Project Title

Clinicians' Acceptance and Perspectives on Antimicrobial Stewardship Interventions at Ng Teng Fong General Hospital

Project Lead and Members

Project lead: Robin Choo

Project members: Robin Choo, Jonathan Ngiam, Xeus Wong, Tey Siew Min, Stephanie Teo, Josephine Wong, Lin Li

Organisation(s) Involved

Ng Teng Fong General Hospital

Healthcare Family Group Involved in this Project

Medical, Allied Health, Administration

Applicable Specialty or Discipline

Infectious Diseases

Aims

To improve communication between Antimicrobial Stewardship Programme (ASP) and the primary care teams so that NTFGH's acceptance rate will increase to 80% within 1 year. For ASP recommendations made from January to June 2022 we intend to:

1) Demonstrate the impact of hospital leadership's unequivocal backing on the ASP recommendation acceptance rate.
2) Identify potential barriers of accepting ASP recommendation by analysing declined reasons.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

- Strong leadership and support from the CMB and HODs are essential for the continuous improvement by CICs to provide reasons for declining ASP recommendations.

- Documentation of accurate diagnosis help ASP to better understand the antibiotic treatment needs of the patient and reduce unnecessary interventions.

- Short term prospective review and feedback, with reinforcements to document declined reasons, could uncover underlying problems. This can drive quality improvement to improve patient care and outcomes.

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign, Value Based Care, Safe Care

Organisational Leadership , Change Management, Leadership Change

Keywords

Antibiotic Stewardship Programme, Communications, Acceptance Rate

Name and Email of Project Contact Person(s)

Name: Robin Choo

Email: robin_choo@nuhs.edu.sg

CLINICIANS' ACCEPTANCE AND PERSPECTIVES ON ANTIMICROBIAL STEWARDSHIP INTERVENTIONS AT NG TENG FONG GENERAL HOSPITAL

MEMBERS: ROBIN CHOO, JONATHAN NGIAM, XEUS WONG, TEY SIEW MIN, STEPHANIE TEO, JOSEPHINE WONG, LIN LI

- ✓ **SAFETY**
- ✓ **QUALITY**
- ☐ **PATIENT EXPERIENCE**
- ☐ **PRODUCTIVITY**
- ☐ **COST**

Define Problem, Set Aim

Problem/Opportunity for Improvement

Antimicrobial stewardship programmes (ASPs) are a key national initiative to promote appropriate antimicrobial use and to reduce the resistance burden by providing recommendation to improve antimicrobial prescribing. However, our acceptance rate is only 70% in 2021 as compared to the national average acceptance rate of at least 80%.

Centres for Diseases Control and Prevention advocate the fundamental of leadership support for effective ASP. We hypothesized that with leadership support from the Chief Medical Board (CMB) and clinical head of departments (HODs) and effective communication between ASP and the primary care team, ASP recommendation acceptance rate would improve.
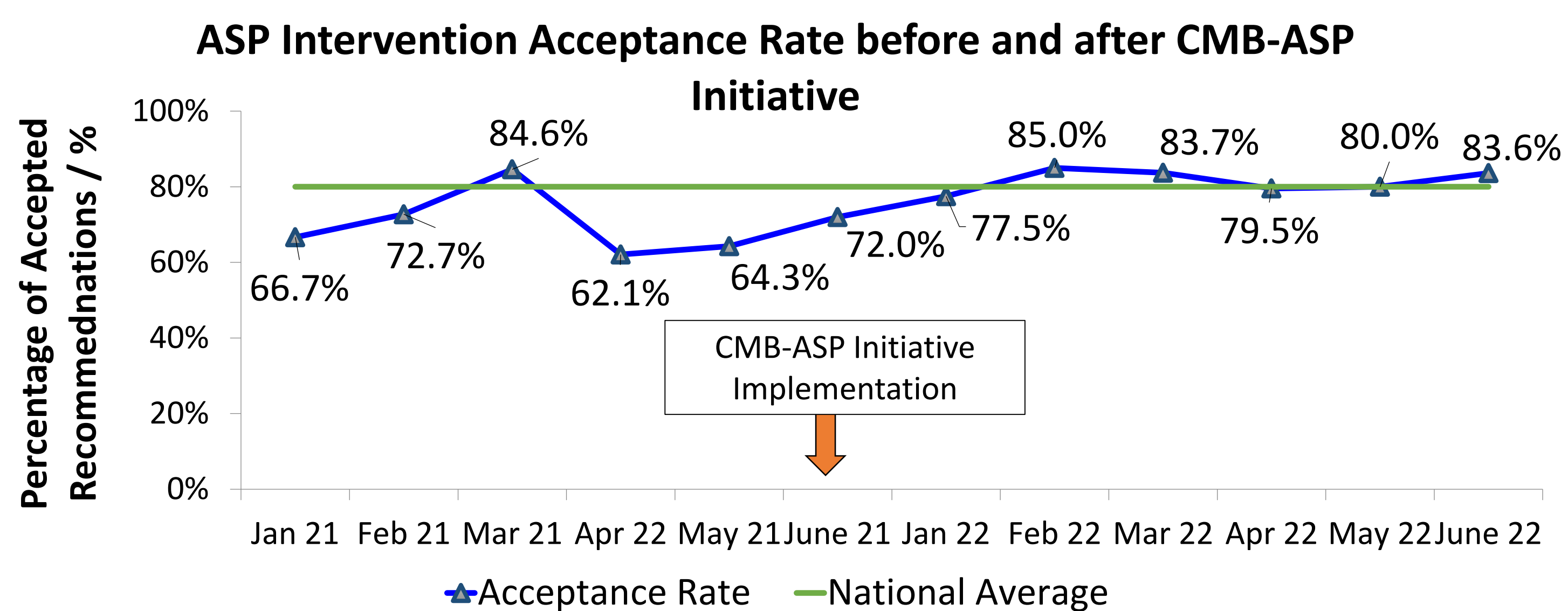
Aim

To improve communication between ASP and the primary care teams so that NTFGH's acceptance rate will increase to 80% within 1 year. For ASP recommendations made from January to June 2022, we intend to:
1) *Demonstrate the impact of hospital leadership's unequivocal backing on the ASP recommendation acceptance rate.*
2) *Identify potential barriers of accepting ASP recommendation by analysing declined reasons.*
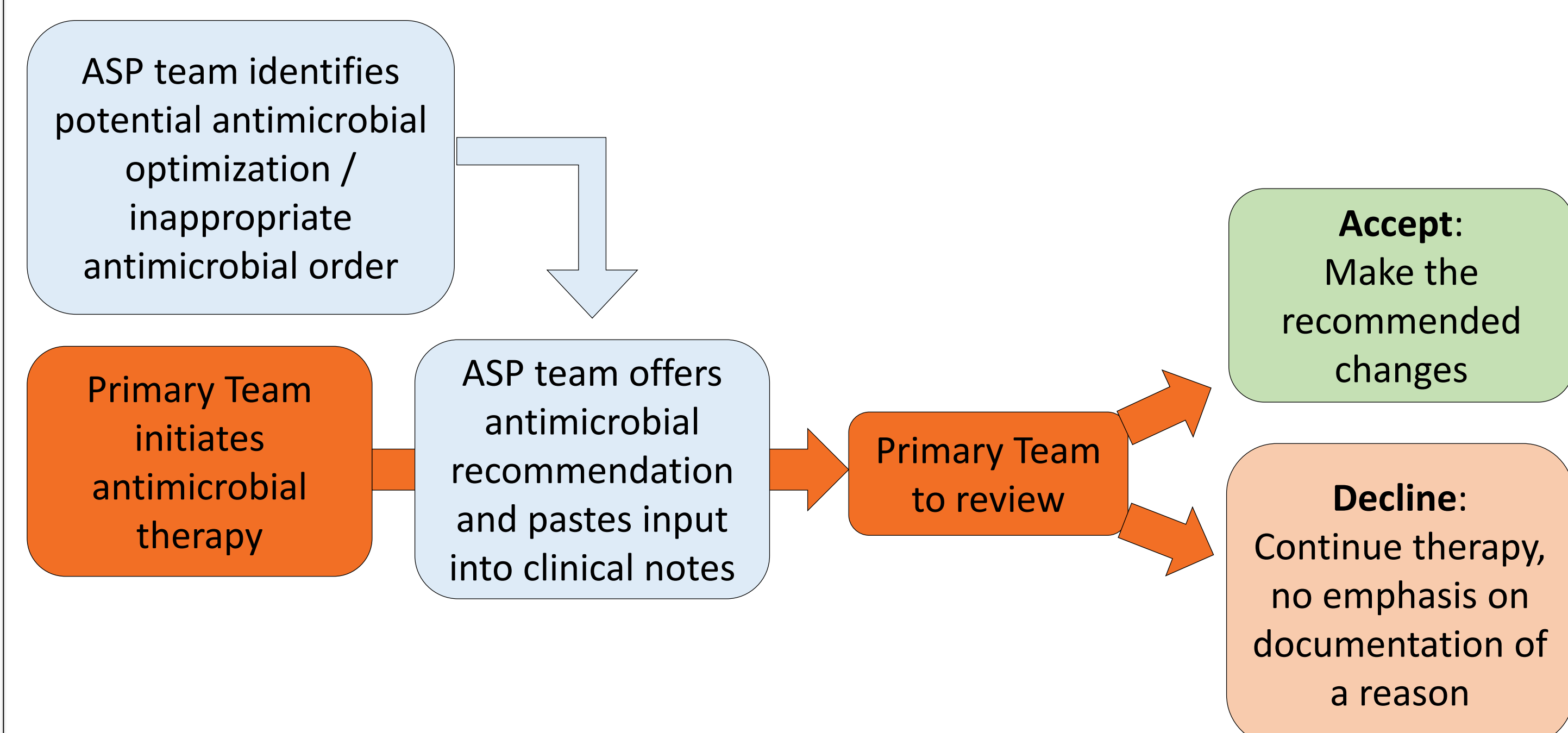
Establish Measures

What was your performance before interventions?

ASP Intervention Acceptance Rate before and after CMB-ASP Initiative

Y-axis: Percentage of Accepted Recommednations / %
Data points: Jan 21: 66.7%, Feb 21: 72.7%, Mar 21: 84.6%, Apr 22: 62.1%, May 21: 64.3%, June 21: 72.0%, Jan 22: 77.5%, Feb 22: 85.0%, Mar 22: 83.7%, Apr 22: 79.5%, May 22: 80.0%, June 22: 83.6%

CMB-ASP Initiative Implementation

Legend: ▲ Acceptance Rate — National Average

Analyse Problem

What was your process before interventions?

- ASP team identifies potential antimicrobial optimization / inappropriate antimicrobial order
- Primary Team initiates antimicrobial therapy
- ASP team offers antimicrobial recommendation and pastes input into clinical notes
- Primary Team to review
- **Accept:** Make the recommended changes
- **Decline:** Continue therapy, no emphasis on documentation of a reason
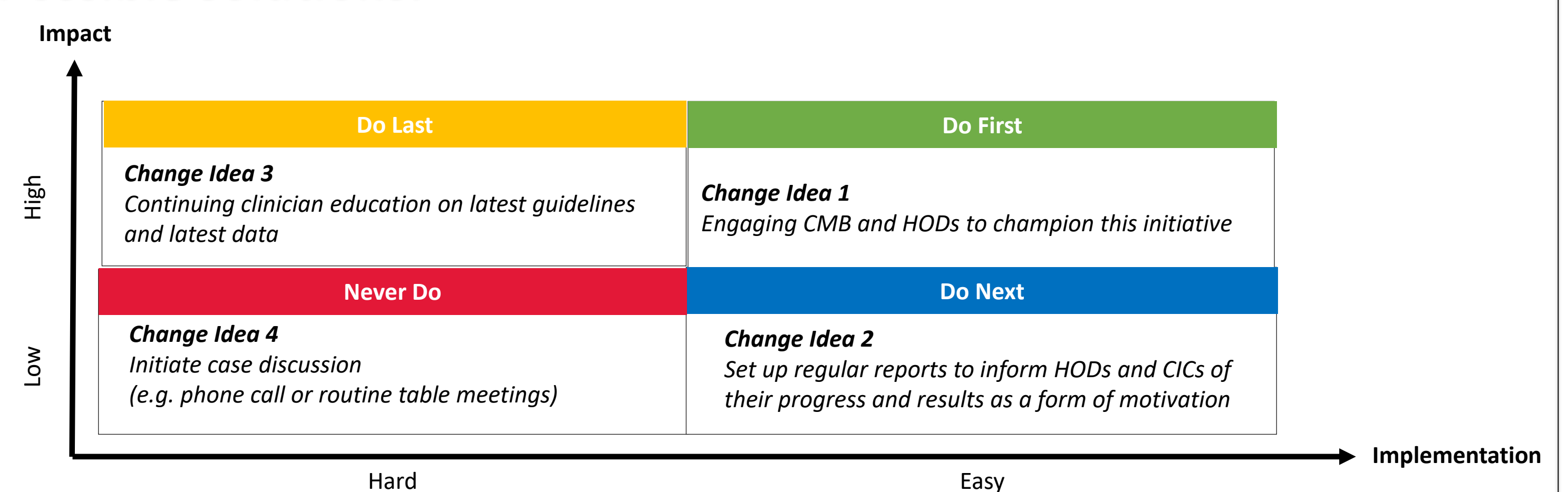
What are the probable root causes?

- *Lack of stakeholder engagement to champion good practice of documenting reason(s) for declining ASP recommendation.*
- *Holistic impression of infection may not be reflected promptly in clinical notes.*
- *Insufficient emphasis for junior doctors to relay ASP recommendations to CICs.*

Select Changes

Possible solutions:

Impact vs Implementation matrix:
- **Do Last** (High Impact, Hard): *Change Idea 3 — Continuing clinician education on latest guidelines and latest data*
- **Do First** (High Impact, Easy): *Change Idea 1 — Engaging CMB and HODs to champion this initiative*
- **Never Do** (Low Impact, Hard): *Change Idea 4 — Initiate case discussion (e.g. phone call or routine table meetings)*
- **Do Next** (Low Impact, Easy): *Change Idea 2 — Set up regular reports to inform HODs and CICs of their progress and results as a form of motivation*

Selected solutions:

Based on the impact vs implementation matrix, Ideas 1 & 2 were chosen for their high impact & ease of implementation.

Test & Implement Changes

How do we pilot the changes? What are the initial results?

CYCLE	PLAN	DO	STUDY	ACT
1	To improve team communication and feedback for ASP recommendations.	**Weekly email reminders** for CIC to promptly document declined reason. **Monthly emails** for HODs to re-inforce CICs to provide clinically valid reason in electronic medical record.	ASP team was able to effectively engage the various CICs when there was no prompt documentation of reasons for declining.	Responses from teams were good. However, timely reply to ASP recommednations could be improved.
2	To motivate team for prompt responses to ASP recommendations. For example, a shift from red code to green code over time.	Implement a **"trafffic light"** as indicators. Green (responded in <3 days) /Amber (responded within 3-7 days) /Red (responded in >7 days) code to highlight disciplines that responded promptly to ASP interventions.	The traffic light system improved time to response. However, acceptance rate remained fairly constant.	Acceptance rate plateau through the months despite interventions. Hence, to evaluate the reasons of declining recommendations.
3	To understand reasons behind declining recommendations to improve the communication between primary team and ASP team.	**Collate declined reasons and perform content analysis** to highlight common declined reasons.	Content analysis results are seen in the table below. Physician preference was a key component in ASP declined reason.	Driving evidence-based practices may align physician's and ASP's strategies for management. Further improving communication is still necessary.

Top 3 main reasons for not adhering to ASP intervention	n (%)
Primary physician's personal preference *e.g. ..Ceftriaxone similar to cephalexin, is also a cephalosporin albeit 3rd generation.*	16 (37.2)
No explicit reason stated	8 (18.6)
Lapse in communication and documentation *e.g. Apart from recurrent UTI, patient had likely intra-abdominal sepsis (undocumented)*	6 (14.0)

Spread Changes, Learning Points

What are the key learnings from this project?

- *Strong leadership and support from the CMB and HODs are essential for the continuous improvement by CICs to provide reasons for declining ASP recommendations.*
- *Documentation of accurate diagnosis help ASP to better understand the antibiotic treatment needs of the patient and reduce unnecessary interventions.*
- *Short-term prospective review and feedback, with reinforcements to document declined reasons, could uncover underlying problems. This can drive quality improvement to improve patient care and outcomes.*

What are/were the strategies to spread change after implementation?

- *Stakeholders/clinical representatives to educate and reinforce all staff on the importance of promptly updating impressions and reasons for declining ASP recommendation.*
- *Standardise care by building guidelines for Gram-negative bacteremia and End-of-Life care.*
- *Leverage the use of Best Practice Advisory to improve awareness of ASP recommendations and promote judicious antimicrobial use.*

Ng Teng Fong General Hospital

Jurong Community Hospital