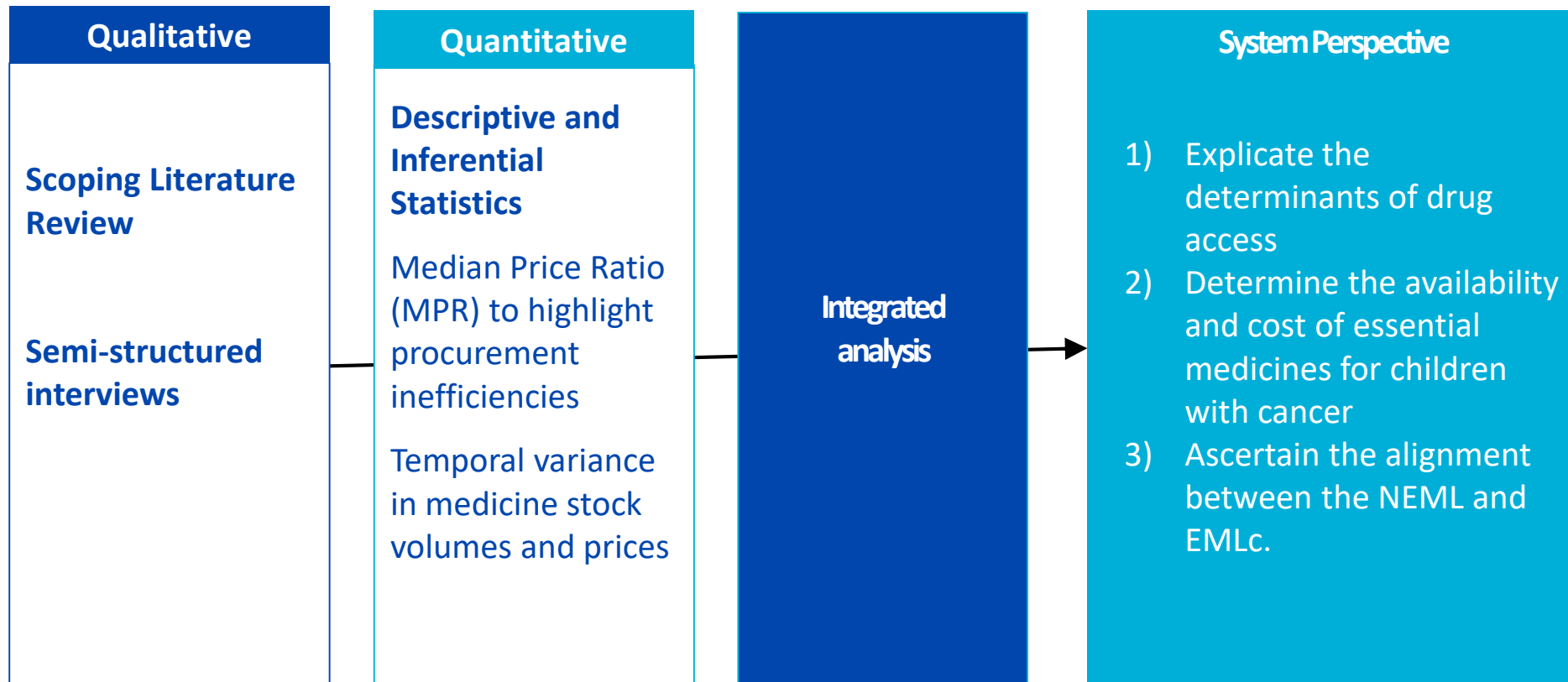
EML=WHO essential medicines list.

**Table:** Major challenges and lessons for childhood cancer system strengthening in Latin America and the Caribbean

Childhood Cancer Drug Access in the Caribbean Region

# Study Goals & Methods

Design: convergent parallel mixed methods



# Study Goals & Methods

- The Bahamas: Princess Margaret Hospital
- Barbados: Queen Elizabeth Hospital
- Jamaica: University Hospital of the West Indies & Bustamante Children's Hospital
- Trinidad & Tobago: Eric Williams Medical Sciences Complex

Informants	The Bahamas	Barbados	Jamaica	Trinidad & Tobago
Healthcare Providers	4	4	11	3
Policymakers & Civil Servants	5	2	4	4
Civil Society Organizations	2	6	1	
Representatives from pharmaceutical companies		1	2	
Other				1



**50 Informants**



# Findings

Pharmaceutical Environment

Major Stakeholders

Drug Access Determinants

Process Map (Trinidad & Tobago)



# Pharmaceutical Environment

	Jamaica	Barbados	Trinidad & Tobago	The Bahamas
<b>National Formulary</b>	List of Vital Essential and Necessary Drugs and Medical Sundries for Public Health Institutions	Barbados National Drug Formulary	Pharmaceutical VEN Listing	National Formulary Essential Drugs List
<b>National Procurement Agency</b>	National Health Fund University Hospital of the West Indies Procurement Unit	Barbados Drug Service Queen Elizabeth Hospital Board	The National Insurance Property Development Company Limited	Supplies Management Agency
<b>Drug Financing/ Medicines Coverage</b>	Subsidized pediatric drugs at public pharmacies Out-of-pocket expense at private pharmacies	Free formulary pediatric oncology drugs at public institutions	Free formulary pediatric oncology drugs at public institutions	Free formulary pediatric oncology drugs at public institutions
<b>Tender Process</b>	National Competitive Tender  Three years	National Competitive Tender  Two years	National Competitive Tender  Annual	National Competitive Tender  Two years

# Major Stakeholders

## The Bahamas

- Private Suppliers
- Ministry of Health
- Public Hospital Authority
- Supplies Management Agency
- Princess Margaret Hospital
- 2 Civil Society Organizations
- Pharmaceutical Suppliers
- National Health Plan



## Trinidad & Tobago

- Chief Medical Officer
- The National Insurance property Development Company Limited
- Chemistry, Food and Drugs Division
- Eric Williams Medical Sciences Complex
- Civil Society Organizations
- National Drug Advisory Committee

## Regional Stakeholders

- Pan American Health Organization (PAHO)
- Caribbean Public Health Agency (CARPHA)
- Caribbean Regulatory System (CRS)
- Caribbean Community and Common Market (CARICOM)

## Barbados

- Ministry of Health & Wellness
- Queen Elizabeth Hospital
- Barbados Drug Service
- Drug Formulary Committee
- 3 Civil Society Organizations
- Pharmaceutical Suppliers

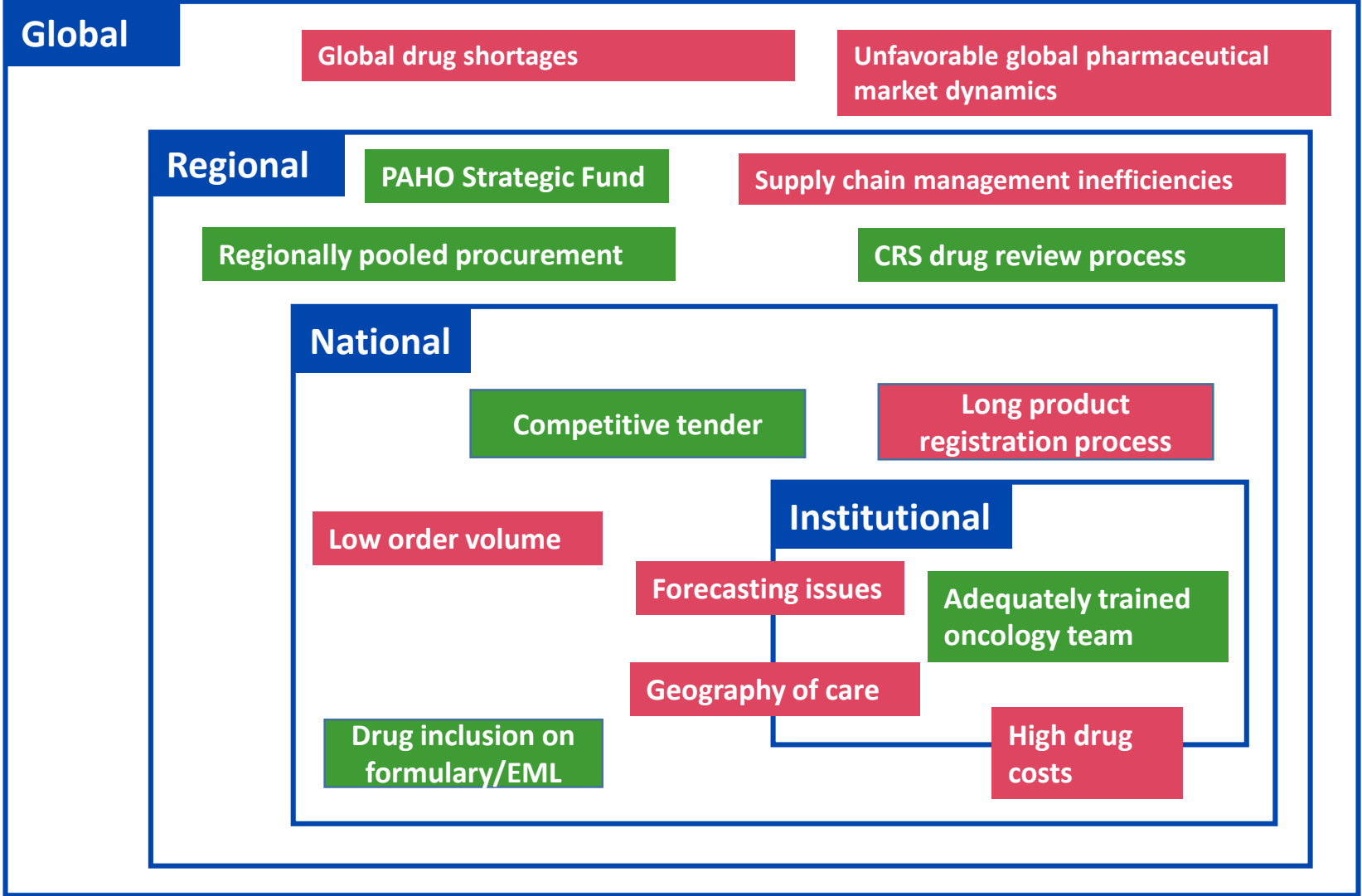


## Jamaica

- Ministry of Health & Wellness
- National Health Fund
- C.H.A.S.E. Funds
- Drug Formulary & Essential Medicines List Committee
- Bustamante Hospital for Children
- University Hospital of the West Indies
- 7 Civil Society Organizations
- Pharmaceutical Suppliers



# Drug Access Determinants



Barrier

Enabler

# Drug Access Determinants

## PAHO Strategic Fund

- Procurement agencies are keen on using Strategic Fund
- Major Drawbacks
  - Country cannot meet minimum order
  - Large upfront cost outlays
  - Central warehousing critical

*“When we look at the vast list that they’ve sent us and you look at the **minimum amount** that’s one issue. The other problem is that the amount that we’d have to buy even when we can meet the minimum, the manufacturer’s want to send us the entire amount one time which means that we have to expend **a year’s expenditure** in one shot and then we have to then **store a year’s worth of stuff**. That does not work well for us. And then lastly, when we did price to price comparison **some of the stuff wasn’t cheaper**. The ones that were when we looked at the overall cost of having to bring everything in and pay it all upfront, it didn’t make sense. It **wasn’t the best use of money** particularly when the government has probably moved more and more towards month to month releases of money rather than huge chunks of money.”*

- Civil Servant

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# Drug Access Determinants

## Unfavorable Global Pharmaceutical Market Dynamics

- Pharmaceutical companies
  - Favor larger markets
  - Inconstant and variable supply across the region, resultant inequities
- Drug ownership transferred between conglomerates
  - Challenge to reliable drug sourcing
  - Price volatility following new acquisitions and portfolio changes

*“Drugs aren’t really made for us. They are made for big countries. So if a drug comes off the [production line], you don’t get it. You get it after a year shelf life.”*

-Procurement Agent

*“What I would want to see is them giving us any kind of priority. The countries that can buy the large amounts will get priority and then whatever is left then we will get access to.”*

-Healthcare Provider

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# Drug Access Determinants

## Low Order Volume

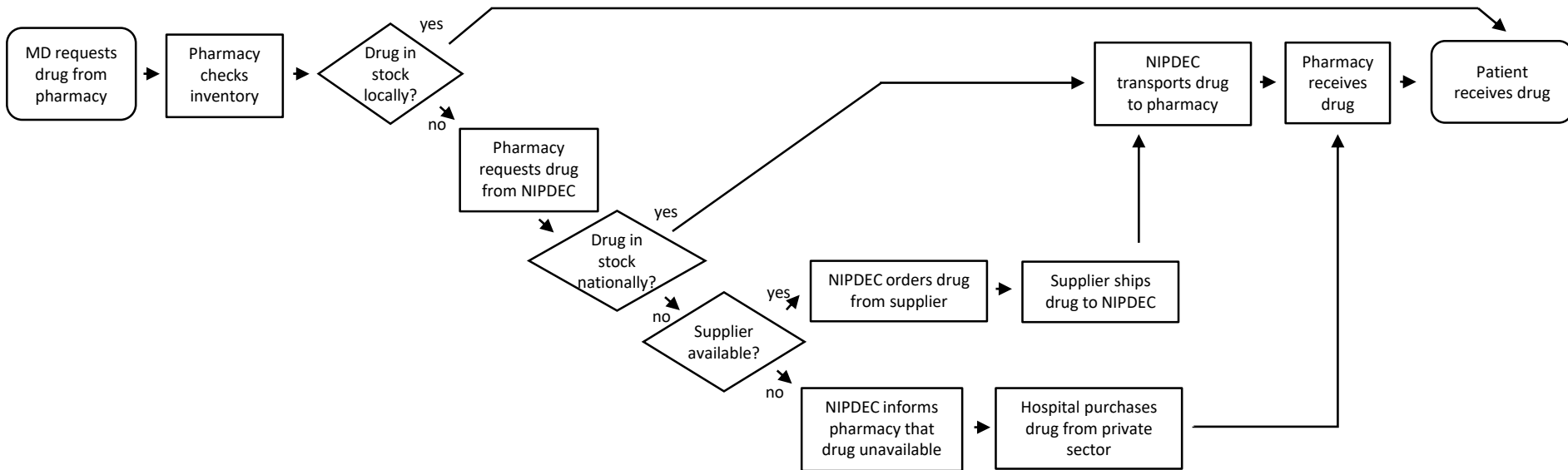
- Inability to benefit from economies of scale
  - Allied to weak forecasting mechanisms
- Countries must go through wholesalers
  - Added markups
- Delays in drug receipt

*“The fact is that as a small region, our quantities are very small and it may not be very profitable to the big suppliers in the global market”*

-Civil Servant

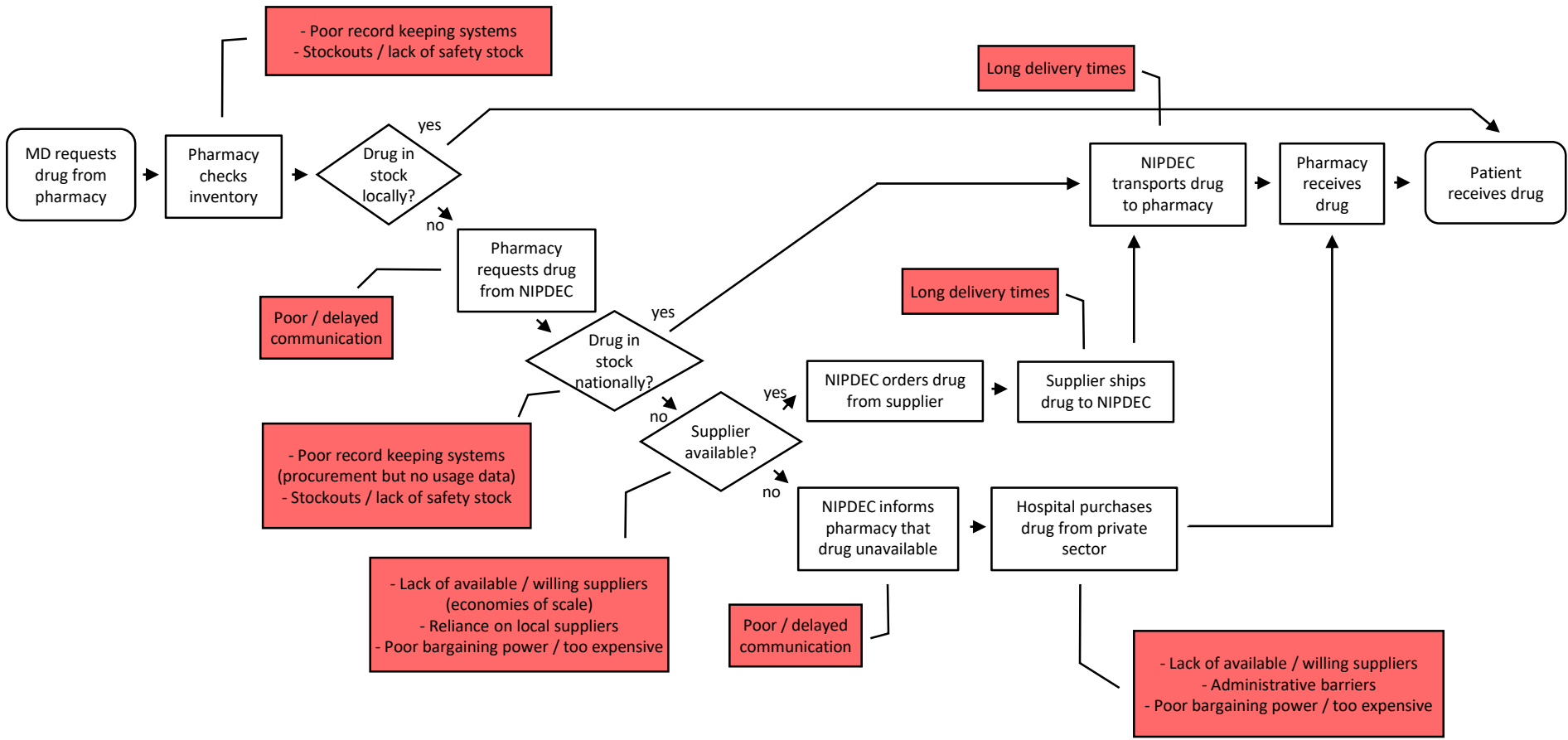
# Process Map (Facility-level)

## Eric Williams Medical Science Complex

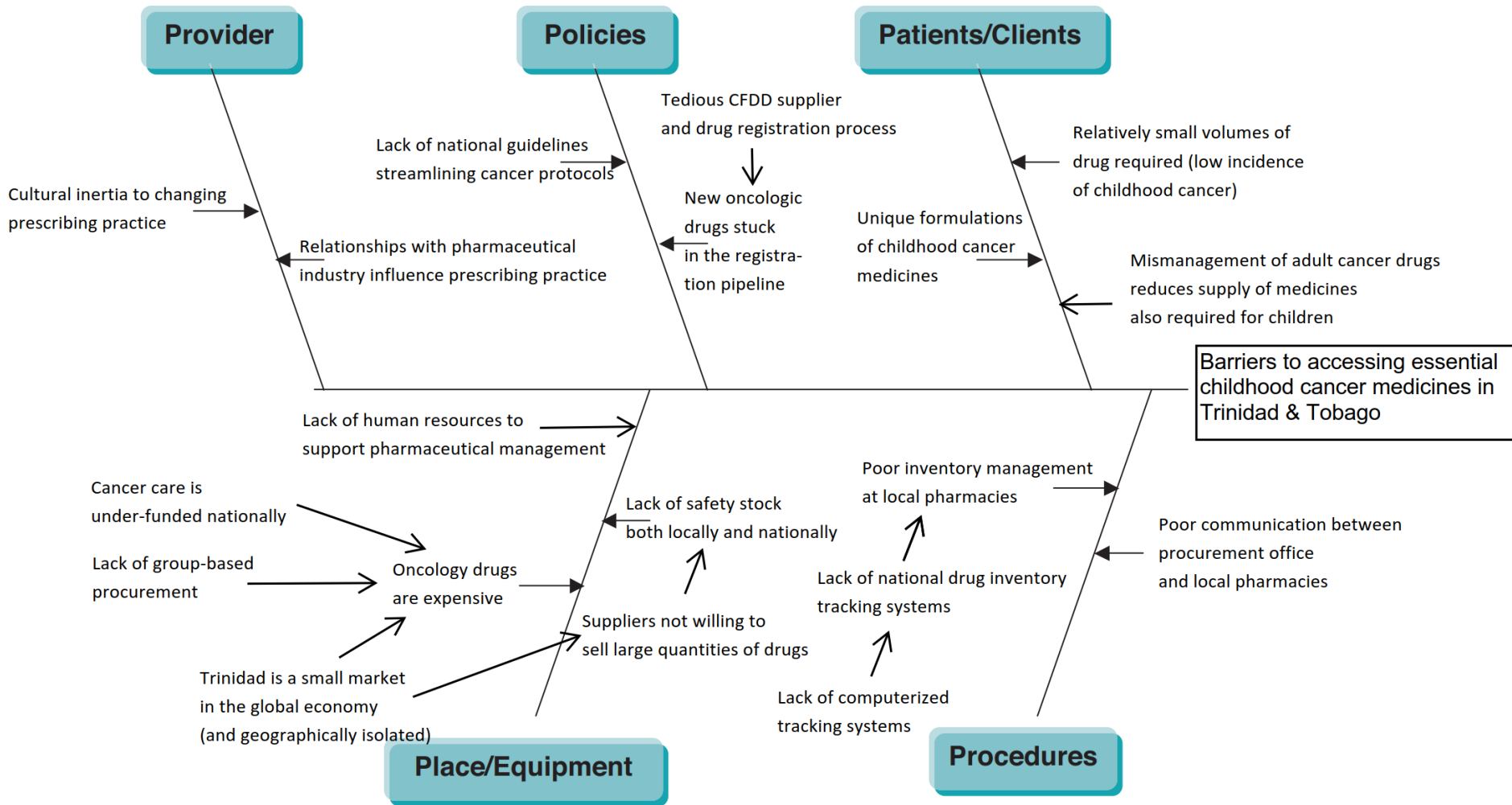


# Process Challenges (Facility-level)

## Eric Williams Medical Science Complex



# Root Cause Analysis (Ishikawa Diagram)





## Results

- EML Alignment
- Procurement Inefficiencies
- Availability
- Price Differences

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# Essential Medicine List Alignment

List	Trinidad & Tobago (VEN List, 2010)	Jamaica (VEN List, 2015)	Barbados 2018-2020	The Bahamas	
				Essential Drug List	National Formulary
WHO Model List of Essential Medicines for Children (2017)	17/19= 88%	18/19=93.5%	15/19= 84.6%	11/19= 76.9%	16/19=84.6 %
Drugs on NEML but not on WHO EMLc	Mitoxantrone Imatinib* Irinotecan* Fluorouracil Epirubicin Docetaxel	Docetaxel Fluorouracil Temozolamide	Imatinib* Fluorouracil Epirubicin Docetaxel	Irinotecan* Fluorouracil Docetaxel	Dasatinib* Docetaxel Fluorouracil Imatinib* Irinotecan*
Drugs on WHO EMLc but not on NEML	Dacarbazine Thioguanine	Thioguanine	Asparaginase Dactinomycin Ifosfamide Thioguanine	Cytarabine Dacarbazine Dactinomycin Etoposide Ifosfamide Mercaptopurine Thioguanine Hydroxyurea	Etoposide Ifosfamide Thioguanine

\*added in 2019



# Procurement Inefficiencies

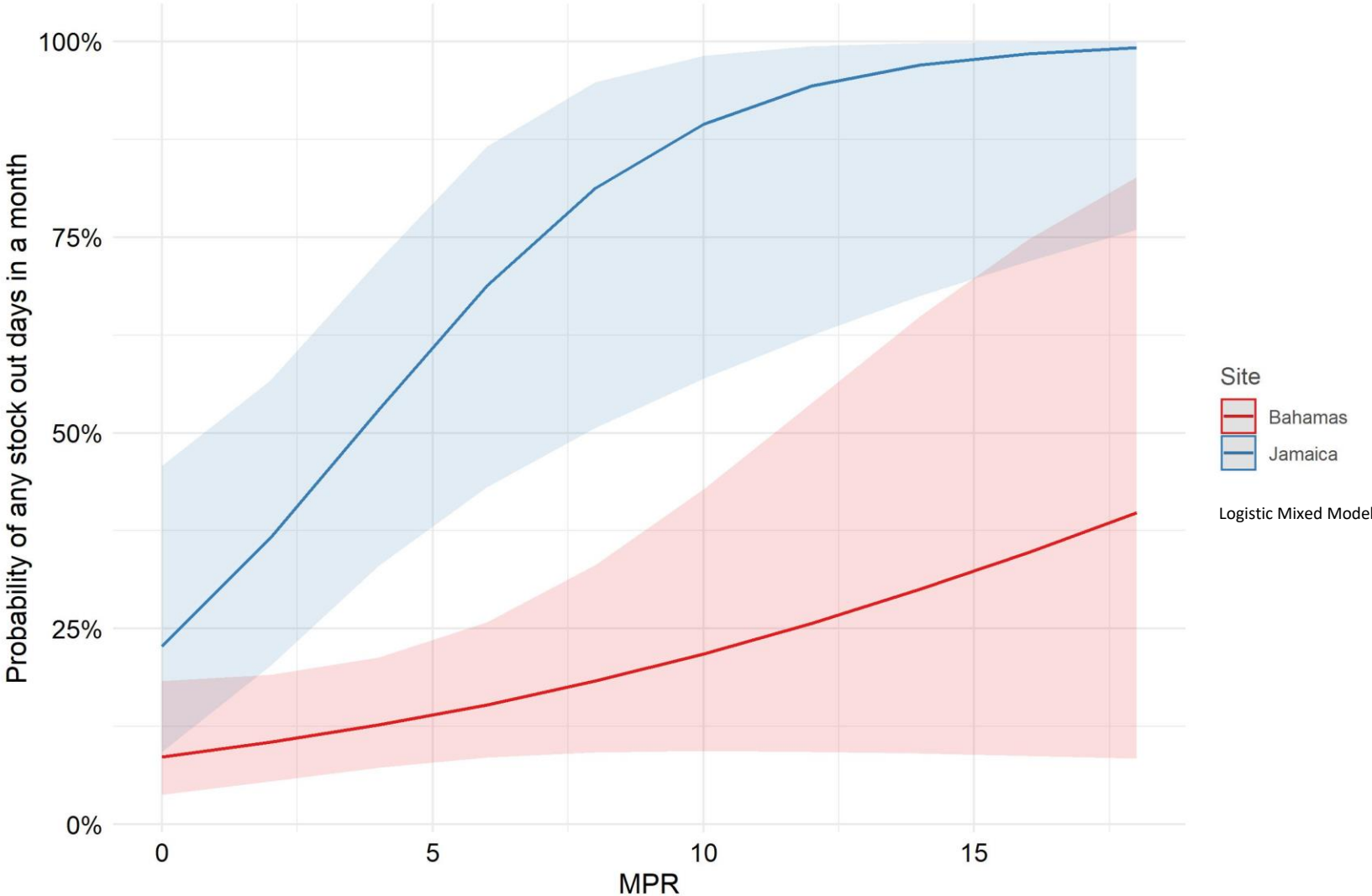


MPR  $\leq 1.5$  as efficient public sector procurement

- **Jamaica:** 7 /14 (50%) above threshold
  - Average= 1.78
  - Median= 1.00
  - Min: 0.23
  - Max:12.07
- **Bahamas:** 12/30 (40%) above threshold
  - Average: 3.58
  - Median: 2.18
  - Min: 0.21
  - Max: 16.70
- **Barbados:** 17/25 (68%) above threshold
  - Average: 3.87
  - Median: 2.00
  - Min: 0.34
  - Max: 19.03

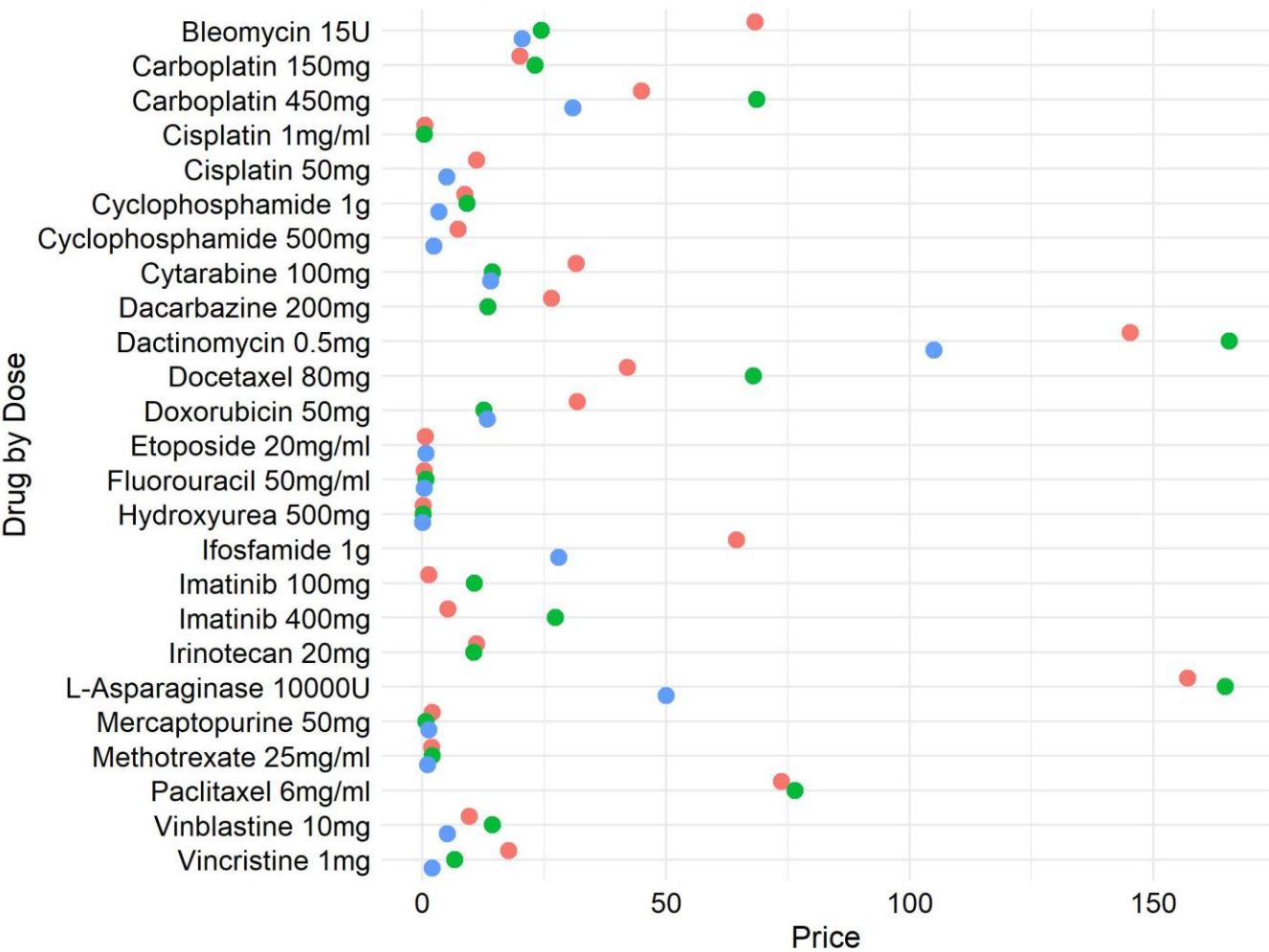


# Impact of Procurement Inefficiencies and Site on Availability



# Did Drug Prices differ significantly across sites?

Price by Drug and Site



Country	Mean Price	N
Bahamas	34.53	27
Barbados	34.03	21
Jamaica	16.66	17

p=0.003

Site  
 ● Bahamas  
 ● Barbados  
 ● Jamaica



- **Major takeaways**

- Barriers to drug access appear on several system levels
- Prices differ dramatically in The Bahamas and Barbados compared to Jamaica
- Procurement inefficiencies affects availability

- **Strengths**

- Mixed methods approach
- Comprehensive perspective on access

- **Limitations**

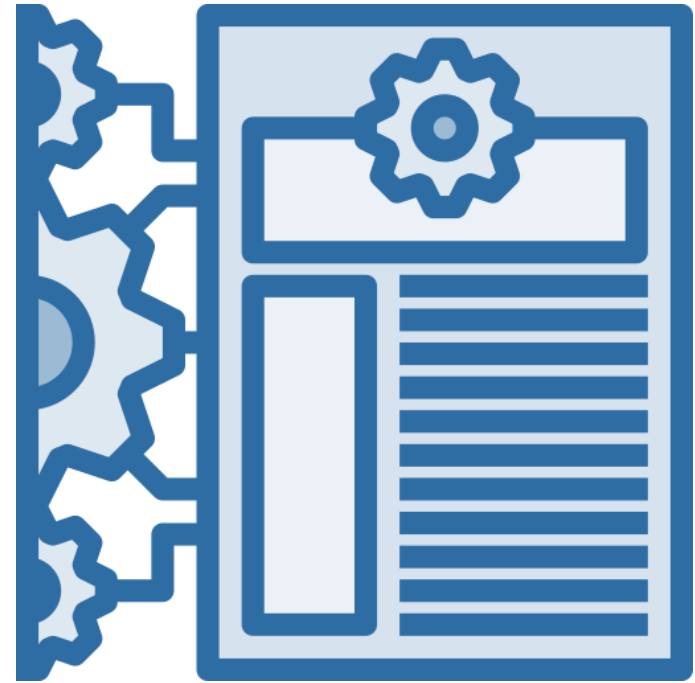
- Retrospective analysis of CCD stocks and prices relied on existing institutional record-keeping processes, with potential implications for data accuracy.
- 2015 MSH price referencing



# Policy Considerations

Actionable Root Causes*	Change Idea	Effort	Impact	Priority*
Small, fractured markets	Increase participation in PAHO Strategic Fund	M	H	H
Lack of consistent national cancer treatment guidelines	Developing national oncology protocols; streamlining selection of national oncology formulary	M	H	H
Variable record-keeping locally and nationally	Develop standard operating procedures for record keeping; invest in electronic record-keeping systems	H	H	H
New oncologic drugs stuck in the registration pipeline	Hire dedicated personnel for drug registration	L	M	M
Poor communication between procurement office and local pharmacies	Develop standard operating procedures to manage stockouts	L	M	M

- Improve data collection
  - Consistent drug availability including inventory reports and prices
  - Digital record keeping for easy data export and analysis
  - Augmented training for pharmacists
- Pooled procurement
  - PAHO Strategic Fund: address challenges to regional pooled procurement and participation
  - Twinning procurement programs between large and small markets



# Childhood Cancer Drug Access in the Caribbean Region: SickKids Caribbean Initiative Study

## Study Team

- SickKids Caribbean Initiative
- Rhonda Boateng
- Dr. Kadia Petricca
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## Acknowledgements

- Supriya Parikh & Bryan Maguire, Biostatistics, Design and Analysis, SickKids
- National Health Fund (Jamaica)
- Laura Fields, Queen Elizabeth Hospital
- Tristan Gaime, Princess Margaret Hospital



# Questions?



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