

Project Title

DaVinci Project

Project Lead and Members

Project lead:

- Dr Leong Chuo Ren
- Dr Lim Eng Kuang

Project members:

- Dr Dexter Chan Yak Seng
- Dr Chai Chung Cheen
- Ms Cathrine Kong May Ching
- Mr Toh Yew Chin
- Ms Judy Zhang Xia
- Ms Brenda Fong Xuan Yin
- Ms Suriani Binte Hut

Organisation(s) Involved

Khoo Teck Puat Hospital

Healthcare Family Group(s) Involved in this Project

Medical, Nursing, Healthcare Administration

Applicable Specialty or Discipline

Vascular Medicine, Renal Medicine, Emergency Care, Outpatient Care, Operations

Project Period

Start date: 01 March 2021

Completed date: 31 December 2021

Aims

To reduce the frequency of ED visit requiring admission for haemodialysis patient who presented with late vascular access dysfunction by 50% from average of 9 per month to <5 per month over a 1 year period.

Project Attachment

See poster attached/below

Background

See poster attached/below

Methods

See poster attached/below

Results

See poster attached/below

Conclusion

See poster attached/below

Additional Information

Accorded the NHG Quality Day 2022 (Category D: Building Strong Partnerships in Improvement Work) Best Award

Project Category

Care & Process Redesign

Quality Improvement, Workflow Redesign

Keywords

Haemodialysis, Emergency Department

Name and Email of Project Contact Person(s)

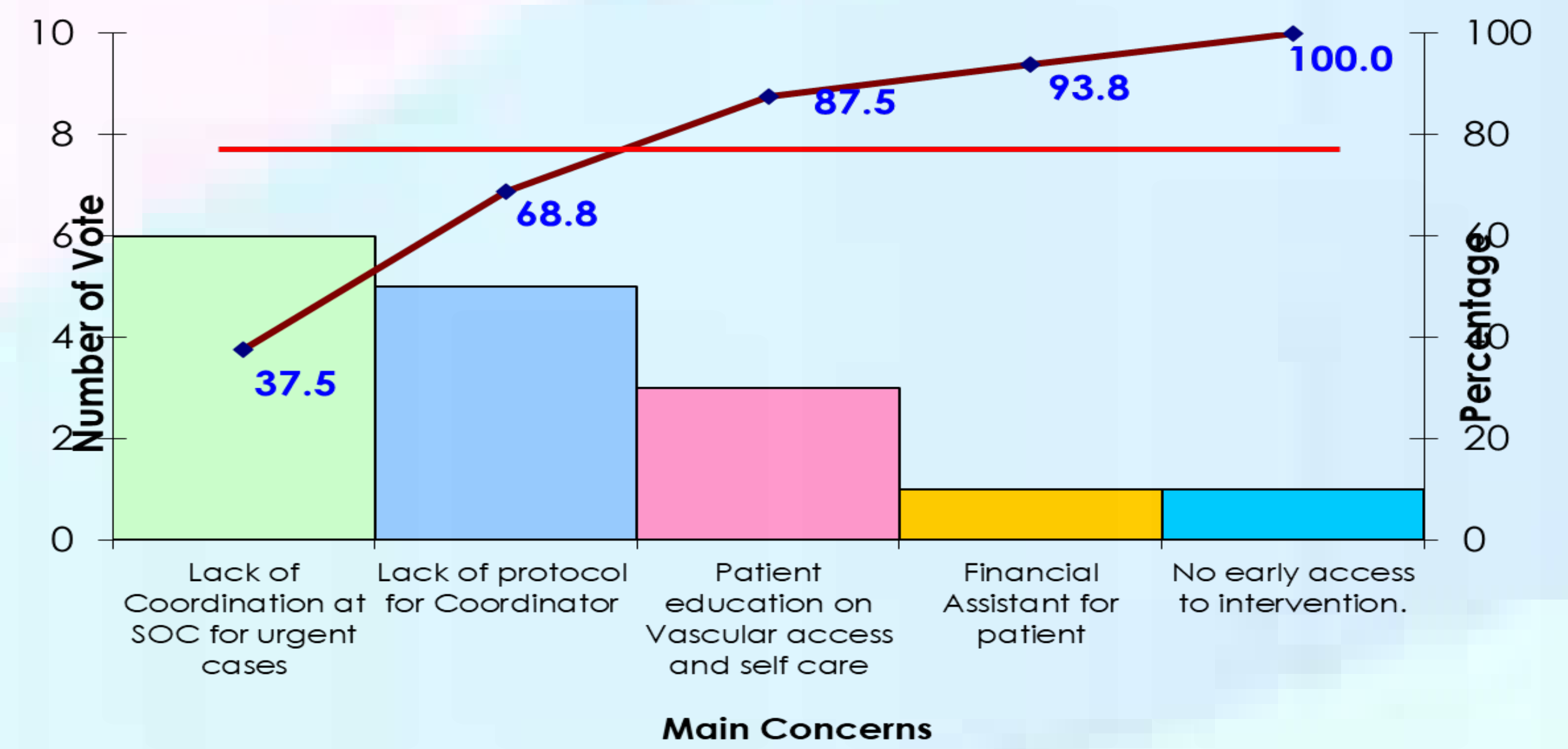
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Mission Statement

To reduce the frequency of ED visit requiring admission for haemodialysis patient who presented with late vascular access dysfunction by 50% from average of 9 per month to <5 per month over a 1 year period

Pareto Chart



Team Members

No.	Name	Role	Department	Position
1	Dr Leong Chuo Ren	Senior Consultant	Division Of Vascular Surgery Dept of Gen Surgery	Lead
2	Dr Lim Eng Kuang	Senior Consultant	Division Of Renal Medicine, Dept Of Gen Medicine	Co-Lead
3	Dr Dexter Chan Yak Seng	Consultant	Division Of Vascular Surgery Dept of Gen Surgery	Member
4	Dr Chai Chung Cheen	Consultant	Division Of Renal Medicine, Dept Of Gen Medicine	Member
5	Ms Cathrine Kong May Ching	Renal Coordinator	Division Of Renal Medicine, Dept Of Gen Medicine	Member
6	Mr Toh Yew Chin	Assistant Manager	Clinical Operation	Member
7	Ms Judy Zhang Xia	Senior Nurse Manager	NKF North Zone Nursing Admin	Member/ Patient advocate
8	Ms Brenda Fong Xuan Yin	Patient Service Associate	Specialist Outpatient Clinic C51	Member
9	Ms Suriani Binte Hut	Patient Service Associate	Specialist Outpatient Clinic C31	Member

Implementation

CAUSE / PROBLEM	INTERVENTION	DATE OF IMPLEMENTATION
Lack of Coordination at SOC for urgent vascular access cases	Relook into available resources and organise clinic to receive referral daily. Key contact points identified	01/06/2021
Lack of clear protocol for Coordinator to coordinate referral from Dialysis center	Da Vinci Team established criteria and workflow for referral to dialysis center. Use standardized referral form for clearer communication	01/07/2021
Lack of patient education on Vascular access	Determined not to factor much in workflow so was omitted.	

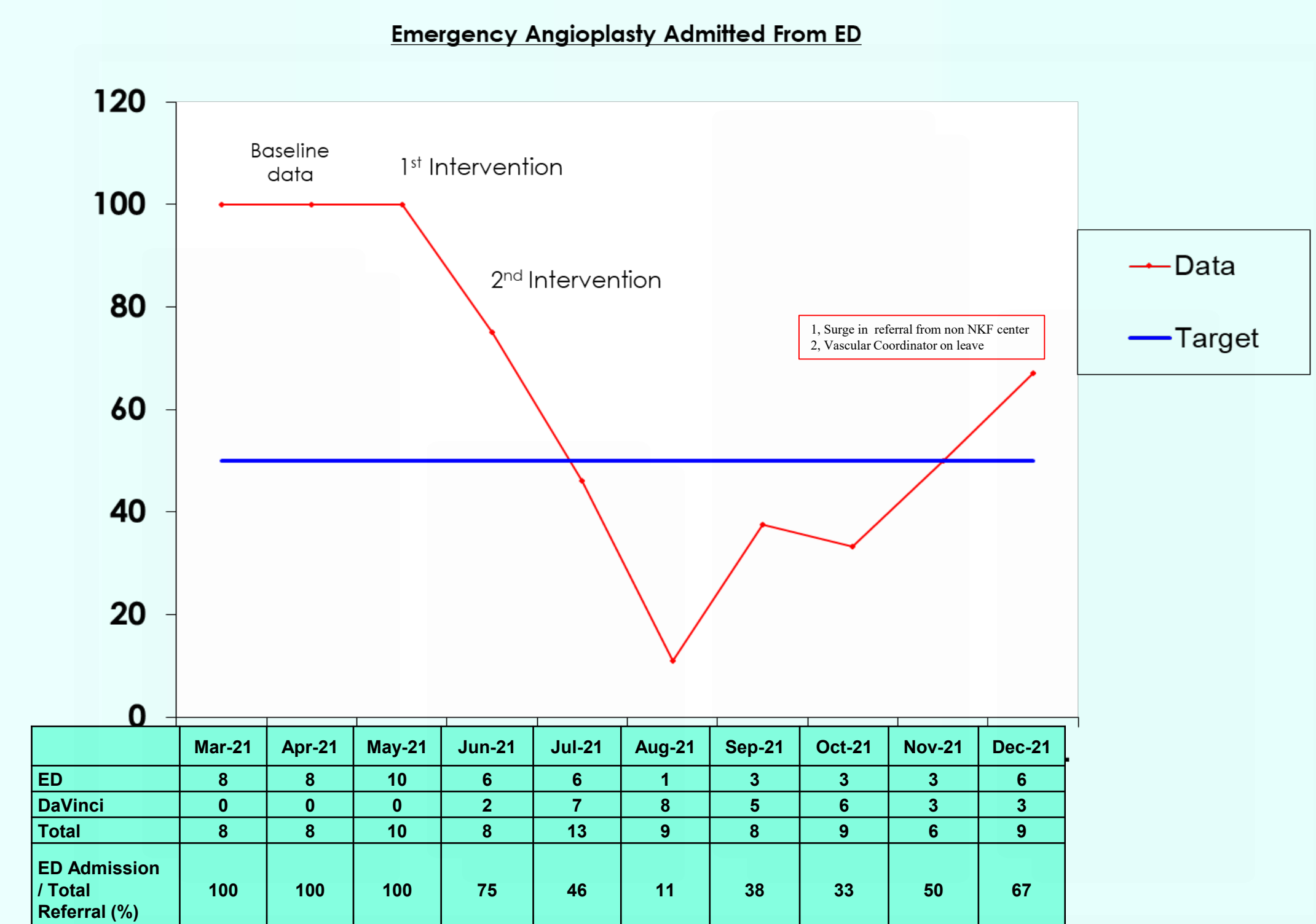
Evidence for a Problem Worth Solving

- As of now, 10-12 admission per month via ED for vascular access related problem.*
- All will need emergency angioplasty and inpatient haemodialysis support.
- Some will need temporary dialysis catheter insertion before angioplasty
- Some vascular access presented late and not salvageable.
- Average inpatient stay of 6-8 (Avg: 6.5)** days.
- Bed saving for hospital
- Preventing emergency angiogram via increasing elective angiogram/angioplasty resulting in more efficient utilization of resources
- Avoid wastage of dialysis resources in community dialysis center- slot not utilized as patient admitted to hospital
- Cost saving for patient

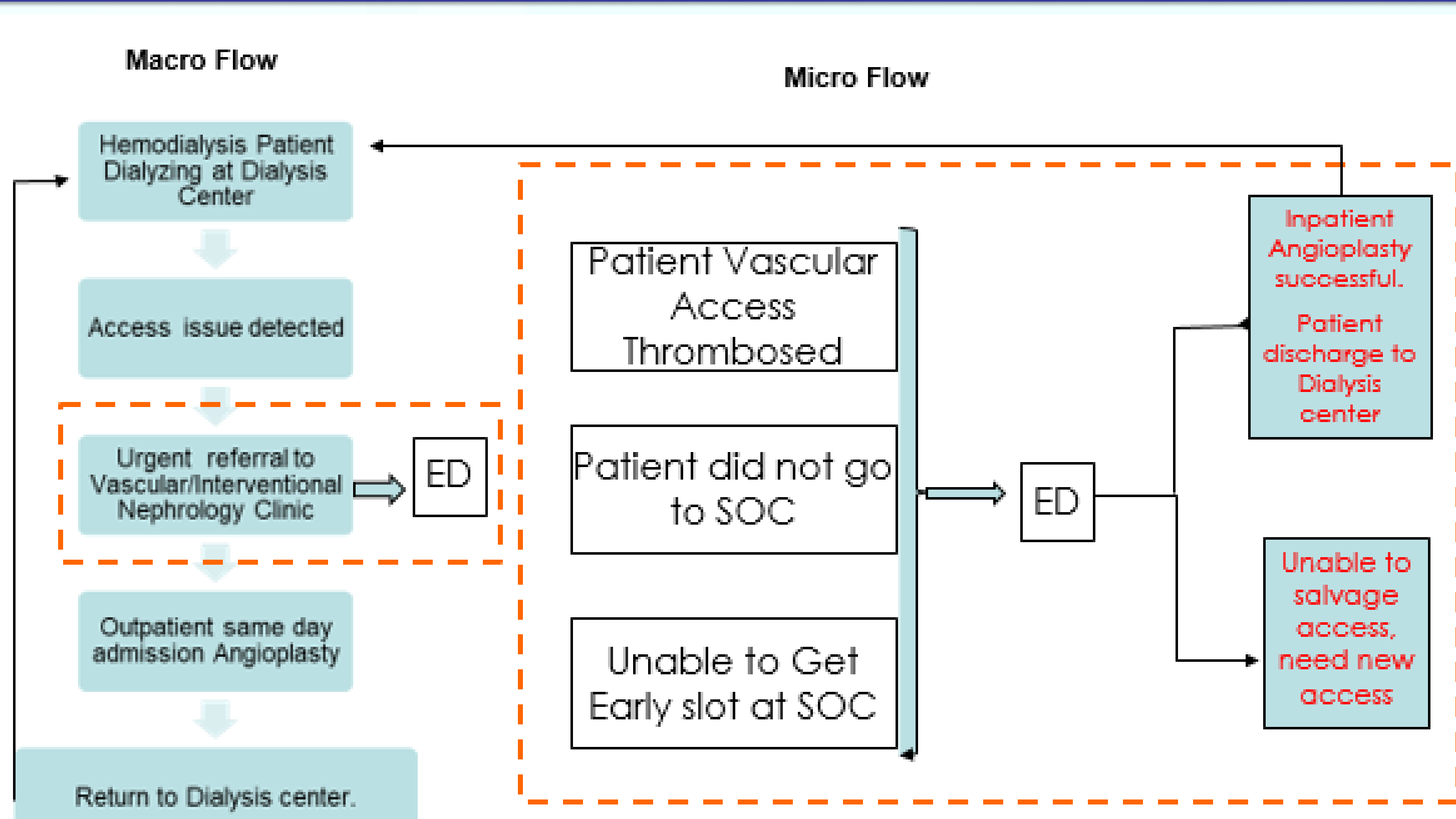
Current Performance of a Process

Please refer to "Results" section for baseline data

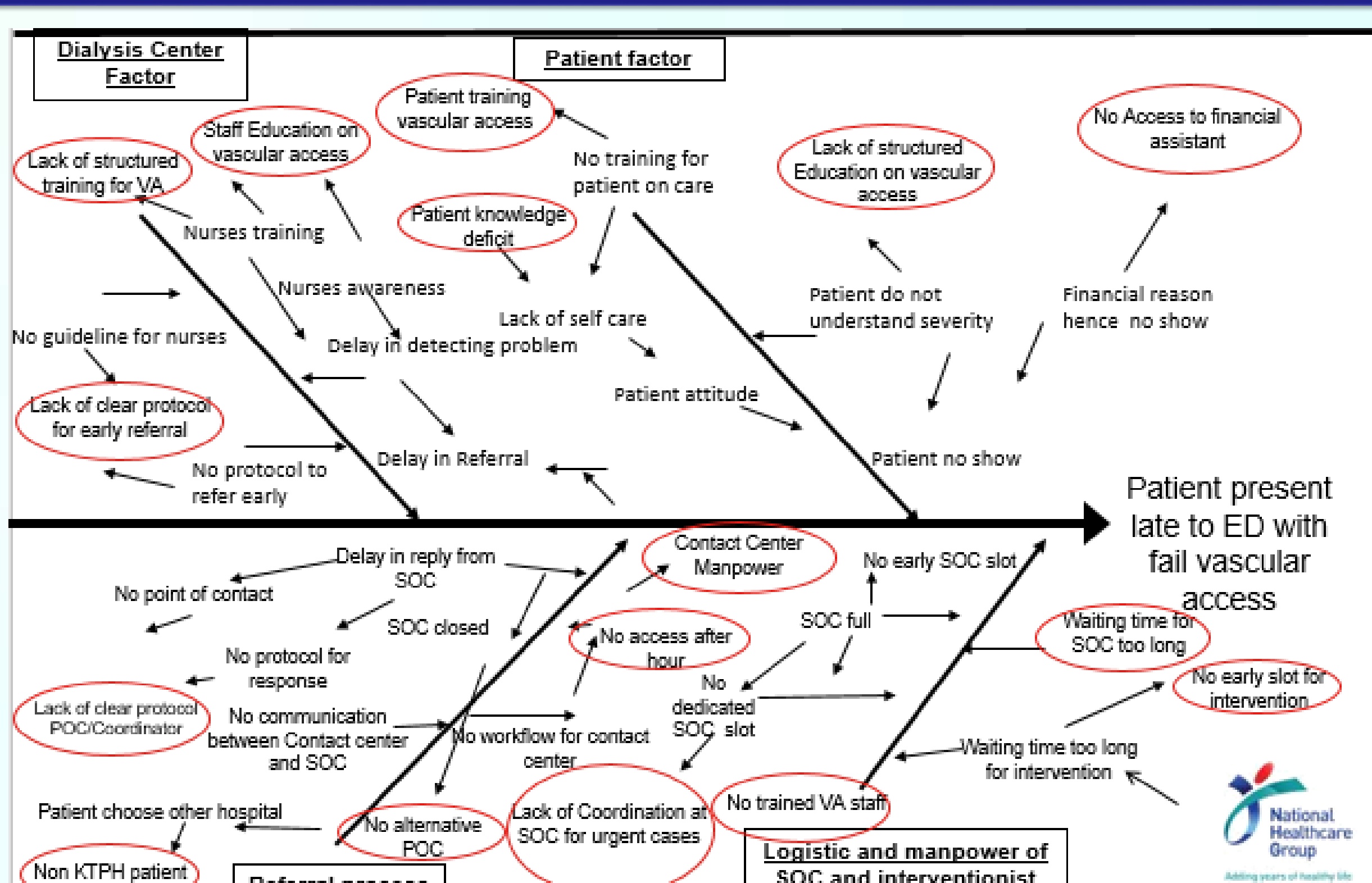
Results



Flow Chart of Process



Cause and Effect Diagram



Cost Savings

- Total Number of referral under Da Vinci: 34
 - Out of 34 cases, 10 require admission for dialysis despite timely intervention.
 - Total Admission avoided under Da Vinci : 24
 - No of Bed days saved : 24X 7.1 = 170.4
 - No of Ed visit avoided Jun to Dec : 34
- | Cost Savings (Mar-Dec '21) |
|--|
| Cost Savings arising from avoidance of Hospital admissions: \$203,640 (24 admissions avoided X 7.1 days = 170.4 bed days saved; 170.4 X \$1195.07 = \$203,640) |
| Cost Saving arising from avoidance of ED attendances: \$4,352 (34 ED attendances avoided X \$128) |

Problems Encountered

- System
 - Referral from non NKF/other centre not under current project.
- Resources
 - Occasional problems with angioplasty suite availability
 - Access to dialysis service after procedure
- Manpower
 - No coverage over weekends
 - Sustainability when coordinator is on leave

Strategies to Sustain & Spread

- Sustain:
 - Ensure continuity of manpower FTE
 - To discuss with CVC lab to expedite workflow for angioplasty for clinic patient.
 - To have dedicated procedure room for Da Vinci pathway patients
- Spread:
 - To spread to all dialysis centre including non NKF dialysis center up north
 - To allow even other NKF Region to refer if fall within KTPH catchment area