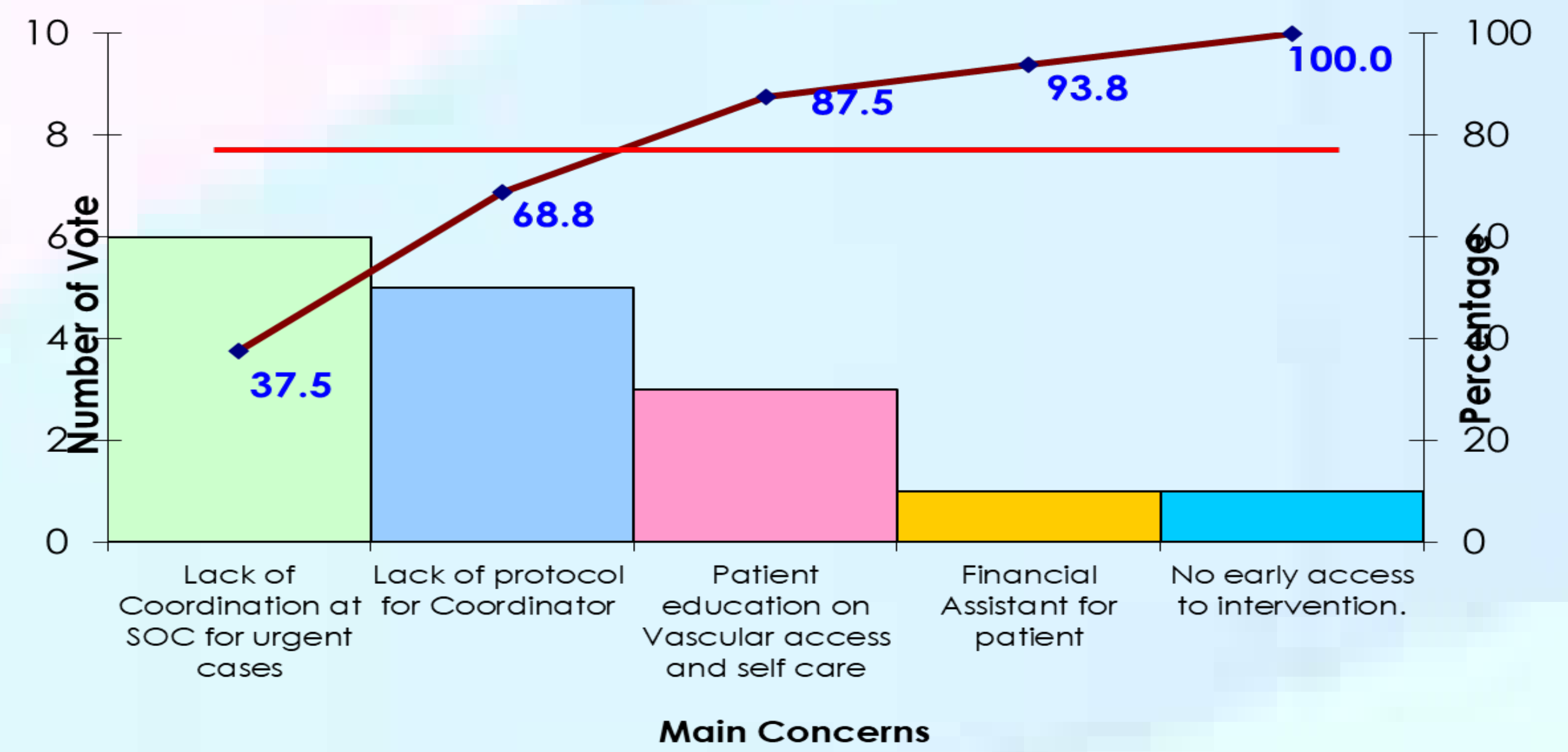


Mission Statement

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. | |

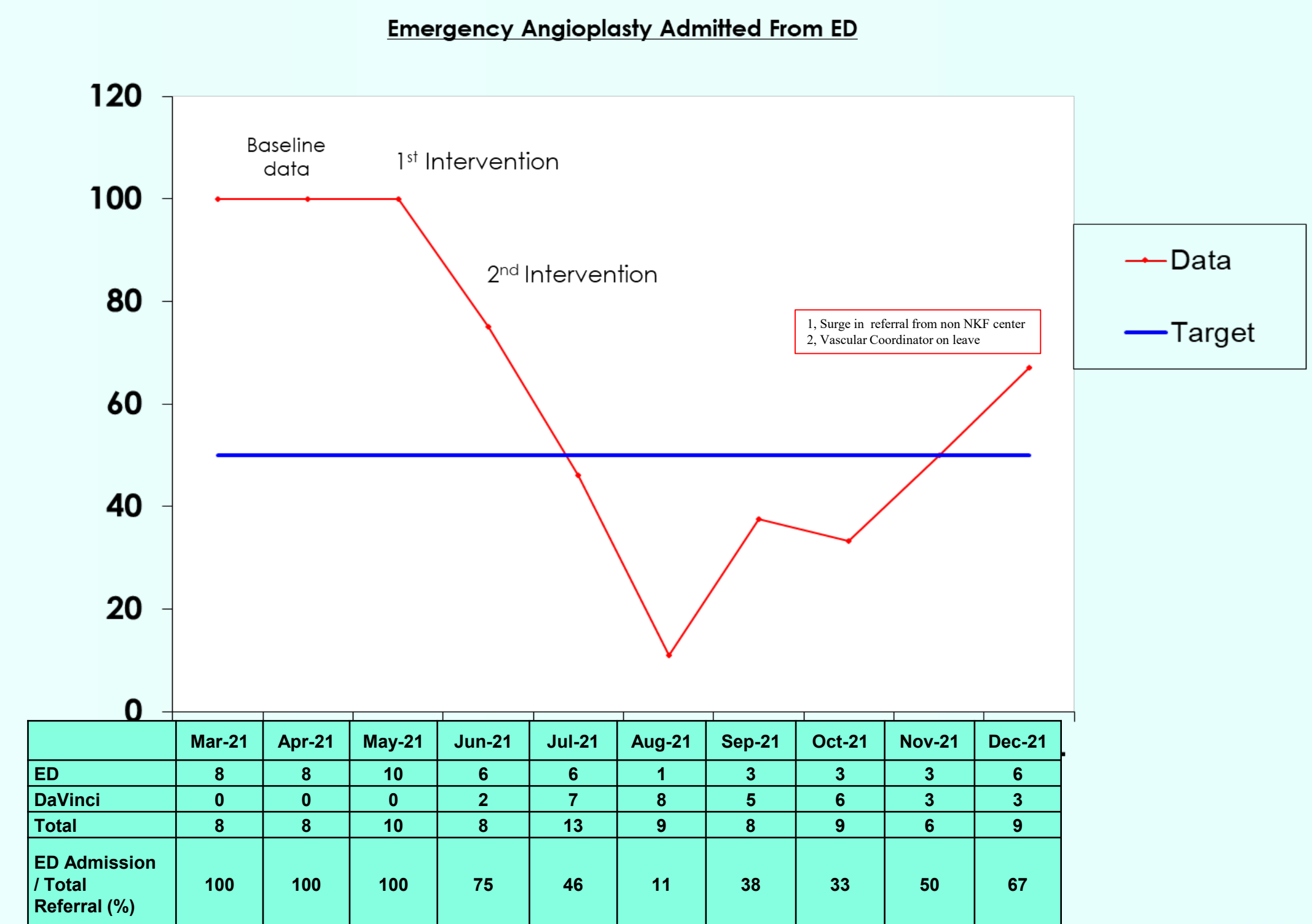
Evidence for a Problem Worth Solving

- 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

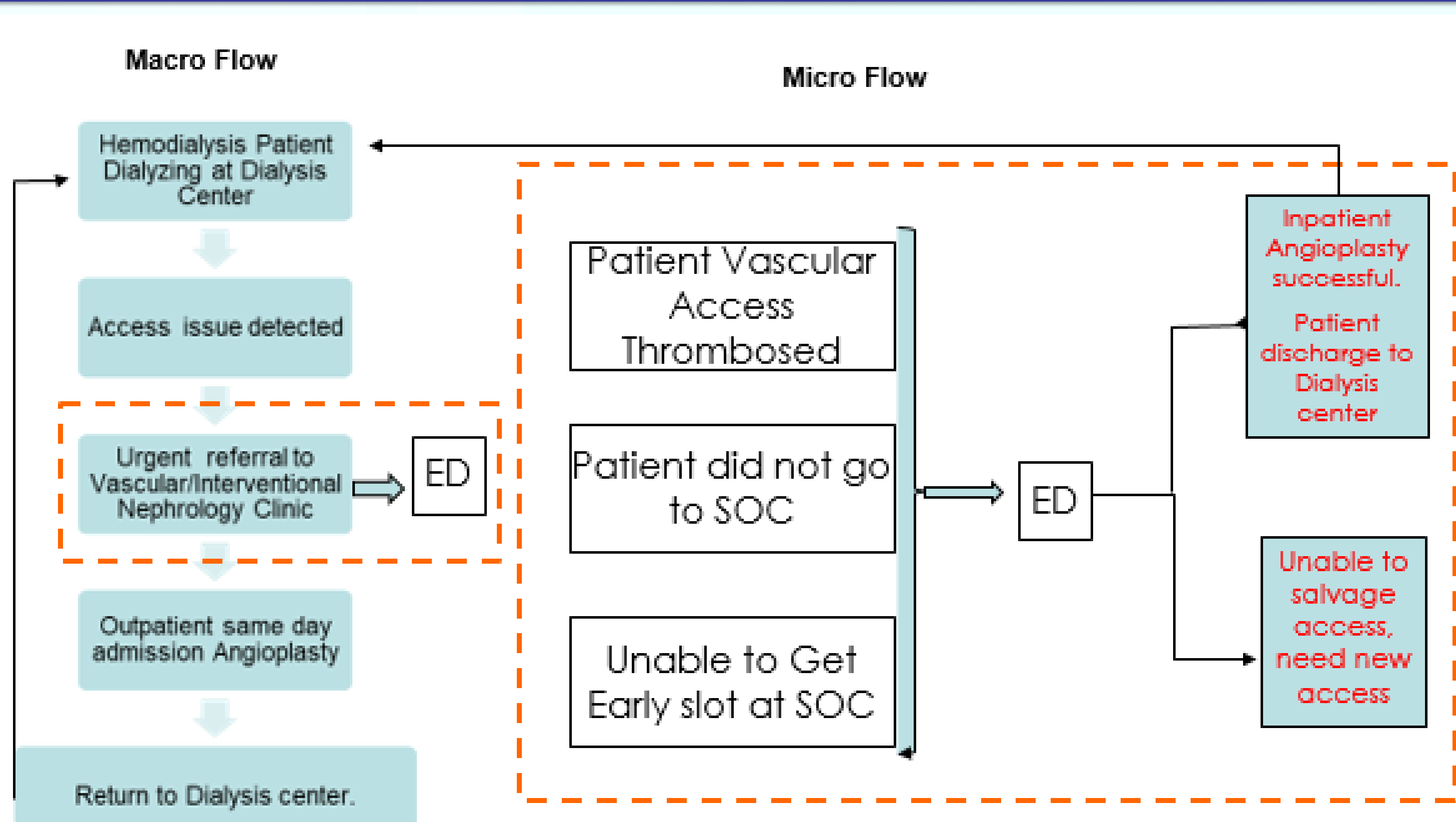
Current Performance of a Process

Please refer to "Results" section for baseline data

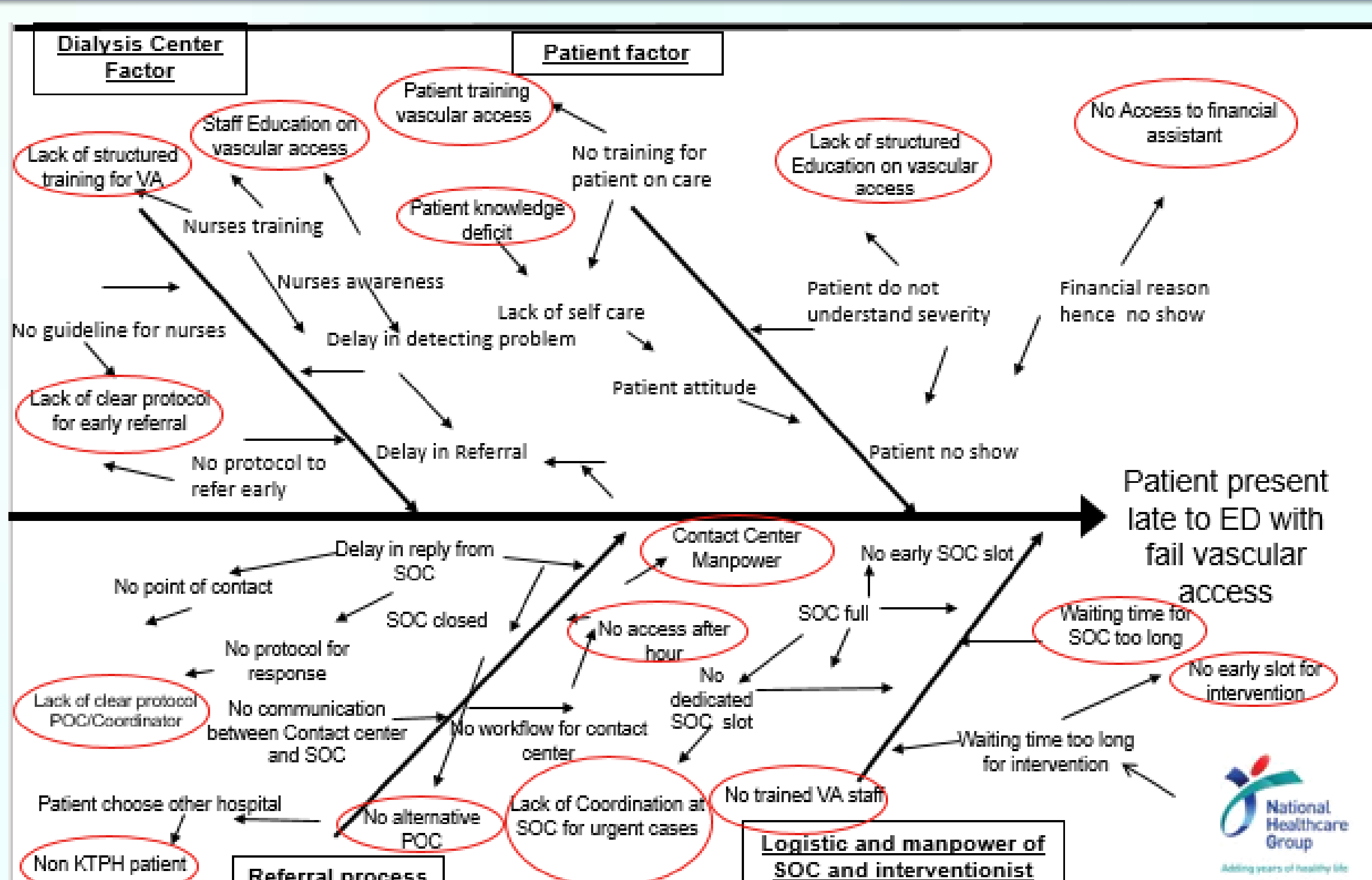
Results



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