



Kampala, Uganda

Infection Control from an Emic Perspective: Forming & Evaluating a Local Infection Control Team in a Low-Resource Neurosurgery Ward



BASS CONNECTIONS

GLOBAL HEALTH INSTITUTE



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I. OVERVIEW

PROBLEM: Hospital-acquired infections (HAIs) pose a disproportionate burden on low- and middle-income (LMIC) settings, threatening to exacerbate disparities in patient outcomes.¹⁻⁴ Implementation of infection control approaches in LMICs is often hindered by local contextual factors, such as culture and resource limitations.^{5,6}

HYPOTHESIS - PROPOSED APPROACH: Through implementation strategies prioritizing local stakeholder empowerment (e.g. CBPR-derived) and feasible execution (e.g. QI), the **local infection control team model** could be adapted to facilitate locally-informed (and thereby emic) infection control approaches.

STUDY GOAL & AIMS

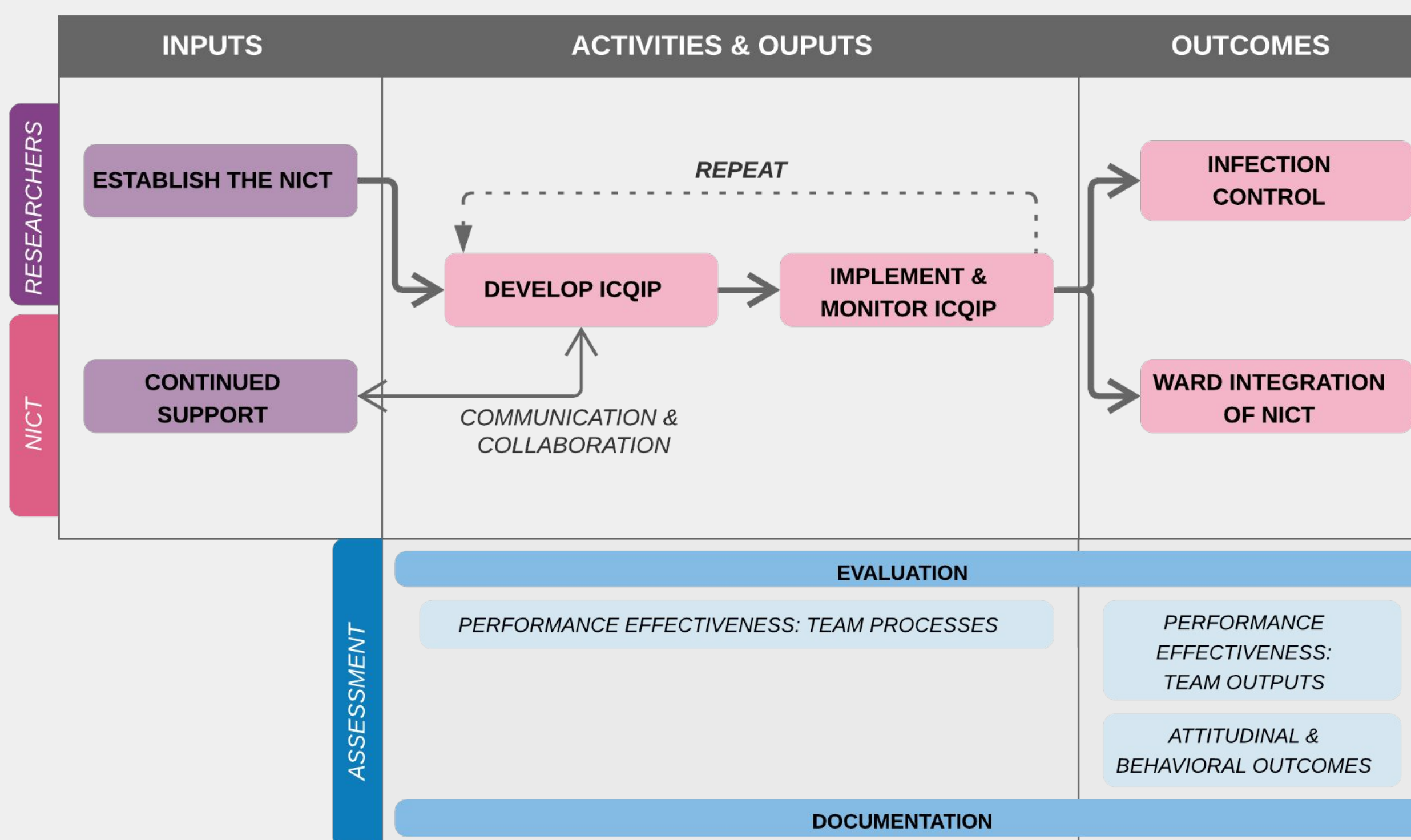
- To examine the **feasibility** and **acceptability** of a local infection control team by...
- **Documenting** the Team as it develops, implements, and monitors infection control efforts
 - **Estimating its potential impact** on infection control practices and outcomes
 - **Assessing local stakeholder perspectives** of the Team.

II. METHODS

PROCEDURES

CASE STUDY: Researchers established the **Neurosurgery Infection Control Team (NICT)** in the Mulago National Referral Hospital (MNRH) neurosurgery ward

PRIORITIZING LOCAL INDEPENDENCE: Researchers provided auxiliary support as the NICT conducted an iterative **infection control quality improvement project (ICQIP)** development and implementation process, as designed by the researchers.



MEASURES

Data consists of both qualitative and quantitative measures of the **NICT's internal processes**, their **ICQIP outputs**, and **ward staff perceptions of the Team**:

- Completed **meeting agendas** from 4 NICT meetings
- **Observational data** from the team's ICQIP #1
- **DGNN infection database** results
- **Feedback surveys** from ward staff (both NICT members and non-NICT staff)
- **Anecdotal information** pulled from other forms of communication

III. RESULTS: NICT TIMELINE

SUMMARY OF KEY NICT OPERATIONS

Held 4 official NICT meetings independent of researchers

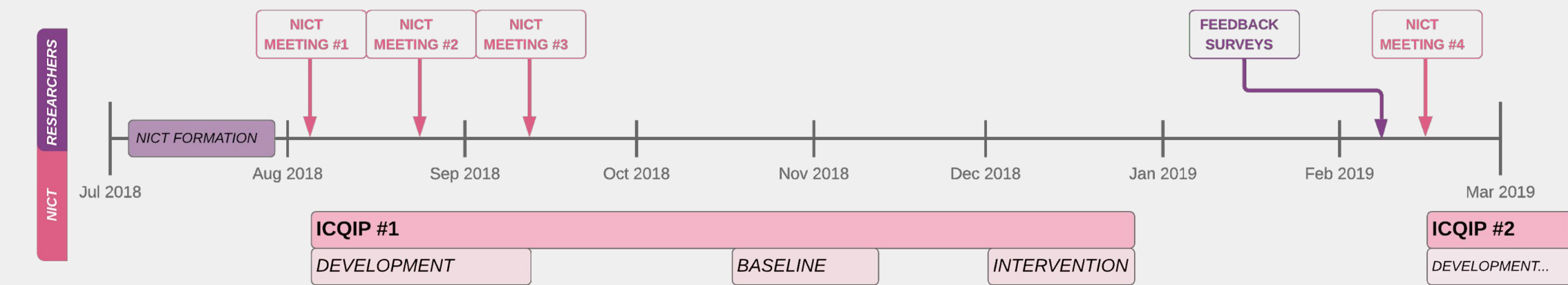
- 16 different ward staff attended at least one meeting
- nurses attended more frequently than physicians

Implemented ICQIP #1: moderate success, supply chain failure

- **Goal/outline:** reduce pneumonia through Decasan mouthwash administration (+ education)
- **Outcomes:** correlated with reduced observe pneumonia cases + moderate staff compliance
- **Barriers:** could not procure consistent supply within ward budget → abandoned project

Began ICQIP #2: greater behavioral focus

- **Goal/outline:** to improve patient care through staff and patient-care taker education on chest and urogenital infection prevention practices

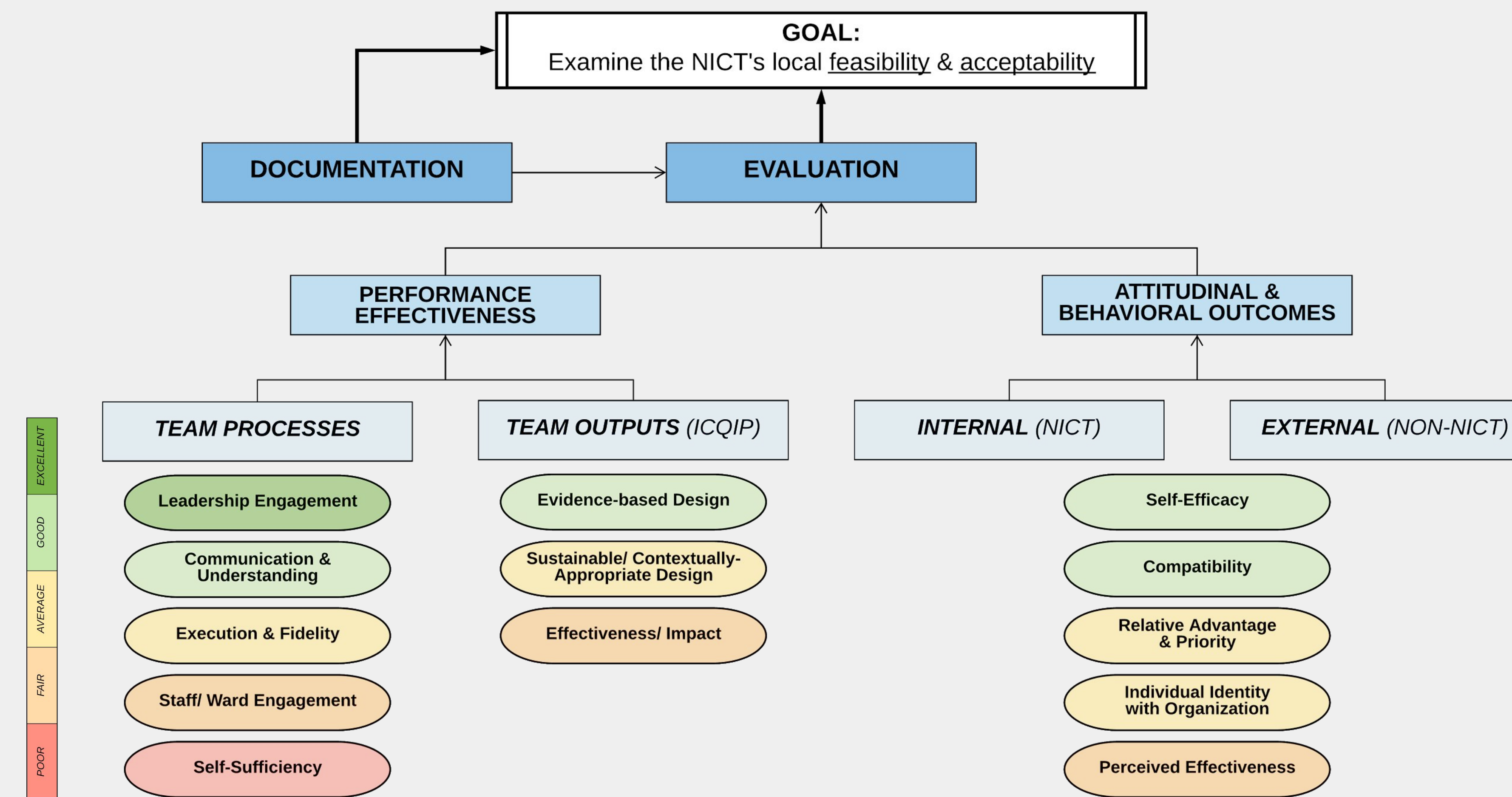


IV. EVALUATION

MODEL: PROJECT TEAM EFFECTIVENESS

DEVELOPING THE MODEL: constructs were **operationalized** with respect to two major **project team effectiveness** evaluation distinctions (**Performance Effectiveness** and **Attitudinal & Behavioral Outcomes**) to more succinctly define assessment criteria.^{7,8}

ASSESSMENT: Results across the various study measures were assessed collectively to qualitatively evaluate the NICT's success with each construct:



PERFORMANCE EFFECTIVENESS	
CONSTRUCT	QUALIFICATION
Leadership Engagement	• The NICT Leader: easily contacted, responded promptly, completed assigned tasks in adequate time, and contacted the researchers when NICT-related problems/ concerns arose.
Communication & Understanding	• NICT understood the general targets of meeting agenda questions (responded appropriately); asked for/ received researcher feedback • Discord between NICT and researcher expectations regarding roles, responsibilities, and level of researcher involvement overall
Execution & Fidelity	• NICT successfully completed many of its tasks in a decent time frame • Low initiative; questionable fidelity (limited and conflicting information about what the NICT accomplished)
Staff/ Ward Engagement	• New NICT participants at each NICT meeting • Unclear to what degree the non-NICT staff were involved in the NICT's infection control efforts, but universal call for wider staff engagement in NICT infection control efforts suggests this was perceived as inadequate
Self-sufficiency	• NICT developed core idea/design for both ICQIPs independent of researchers; ICQIP #2 design is more feasible and sustainable • Low initiative without explicit researcher direction; researcher input was necessary to effectively bring ICQIP to fruition; NICT was subject to ward's financial/resource constraints (hindered independence)
TEAM PROCESSES	
CONSTRUCT	QUALIFICATION
Evidence-Based Design	• ICQIP #1: literature suggests it may reduce pneumonia rates, but this research is limited
Sustainable & Contextually-Appropriate Design	• ICQIP #1: final, implemented version was more contextually-appropriate and sustainable than original proposal but ultimately failed due to resource limitations • ICQIP #2: much more explicit attention to local, contextual factors in its behavioral design
Effectiveness & Impact	• ICQIP #1: most proximal data (i.e. observational) depicts generally positive results (moderate staff compliance, decreased pneumonia rates), but difficult to discern true effectiveness and impact (conflicting data)

ATTITUDINAL & BEHAVIORAL OUTCOMES	
CONSTRUCT	QUALIFICATION
Relative Priority & Advantage	• Ward staff acknowledge limitations of current NICT 'pilot' - but note advantages of ward-specific infection control team <i>concept</i> .
Perceived Effectiveness	• NICT members: more positive perception of NICT effectiveness • All ward staff acknowledge <i>some</i> barriers to NICT's effectiveness (i.e. inadequate resources and finances)
Self-Efficacy	• NICT members: higher rates of self-efficacy and empowerment (reducing infections, improving infection control behaviors) with personal involvement
Individual Identification w/ Organization	• NICT members: much greater sense of "Individual Identification" with personal involvement, but low levels commitment (i.e. high absenteeism)
Compatibility	• NICT concept aligns with many aspects of ward's culture and expectations, but not all • Feasible adjustments possible so that NICT structure better aligns with ward's culture and expectations

V. KEY FINDINGS

Collective interpretation of the constructs suggests that the **NICT concept is generally feasible and locally-acceptable in the MNRH neurosurgery ward**.

CHALLENGES

Challenges encountered in this study included **low NICT-member commitment**, a **slight misalignment of expectations between NICT members and researchers**, and **poor non-NICT staff engagement**.

With adjustments to promote **wider, more consistent staff involvement** and **clarify expectations for both researchers and NICT members**, both researchers and the local ward staff anticipate improved NICT effectiveness and integration in the ward.

FUTURE RESEARCH

- STUDY DESIGN**
- **TEAM STRUCTURE:** consider how adjustments to team design may improve outcomes
 - **IMPROVING ASSESSMENT & EVALUATION:** collect data over a longer period of time and across multiple ICQIPs; adapt/ apply evaluation model to broader contexts to determine its generalizability
- LOCAL INFECTION CONTROL TEAM THEORY**
- **SCOPE/ GENERALIZABILITY:** Developing recommendations/ best practices for balancing local ownership with evidence-based infection control methods

VI. CONCLUSIONS

The NICT exemplifies how an emic approach to infection control might be effectively fostered through local empowerment. This emic perspective may be key to facilitating locally feasible and acceptable healthcare innovation efforts more broadly in LMICs.

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