



Health system assessment for safe surgical care in rural Nicaragua

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Global Initiative for Children's Surgery
Operation Smile Nicaragua

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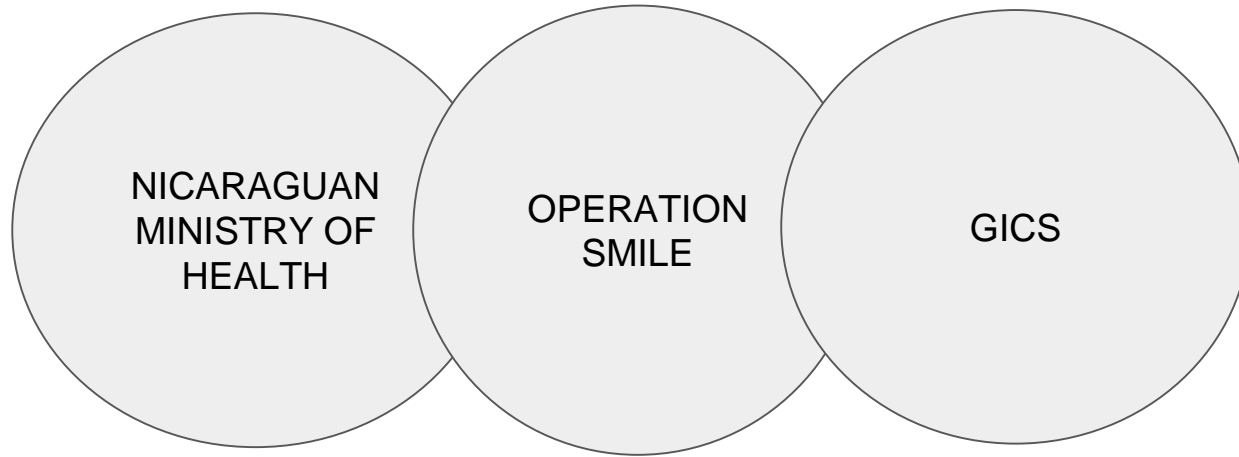


Background



- Globally 5 billion people lack access to surgical care (Meara J et al.)
 - rural populations vulnerable
- 5.9 million spread over 130,373 square kilometers
- One of the least dense countries in the world
- Rural population face significant barriers to accessing surgical care: distance, poor road infrastructure, extreme weather, & poverty

Partnership



Aim

- To implement an integrated surgical project with health facility and community interventions
 - A baseline assessment of the Nicaraguan health system's capacity to provide safe surgical care in its rural zones

PHASE I Baseline Assessment

MOH data review &
Organization Desk Review to
evaluate burden of disease &
end user satisfaction

Hospital Infrastructure
Assessment

Surgical workforce

Baseline hospital outcome
measures

Baseline assessment at control
sites

Stakeholder workshops to
assess needs & priorities

PHASE II Implementation

Surgical Care Provision

Weekly data collection on
hospital outcome measures

Monthly data collection on
community outcome
measures

Interim evaluation at 6
months

PHASE III Review Impact

Compare baseline &
post implementation
community outcome
measures

Compare baseline &
post implementation
hospital outcome
measures

Compare outcomes at
implementation and
control sites

Data analysis & Reports

Dissemination of results
& stakeholder meetings

PHASE IV Scale Up

Baseline assessment at scale up sites

Implementation at scale up sites

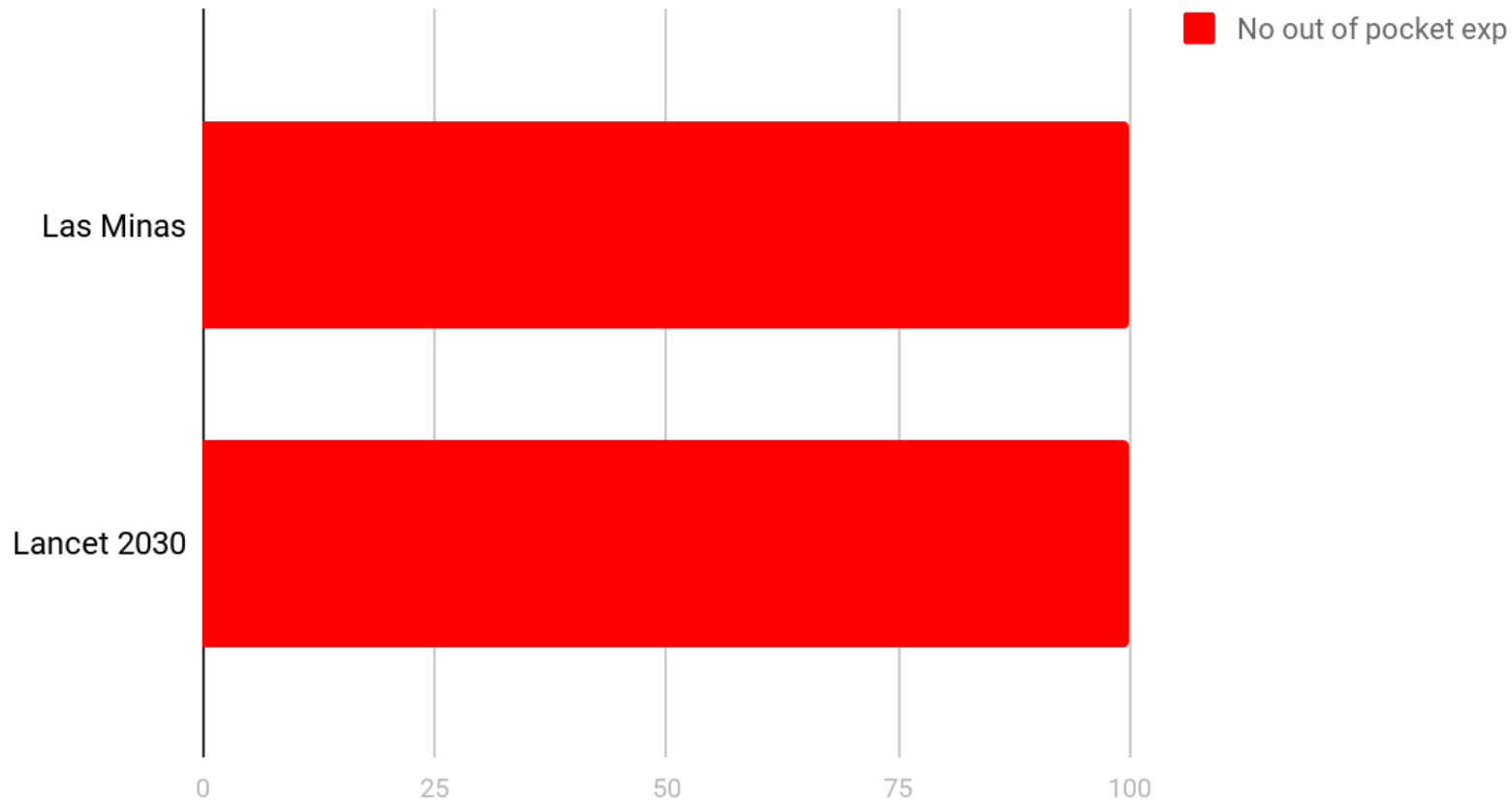
Review impact at scale up sites

Methods:

- A retrospective analysis
- 2 district hospitals in the Northern Pacific Region: Siuna & Bonanza
- Outcome measures: surgical workforce density, surgical volume, perioperative mortality rates, equipment/infrastructure, access to essential medicines, & financing

Tools	
1.	World Health Org Surgical Assessment Tool
2.	Optimal Resources for Children's Surgery Tool
3.	World Federation of Societies of Anesthesiologists Assessment tool
4.	Harvard Program in Global Surgery & Social Change Qualitative Assessment Tool

Financial Protection

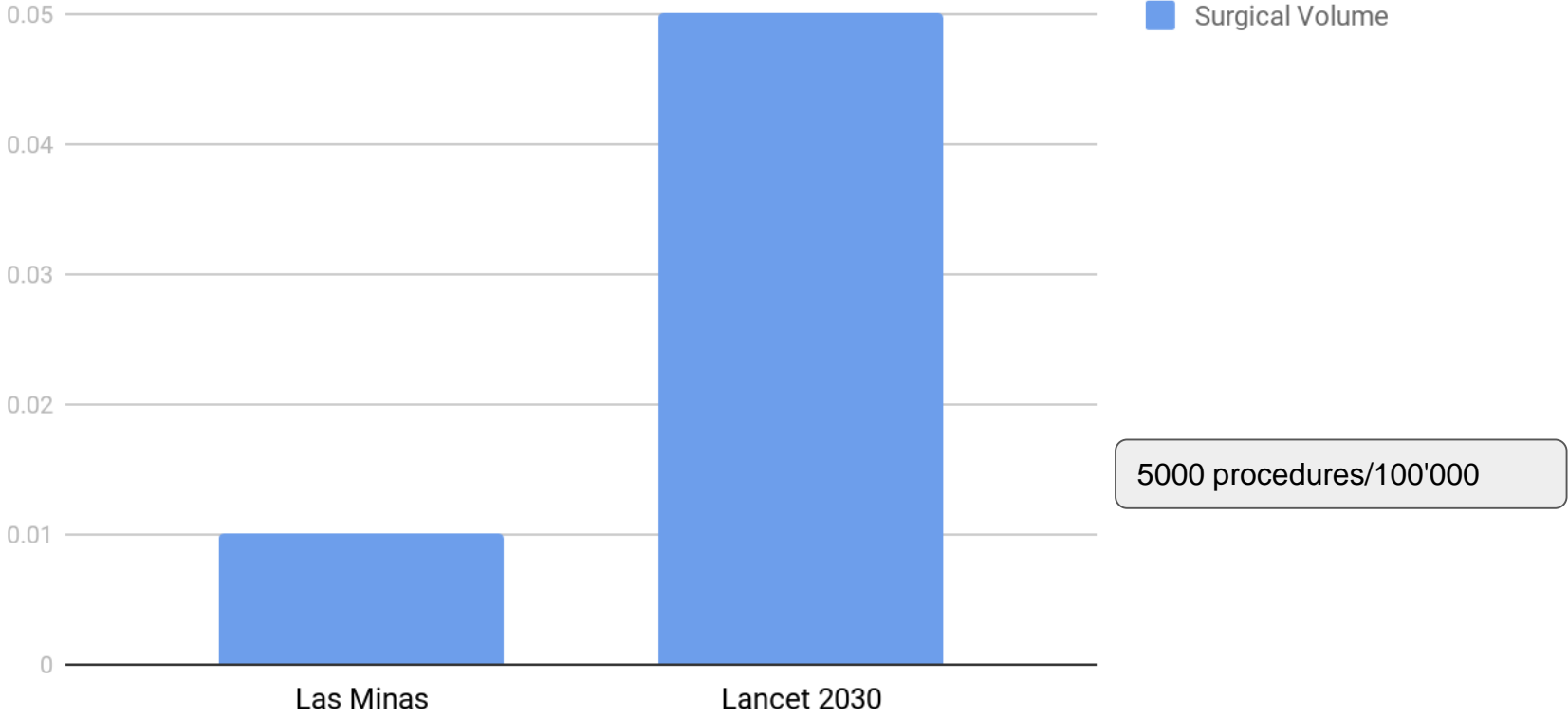


Access to essential medicines

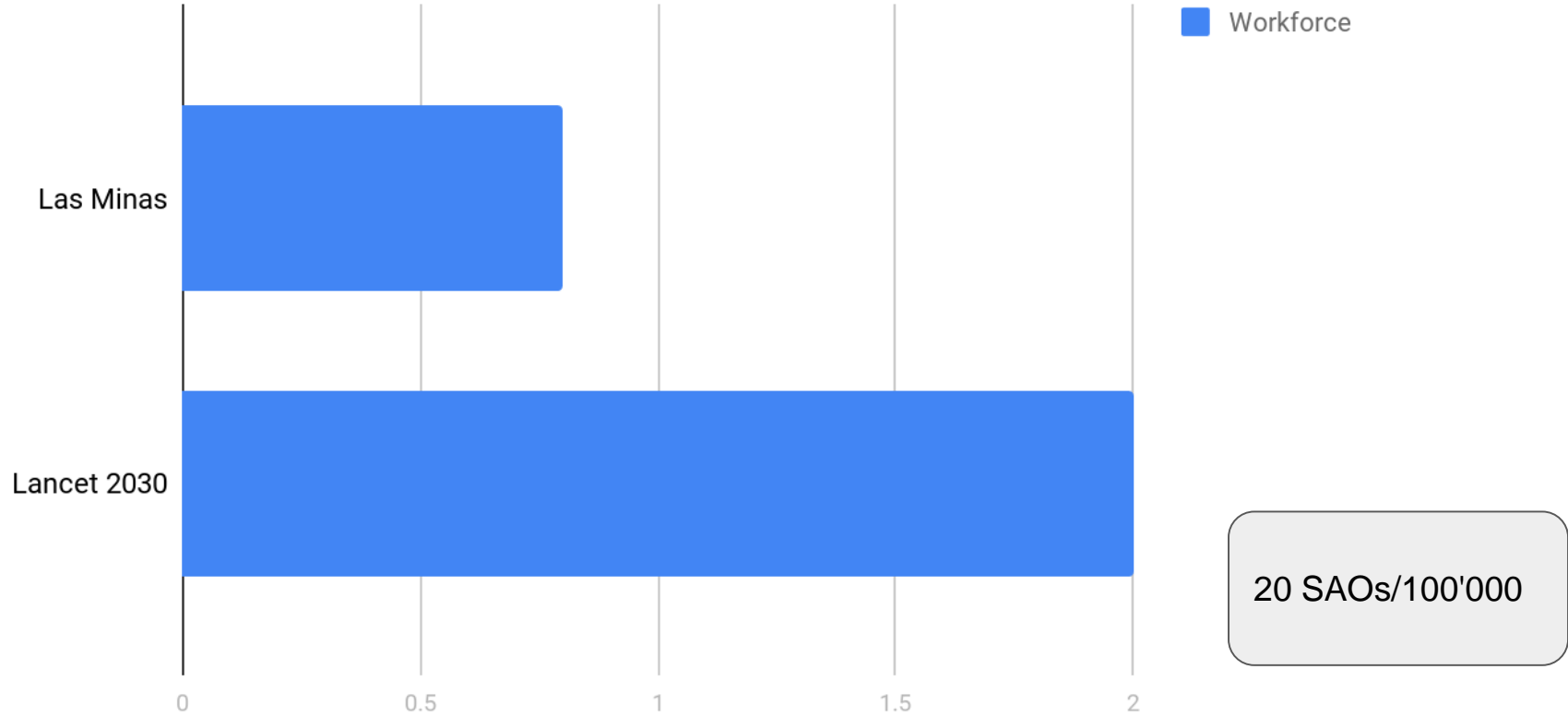
Adequate supply of oxygen, antibiotics, and IV fluids



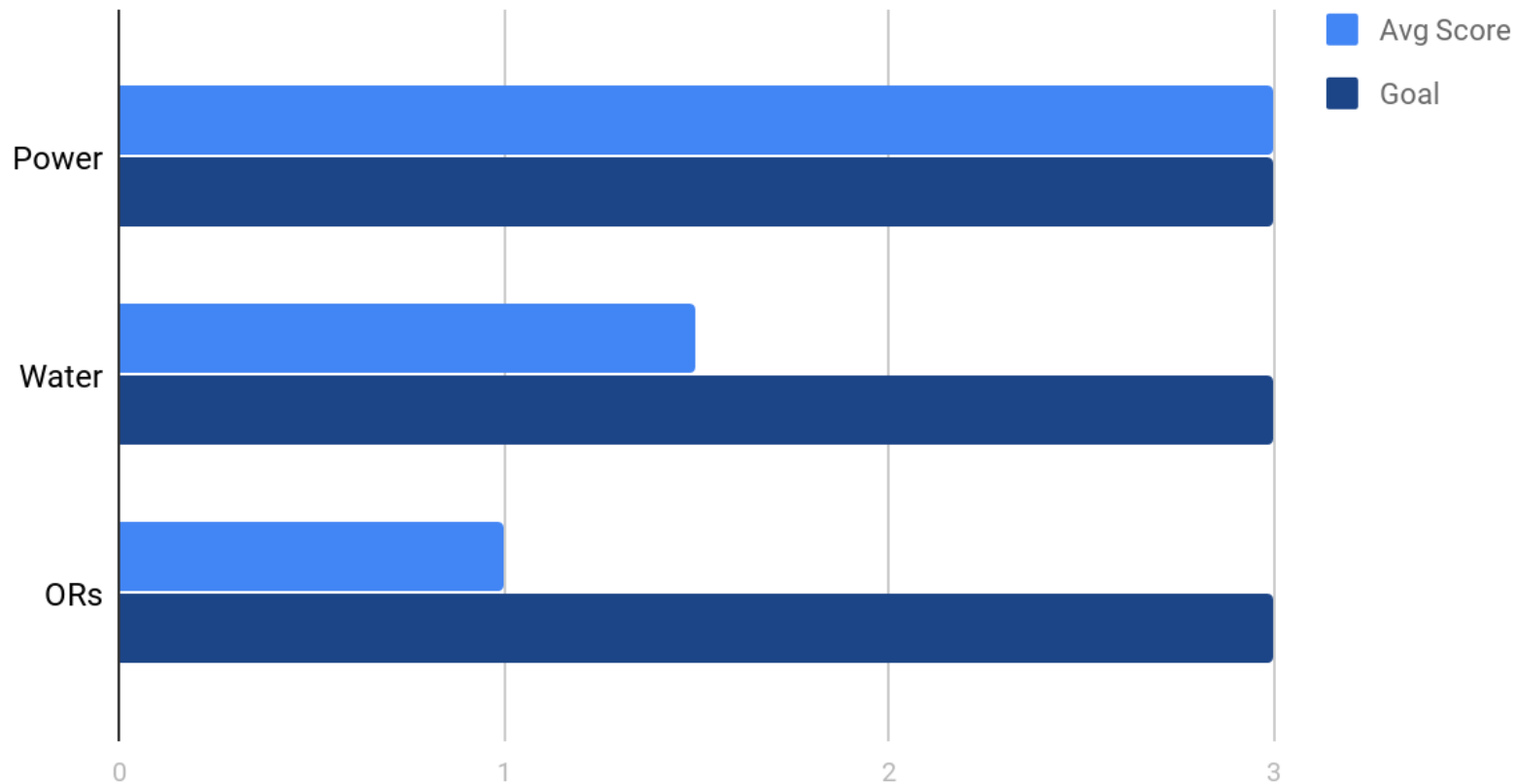
Surgical Volume



Workforce Density



Infrastructure



WFSA Facility Capacity Tool

	Assessment	Possible Interventions
<ul style="list-style-type: none"> Professional Status 	✓	
<ul style="list-style-type: none"> Professional organizations 	✓	<ul style="list-style-type: none"> ANARE
<ul style="list-style-type: none"> Training, certification, accreditation 	✓	<ul style="list-style-type: none"> Recruitment, CME opportunities
<ul style="list-style-type: none"> Records and Statistics 	Needs improvement	<ul style="list-style-type: none"> Education/Hospital Administration
<ul style="list-style-type: none"> Peer Review and incident reporting 	Needs improvement	<ul style="list-style-type: none"> QI/M&M
<ul style="list-style-type: none"> Facilities, equipment 	Needs improvement	<ul style="list-style-type: none"> Work with Hospital Administration/MOH
<ul style="list-style-type: none"> WHO surgical safety list 	Needs improvement	<ul style="list-style-type: none"> OR Team building
<ul style="list-style-type: none"> Peri-anesthetic care Pre-anesthetic care, checks, monitoring during anesthesia, post-anesthesia care 	Needs improvement	<ul style="list-style-type: none"> Education OR Teams (SAFE, EPM, American Heart, PACU) Work with Hospital Administration

Conclusion:

- A major success of the Nicaraguan health system: financial protection from catastrophic expenditure & essential medicines adequate
- To improve access to surgical care in rural Nicaragua:
 - investments in infrastructure, equipment & human resources - particularly in anesthesia providers
 - need for monitoring and evaluation of patient outcomes including perioperative mortality and complication rates & use of the WHO surgical safety checklist

Monitoring & Evaluation

Indicator	Siuna	Bonanza
Increased surgical volumes	20%	30%
Mortality rates	0.8%	0%
Complication rates	2.2%	1.6%
WHO safety checklist use rates	68%	85%

Way forward: Community Engagement



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