



Tan Tock Seng  
HOSPITAL  
National Healthcare Group

# INFLUENZA & PNEUMOCOCCAL VACCINATIONS FOR MYELOMA AND LYMPHOMA IN-PATIENTS

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Department of Haematology



Adding years of healthy life

## Mission Statement

To increase the uptake of influenza and pneumococcal vaccinations in eligible\* newly diagnosed lymphoma and myeloma in-patients, from current 17% to 100%, over a period of 6 months.

\*Exclusion Criteria:

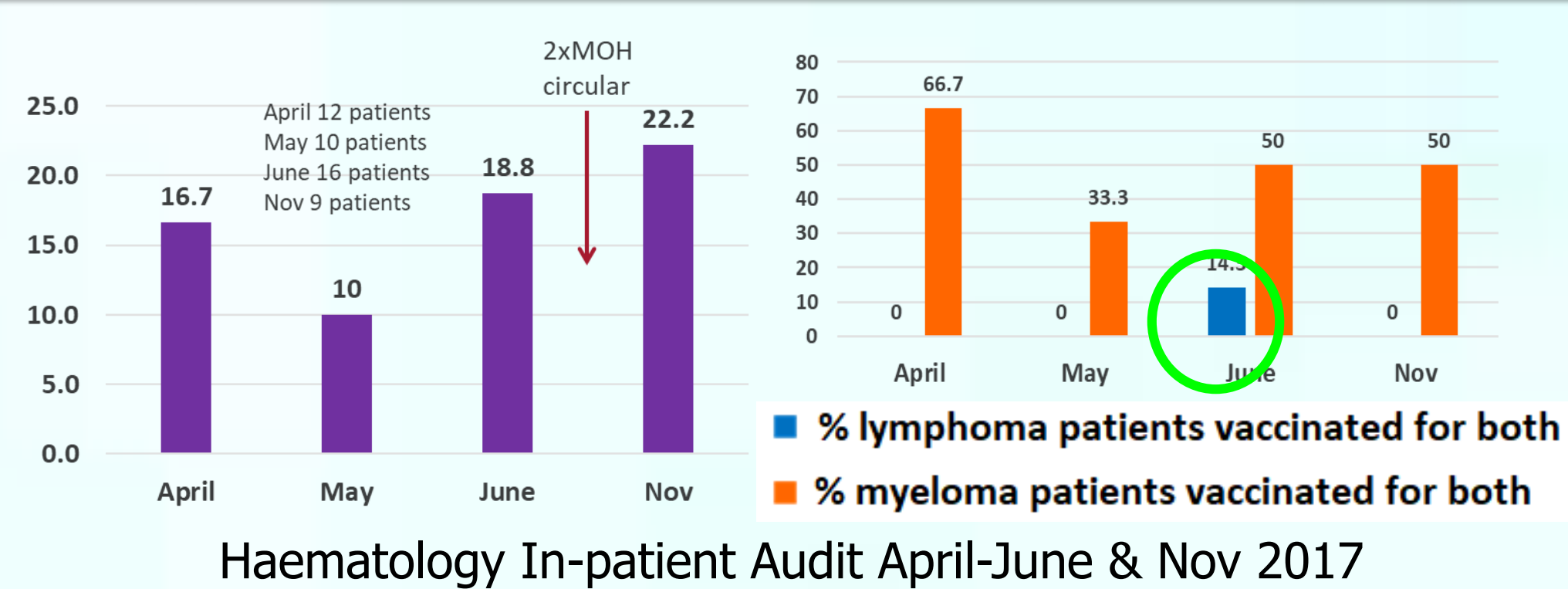
- Allergic to vaccine(s) composition
- Concurrent sepsis or haemodynamic instability (assessed by medical team)
- Patients who are already up to date with their vaccination(s)
- If patient will receive Rituximab within 2 weeks or already on Rituximab (no pneumococcal vaccine until >6 months after last Rituximab dose - but patients can still proceed with Flu vaccine)
- Palliative patients with life expectancy ~ ≤3 months

NB. Platelets <50 (can administer vaccines s/c, not an absolute contraindication)

## Team Members

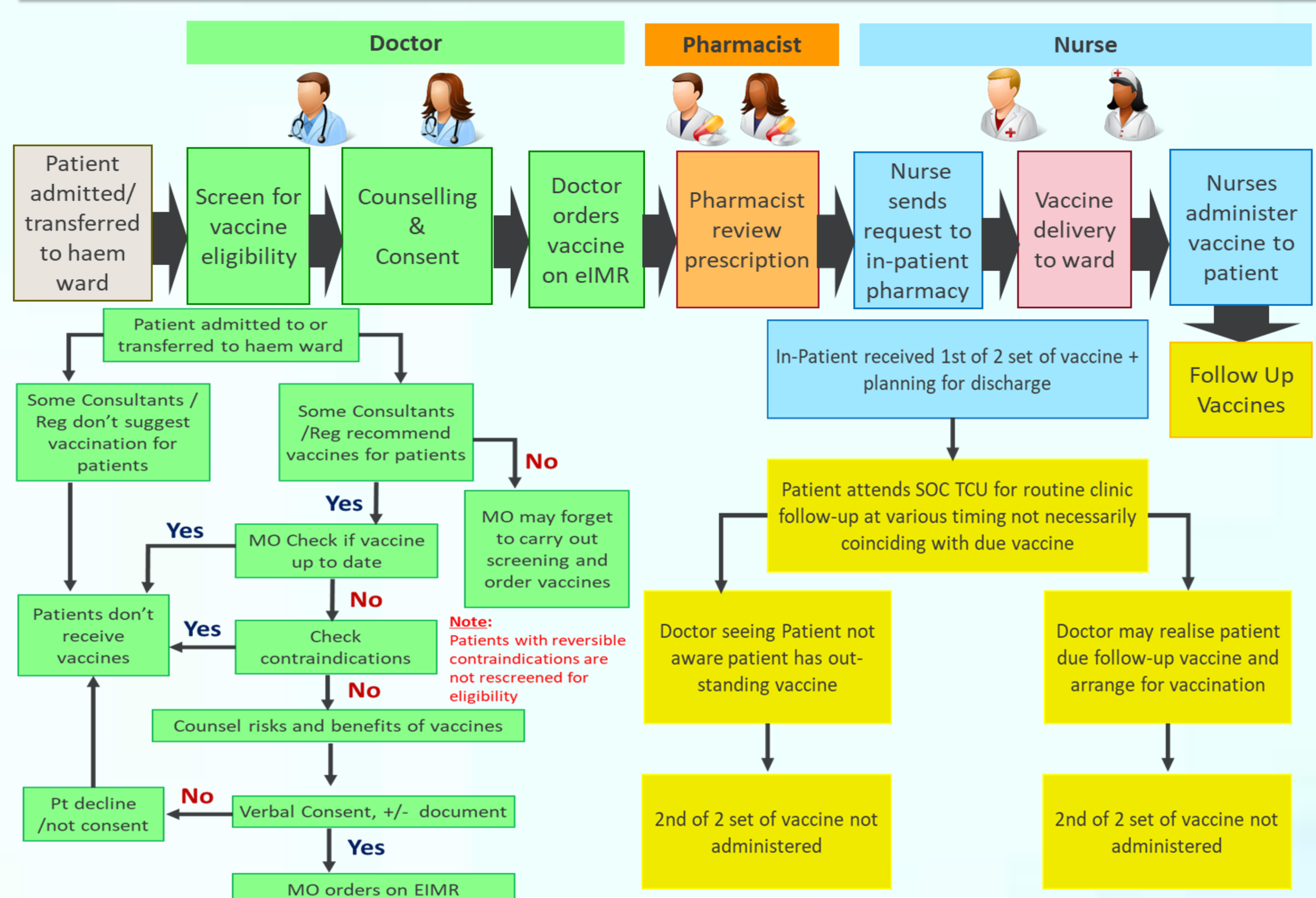
Name	Designation	Department	Role
1. Adj. Asst. Prof. Allison Tso	Consultant	Haematology	Leader
2. Tan Yien Ling	Senior Pharmacist	Pharmacy	Member
3. Sia Beng Yi	Senior Pharmacist	Pharmacy	Member
4. Dr Batac Jireh Ann Landingin	Medical Officer	Haematology	Member
5. Kelly Tan	Medical Social Worker	Care & Counselling	Member
6. Liu Yunxia	Asst. Nurse Clinician	Nursing	Member
7. Wu Qiong	Staff Nurse (Jnr)	Nursing	Member

## Evidence for a Problem Worth Solving

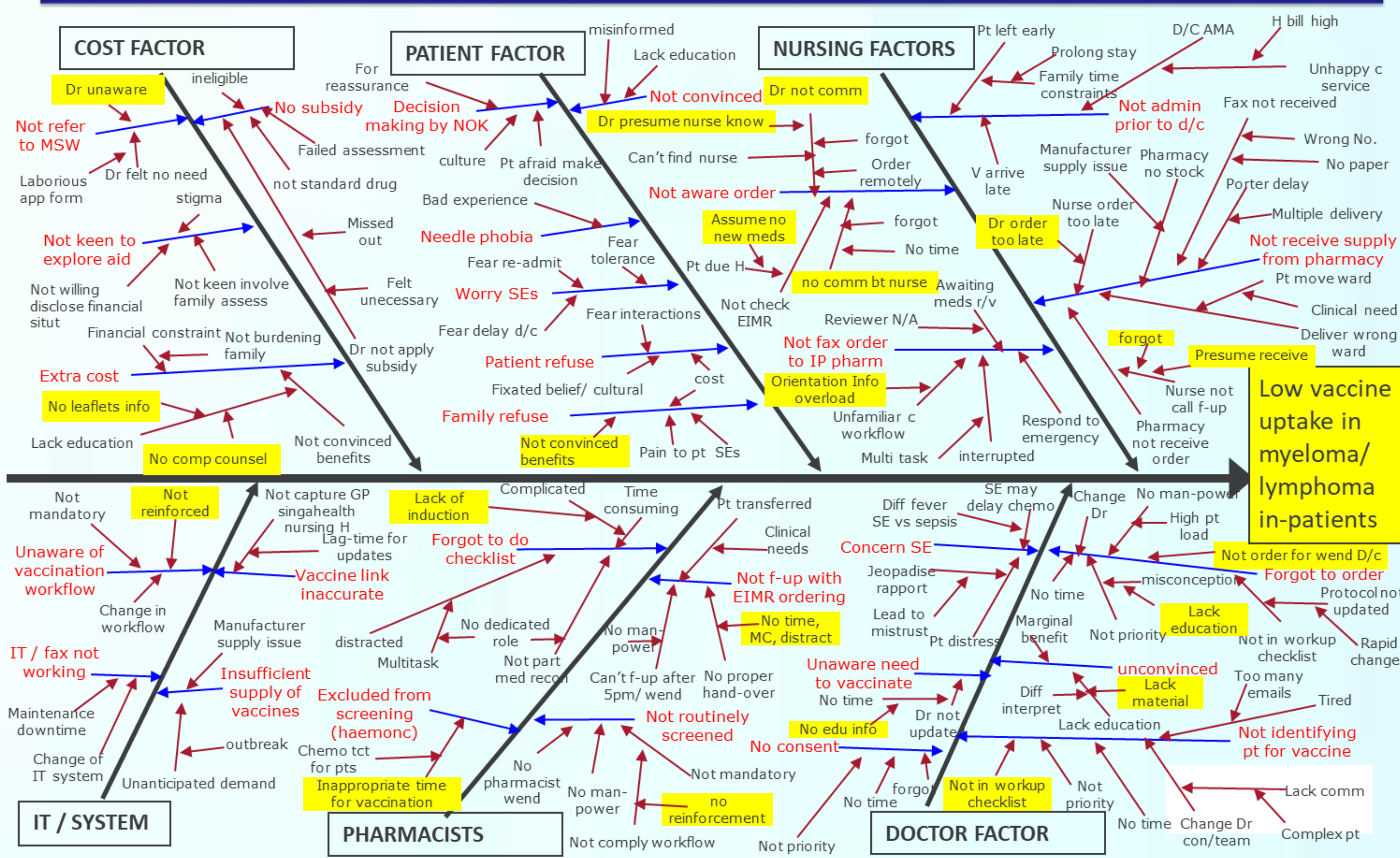


Only **17%** newly diagnosed myeloma & lymphoma patients in TTSH were vaccinated!

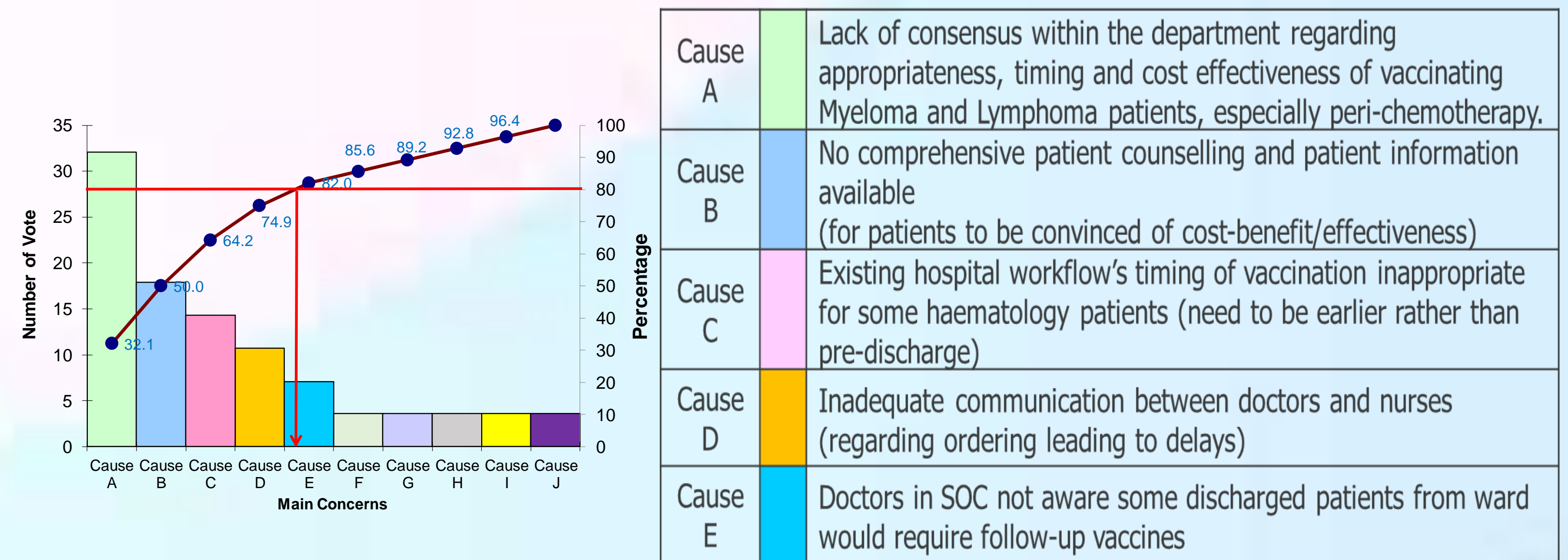
## Flow Chart of Process



## Cause and Effect Diagram



## Pareto Chart

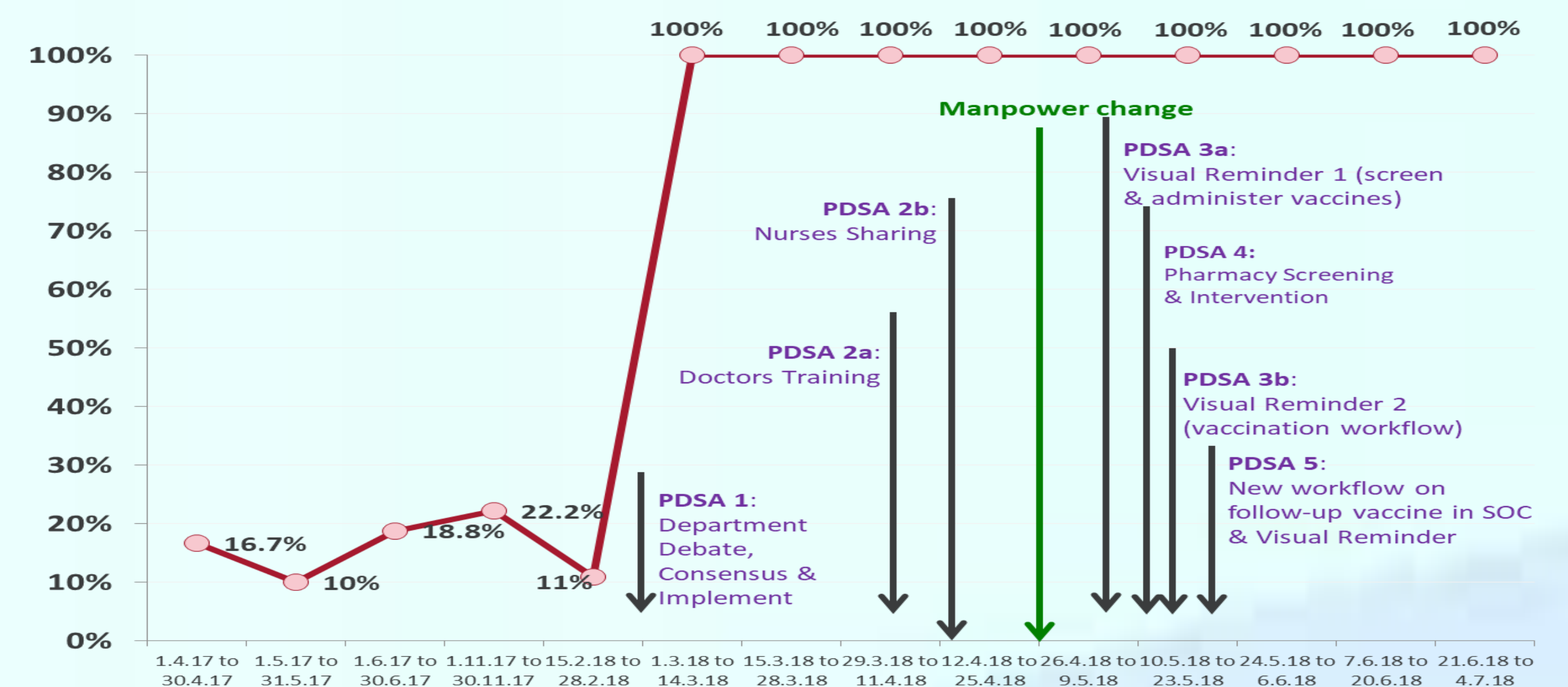


## Implementation

ROOT CAUSE	INTERVENTION	DATE OF IMPLEMENTATION
<b>Cause A:</b> Lack of consensus within the department re: appropriateness, timing and cost effectiveness of vaccinating Myeloma and Lymphoma patients, especially peri-chemotherapy.	<b>PDSA 1:</b> Dept level debate, consensus, implement <b>PDSA 2a:</b> Doctors training <b>PDSA 2b:</b> Nurses sharing	1 <sup>st</sup> March 2018 5 <sup>th</sup> April 2018 17 <sup>th</sup> April 2018
<b>Cause B:</b> No comprehensive patient counselling and pt info available (for pts to be convinced of cost-benefit/effectiveness)	<b>PDSA 3:</b> Workflow + Visual cues <b>PDSA 4:</b> Pharmacy screening + intervention/recommend	9 <sup>th</sup> May 2018 10 <sup>th</sup> May 2018
<b>Cause E:</b> Doctors in SOC not aware some discharged patients from ward would require follow-up vaccines	<b>PDSA 5a:</b> Create new workflow for in patients to receive follow-up vaccine in SOC <b>PDSA 5b:</b> Visual reminder of out patient follow-up vaccine workflow	28 <sup>th</sup> Mar 2018 25 <sup>th</sup> May 2018

## Results

### Uptake of Influenza & Pneumococcal Vaccinations in Newly Diagnosed Lymphoma and Myeloma In-Patients



## Cost Savings

Efficacy of influenza /pneumococcal vaccine in haematology patient ~ 30-40%.

Hence can only prevent up to 40% cases of viral illness and hospitalisation.

**LOS Reduction**  
~ **4,451 bed days**

**Annualized Cost Avoidance**  
~ **\$1.65 million**

**342 less patients** would be admitted

**68 lives/year** can potentially be saved

## Lessons Learnt

This CPIP project has united the interests of stakeholders to a) improve performance by having shared goals, b) deliver quality care, c) improve patients' experiences and d) reduce net healthcare costs. CPIP contributes towards a "value-based health care system" which is critical to the sustainability and future competitiveness of our hospitals.

## Strategies to Sustain

- Solid systemic changes in place
- Conduct regular audits, give encouragement
- Share results with stakeholders
- Prompt identification & rectification of reasons for failing