

Mission Statement

Reducing *unnecessary follow up by ENT doctors in outpatient clinic for first visit presbycusis patients from baseline of 20% to less than 5% in 6 months

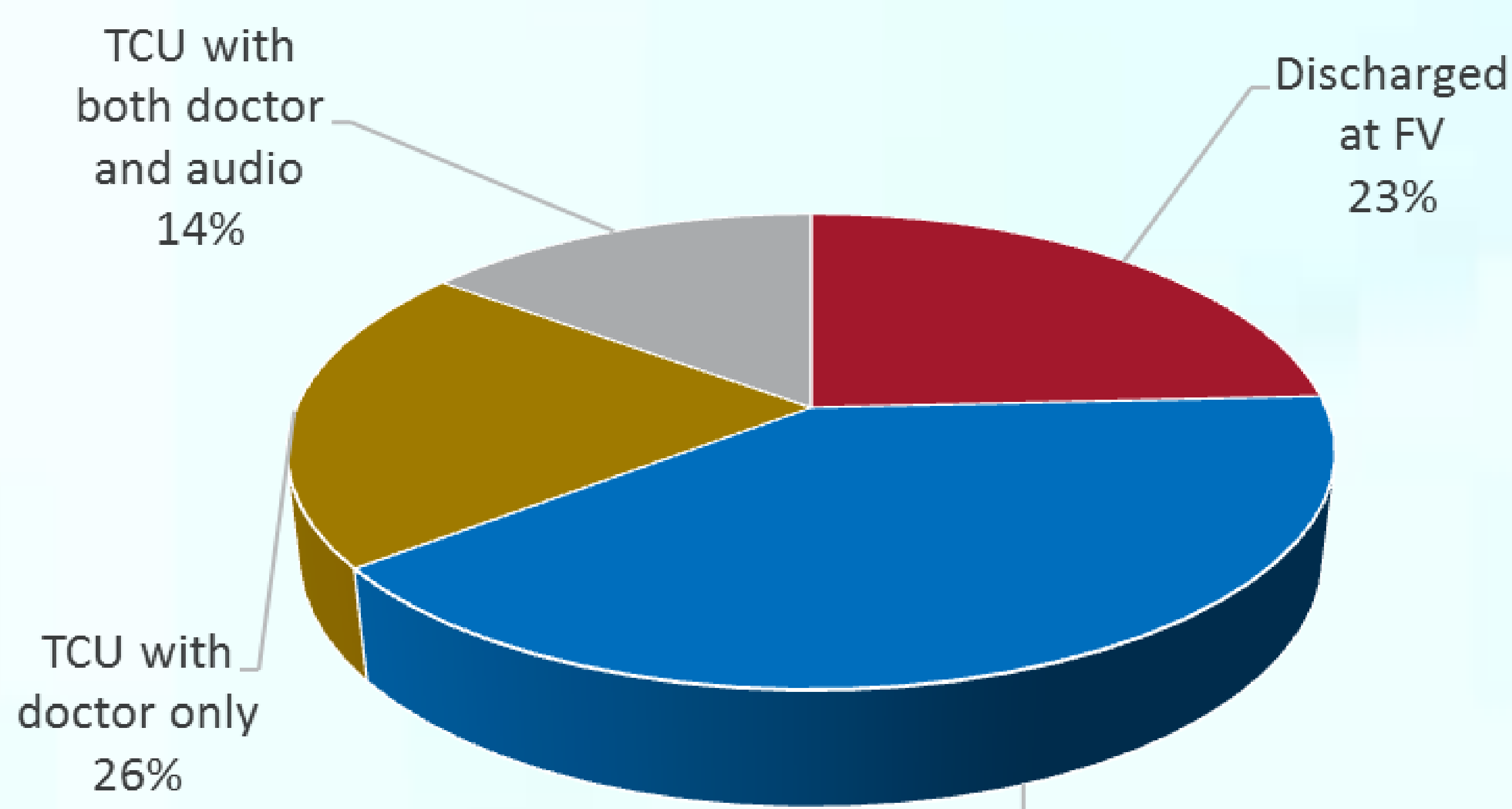
* Unnecessary: Patients with no symptoms of vertigo/ severe tinnitus or other ENT diagnosis that require follow up, or patients with a bilateral bone conduction threshold of > 90dB that may be candidates for a cochlear implant

Team Members

	Name	Designation	Department
Team Leader	Dr Lim Ming Yann	Consultant	Otorhinolaryngology
Team Members	Ms Alynn Lim Meow Noi	Senior Nurse Manager	Clinic 1B
	Ms Agnes Chew Si Qi	Coordinator	Otorhinolaryngology
	Ms Chan Soon Chien	Senior Audiologist	Otorhinolaryngology
	Ms Fiona Ke Jiali	Senior Staff Nurse	Clinic 1B
	Dr Linus Lau	Medical Officer	Clinic 1B

Evidence for a Problem Worth Solving

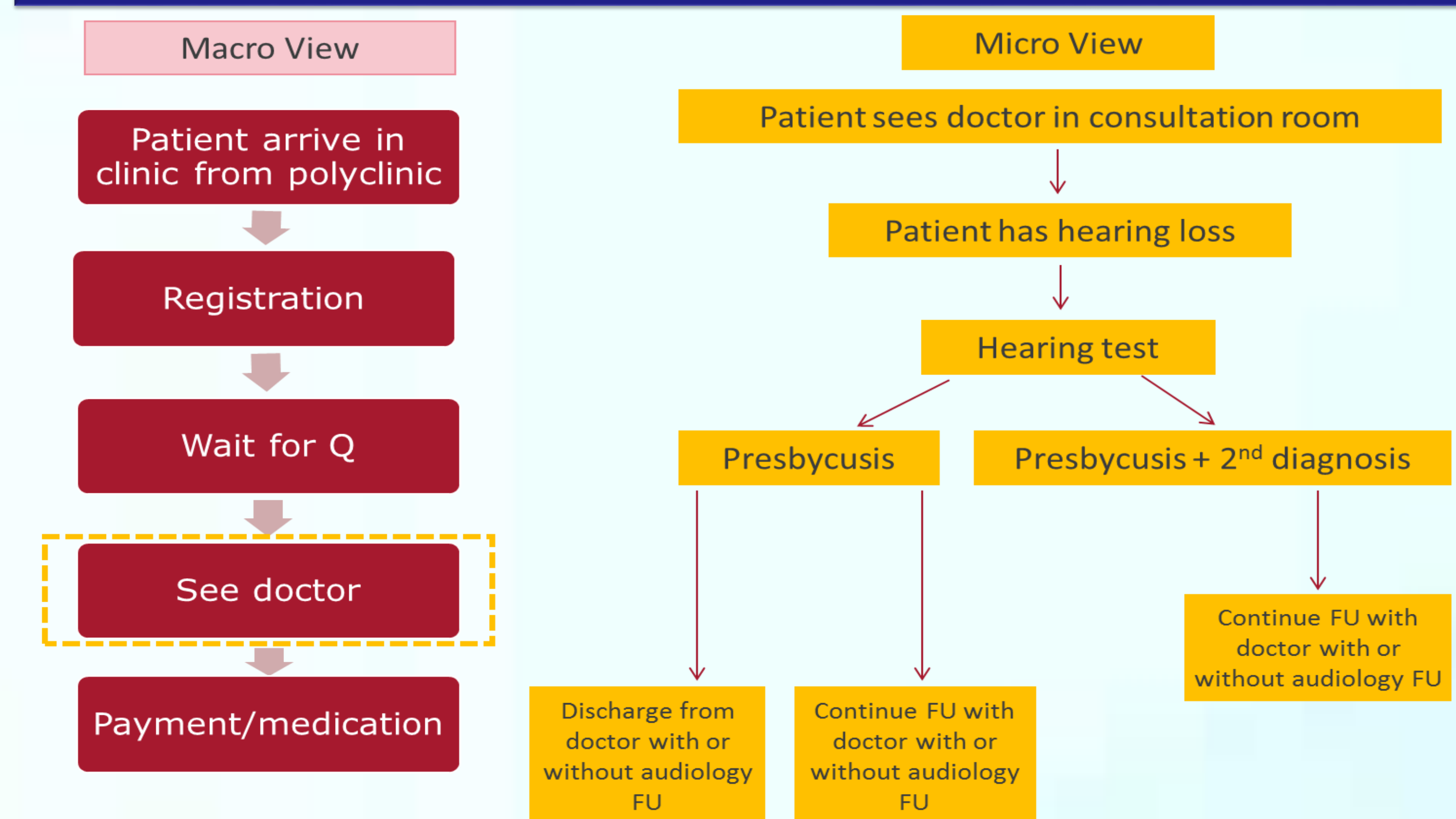
Between 1 May 2018 to 30 June 2018, **168 patients** were seen with a diagnosis of presbycusis with these follow up plans:



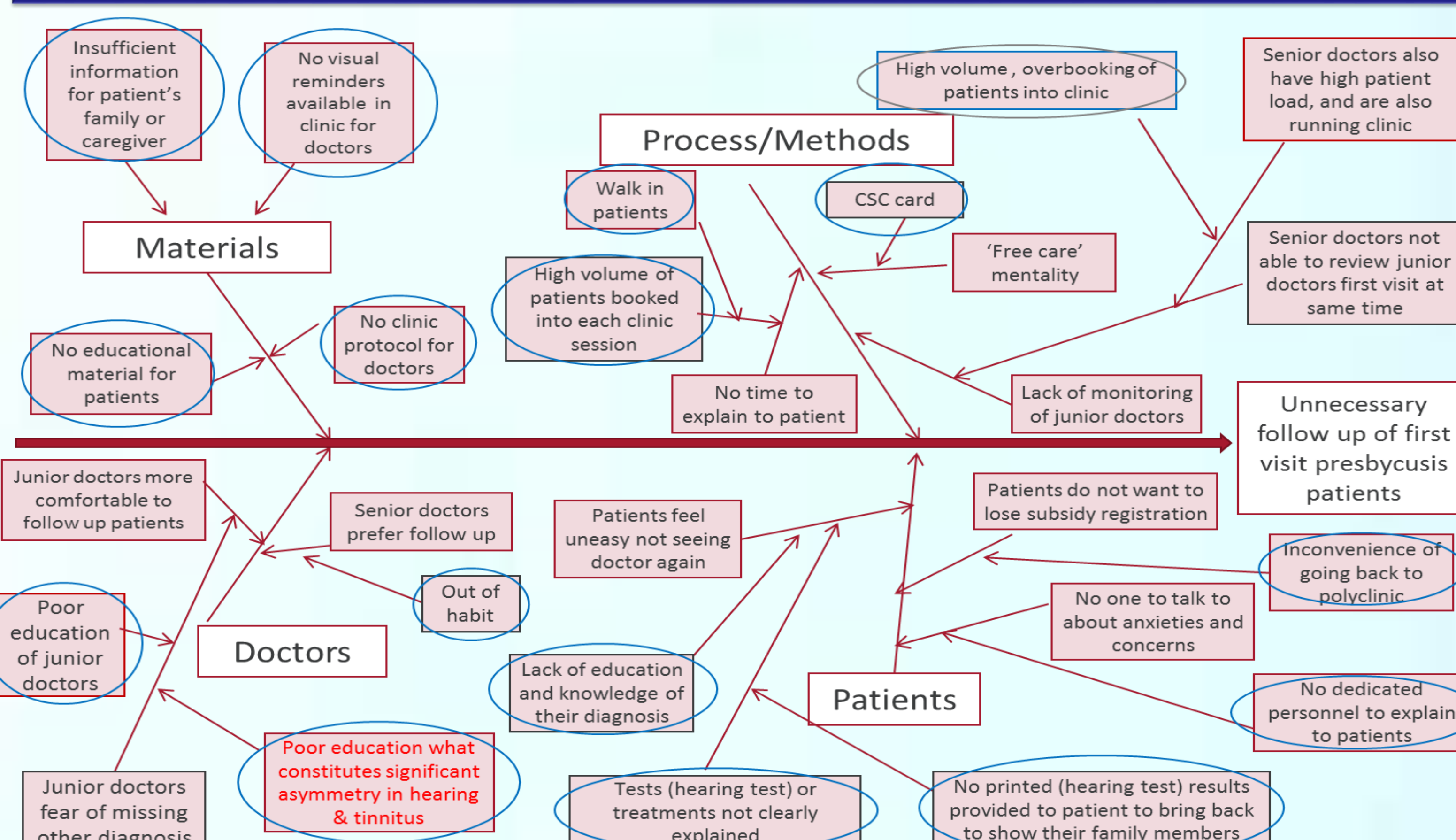
Note:

- Exclude 2nd ENT diagnosis
- Exclude patients who have Thyroid nodule, Giddiness and Dizziness, Ear Wax, OSA, Rhinitis, TM perforation, Eustachian Tube Dysfunction

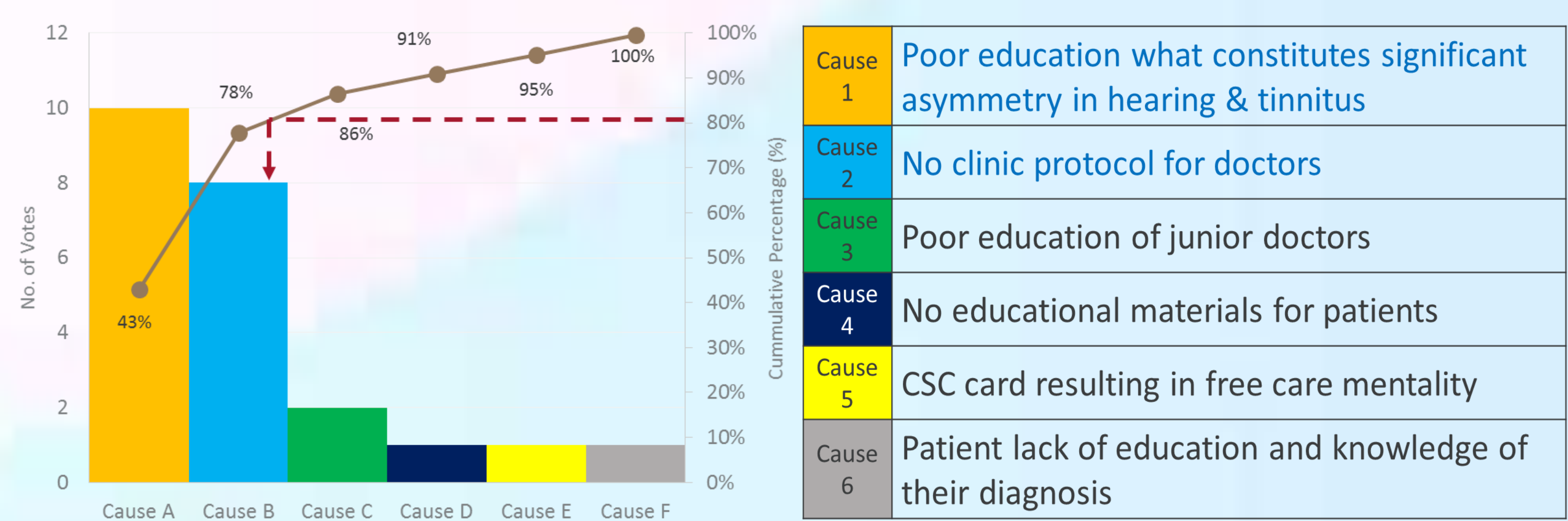
Flow Chart of Process



Cause and Effect Diagram



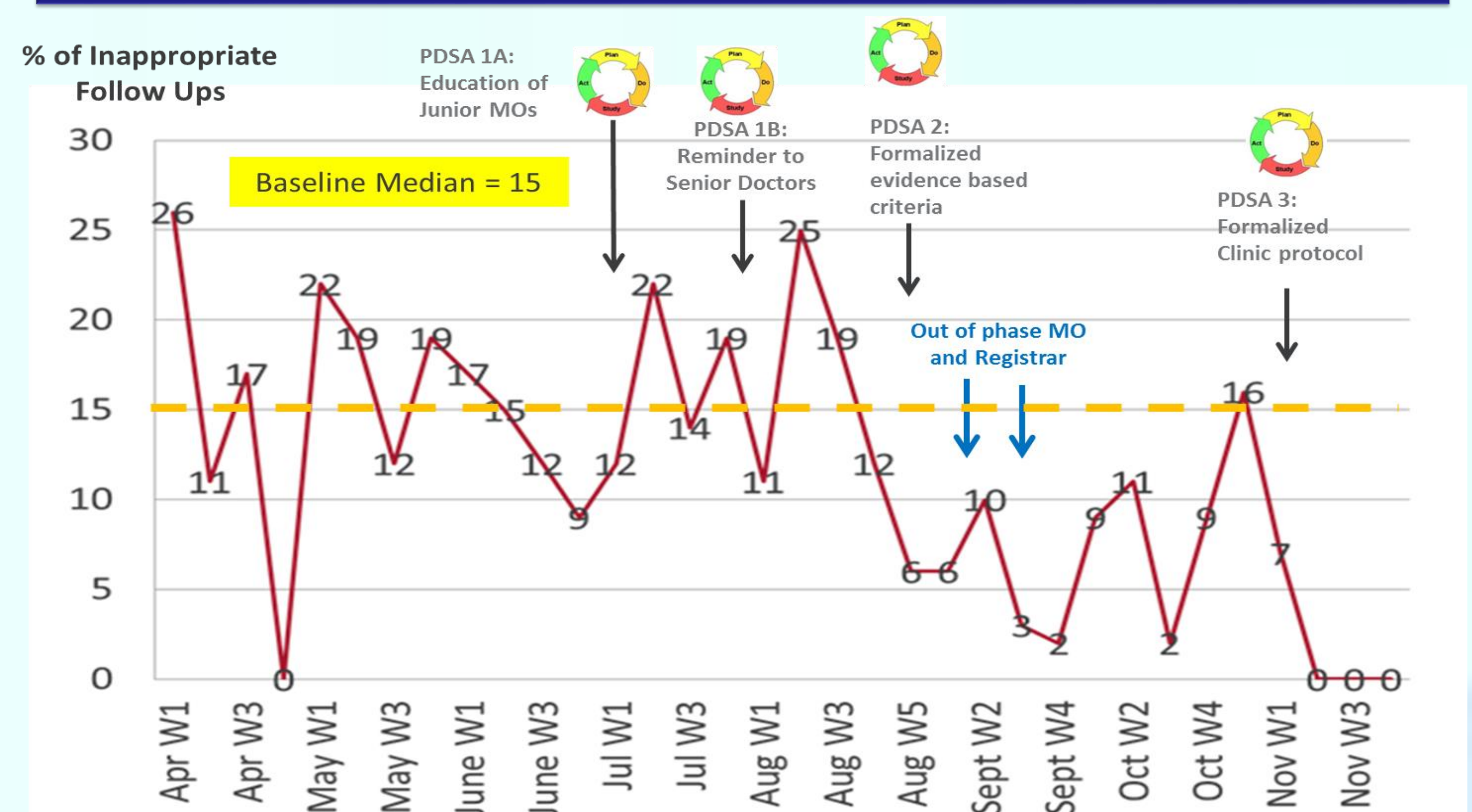
Pareto Chart



Implementation

CAUSE / PROBLEM (refer to Pareto Chart)	INTERVENTION	DATE OF IMPLEMENTATION
Cause A: Junior MOs fear of early discharge of patients	PDSA 1a: Education of Junior MOs	3 July 2018
Cause E: Senior doctors habitual custom to follow up presbycusis patients in 1 year	PDSA 1b: Reminder to Senior Doctors	3 August 2018
(After Audit) Poor understanding as to what constitutes significant asymmetry in hearing	PDSA 2: Education of doctors regarding what constitutes significant asymmetry in hearing	4 Sep 2018
Formal clinic protocol visible in clinic to remind doctors and to account for in between posting MOs	PDSA 3: Formal clinic protocol	2 Nov 2018

Results



Cost Avoidance

Private Rate	Apr to Jun 2018	Sep to Nov 2018
No. of Clinic Follow Up	37	15
No. of Audio Follow Up	37	15
No. of MRI Follow Up	12	4
No. of Clinic Follow Up after MRI	24	2
Cost Avoidance for Unnecessary Follow Ups (in 3 months)	$[(15-37) \times \$88] + [(15-37) \times \$31] + [(4-12) \times \$350] + [(2-24) \times \$156]$ = -\$7354	
Cost Avoidance for Unnecessary Follow Ups (per month)	$-\$8,850 \div 3$ = -\$2,451	
Cost Avoidance for Unnecessary Follow Ups (per year)	$-\$2,950 \times 12$ = -\$29,412	

Note:

Unit Cost for Clinic Follow Up (Private Rate) = \$88; Unit Cost for Audio Follow Up (Private Rate) = \$31; Unit Cost for MRI Follow Up (Private Rate) = \$350; Unit Cost for Clinic Follow Up after MRI (Private Rate) = \$88

Lessons Learnt

- Team work
- Multiple factors that can affect results
- Audit of results useful in helping with root causes
- Need for constant education of new doctors (clinic protocol better than individual batch education)

Strategies to Sustain

- Protected teaching at beginning of posting during orientation
- Clinic protocol