Cannulation Team

DSI Marion County

Pat Coryell, RN, CNN
Set-up

- 14 physicians (NIM)
- 4 “sister” clinics (DSI)
- 6 “step sister” clinics (FMC)
- 3 nurse practitioners
- 2 surgeon groups
- 2 hospitals
- Patient count 110-120
#1 “Routine CQI Vascular Access”

- **CQI Team:** Access Coordinator, Facility Manager, Medical Director, Nurse Practitioners

103 patients

CATHETERS! 32%

24 permanent, disease or refusal
2728 Review

Front page of 2728:

18 b. Was patient under the care of a nephrologist?
Yes/No/Unknown 6-12 mo. >12 mo.

18 d. What access was used for first out patient dialysis?
AVF Graft Catheter
Data

- Current patients in that month only-admitted after 1-1-2006 (new 2728)

February 2008-56% of 51 patients were seen prior to initiation of dialysis.

25% of 51 patients (13) were seen > 6 months prior to initiation of dialysis and started dialysis with a catheter.

11 physicians received a data table re: their patient admits.
July 2008-30.6% of 62 current patients were seen prior to beginning dialysis.

19 (all) were seen > 6 months prior to initiation of dialysis and all started dialysis with a catheter

14 physician received a data table re: their patient admits, requested PCP outreach

#2“Timely Referral to a Nephrologist”
Discussed with Medical Director in CQI about the physician group to doing a PCP outreach about early referral and evaluation
Data

May 2009-39.3% of 61 current patients were seen >6 months prior to initiation of dialysis
29.5% (18) started with a catheter

Data table sent to physician group director and Facility Medical Director with a request for PCP outreach project for early referral and evaluation

**24 permanent catheters
Surgeon Issues

- Few successful “1st” placements of AVFs
- “Can’t, or won’t” place AVF, only AVG $$$
- Vein Mapping in office only, will not accept from hospital
- Inexperienced surgeons
- Not allowed to refer to “outside” surgeon groups (politics), hospital privileges

#4 “Surgeon selection based on best outcomes”
#5 “Full range of surgical approaches to evaluation and placement”
#6 “Secondary AVF placement”
Oct. 2007, Letter sent to surgeons showing their current data and detailing the FF Initiative. We ask for cooperation.

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Dec 2007, Letter sent to surgeons, included data, and requested AVF FIRST unless discussed alternative with nephrologist.

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It was decided, in CQI, that all access referrals would go to one surgeon unless insurance did not permit.
April 2009, We have added one new surgeon to group who states he is FF.
3 AVFs transferred in.

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“NIMAT”
at Indiana Kidney Institute (IKI)

- May 2008: invited a collective of facility managers and access coordinators from all sister clinics:
- IKI-neutral ground-only 3 other facilities represented (Access Coordinator for all NIM facilities)
  
  Presented 2728 data
  
  Presented surgeon data

Ask group (shared NIM physicians) to participate in FF data collection hoping to encourage continuity of care for all NIM patients and encourage physicians

#11 “Outcomes feedback to guide practice”
(2nd meeting-flop)
Monthly Access Flow studies reviewed by Access Coordinator for NIM group
Contact with each facility/access coordinator
  Reviews access flow results monthly
  Requests repeat access flows or fistulagrams
  Calls for assessments
  Sends reports
  Reviews access history

  Feb 2009, In-service training for staff to learn what and why to report

#9 Monitoring and maintenance to ensure adequate function”
July 2007

- Patient Education (again and again!)
- Tools

  Websites: FF, TRN, INC.,
  ESRD Networks

  Posters, hand-outs, discussion, DSI
  education, Access Choices bi-annual
  thru DSI

  #10 “Education for Caregivers and
  patients”
Caregiver Education (#10) April 2008

- Cannulation Workshop “CHICKEN LAB”
- Access anatomy/physiology
- Auscultation/Palpation
- Catheter complications
- AVF/AVG surgical repairs
- Staff “one on one” teaching prn

#8 “Cannulation training for AV fistulas” (last one)
Are we getting anywhere?

FRUSTRATION!!!
Patient refusals
Physician resistance
Surgeon resistance
Staff resistance

“What difference can WE really make to our patients now?

Preserve their accesses!
Why Begin a Cannulation Team?

We Can Make an Impact

- Preserve the established accesses of our patients
- Preserve the new accesses of our patients
- Anticipate access problems, and correct them, before the access fails
- TO PREVENT ACCESS FAILURE
How to Begin

- Recognize there is a problem
  1. Are there many infiltrations and misses?
  2. Have you had to set a limit on cannulation attempts?
  3. Are certain staff always requested to cannulate?
  4. Do you hear “no-one can stick it?” yet one or two staff always can.
  5. Send patients for fistulogram and the results are “no occlusion or narrowing”
Staff Training

- Orientation - many experienced PCTs
- Cannulation Camp, Chicken Lab
- IKI: presented an in-service on anatomy/physiology of access:
Set a Goal

- Minimize the amount of cannulation attempts per access, preserve new accesses

1. Rule: Any patient’s access cannulated 2 times by a single staff, without success, must then be referred to the nurse, who will cannulate, appoint another cannulator or refer to IR/surgeon
Did it Work?

- Staff went to other staff to ask for help rather than to the nurse
- Staff chose who to ask to re-cannulate the patient
- 1. “I know I can do this”
- 2. “The nurse was busy”
- 3. “So and so stuck her last time”
- 4. “She wanted so and so to stick her”
Result: Still

1. Many infiltrations and misses.
2. Certain staff were always requested to cannulate and lost their patient care time.
3. I still heard “no-one can stick it?” yet one or two staff always did.
4. Accesses were frequently “rested”, PCs were left in longer.
5. AVFs and AVGs were referred back to surgeons/for fistulagrams, just for us to hear “there is nothing wrong”
Make a Plan

Let’s develop a Master Cannulator Program!
Process/Compare Results

- DATA-comparison:
  - #10 new AVFs and #5 new grafts since 1-2008
  - #6 prior to 12-08 averaged 9 weeks to consistent cannulation
    (2 needles 6 dialysis in a row)
Evaluation

- Second Step: Evaluate staff cannulation techniques and knowledge
  1. Placed the nurses in charge of evaluating staff
Cannulation Skill Tool

- Cannulation Skills Check-Off
- Name:__________________________
- Date:___________________________
- Nurse Instructor:__________________
- Defines access by anatomy/physiology
- Assesses access by palpation and auscultation
- Identifies direction of blood flow
- Chooses needle site with care to needle length and needle gauge
- Inserts needle at proper angle, without trauma
- Places needles within vessel with care to vessel path
- Using syringe, checks for adequate blood flow
- Proper taping to secure access needle
- Identifies aneurysm/pseudo aneurysm
- Identifies symptoms of infection/reduced blood-flow/clotting

FISTULA		GRAFT
Result: staff resistance

- All staff passed with flying colors (hmmmmmmmm??????)
- Continued infiltrations and multiple needle sticks
- Ego issues
- Some staff who had requested help before with cannulations were not asking for help now
Plan #2

- Appoint one person to evaluate staff for consistency
  1. Participates regularly in patient care
  2. One on one, pull up a chair!
  3. Discussion/demonstration of skills
  4. Staff Education opportunity
Assigned “Master Cannulator”

- Staff assigned to cannulate new and troubled accesses:
  - One exception
  1. If assigned staff member was busy then the person assigned to the pt would:

Go to “their” chosen staff for help

Stick the patient themselves (too many times)
Consequently

- The idea for the Cannulation Team was born.

How to choose:

1. The most requested “stickers” were also the most skilled:

   - Instincts
   - Touch
   - Planned needle placement
   - Listened to the patient
The Team

- The Nurse Captain (good sticker, works both shifts)
1. Nurse Captain makes all cannulation assignments (new and difficult)
2. Reviews access problems with pt, team, IKI, NPs, and Access Coordinator
3. Nurse Captain appointed 3 day-shift PCTs and one evening-shift PCT (rotate) who now receive staff support (mostly)
3. Monitors care and c/o for all AV accesses
4. Starts “Access Initiation Tool”
Still some resistance: Non assigned staff receive reprimands for not allowing team member who is assigned to cannulate their patient.

May require re-orientation, no matter what their experience level is
Result of Rotating Needles

INDICATIONS FOR PROCEDURE: The patient is a 63-year-old female who is dialyzing through a right upper arm graft. On her second attempt, she had some pain at 1 of the stick sites. It was manipulated. She developed a very large hematoma in her upper arm. She was sent to the hospital, did some duplex ultrasound where she was found to have extravasation from here so I took her to the operating room for exploration.

DESCRIPTION OF PROCEDURE: Informed consent was obtained. The patient was taken to the operating room. The patient’s right arm was prepped and draped in the normal sterile fashion. I made an approximately 2 cm incision over the proximal aspect of the graft, got around the graft so that I could have proximal control. I then made an approximately 5 cm incision over the stick site, dissected down to the graft in which case I encountered a large laceration to the graft at the needle site. I then clamped the graft proximally to get control and then I oversewed the hole with a 4-0 Prolene. We released the flow back to the graft. The graft still had good flow. It was hemostatic. I dissected out a large amount of the clotted hematoma and then we began our closure.
DSI Guidelines for Cannulating a **NEW AVF**

**DIRECTIONS:**

- The Readiness of the AVF (arterio-venous fistula) is determined by the access surgeon, the nurse practitioner, and the RN assessment. The goal is to gently use the AVF when new to promote maturity and strength allowing the AVF to progress to the prescribed BFR (blood flow rate). This protocol may be adjusted by the RN, based on access assessment. However, the progression should be maintained.

**ONLY ASSIGNED STAFF SHOULD CANNULATE THE NEW AVF DURING THE PROTOCOL PERIOD:**

- Always use a tourniquet for the AVF.
- Use only 17 gauge needles unless otherwise specified by the access surgeon.
- Indicate success by checking yes or no. Comment on any problems.
- If a vascular access event occurs (infiltration, low arterial flows) report to RN. DO NOT attempt another needle stick. The RN will report to the nephrologist for follow-up referral.
- If an infiltration occurs, use the catheter for one more week before attempting to use the AVF again.

**Projected start date to begin using 15 ga needles:** ____________________________

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**Start Date**

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**Projected start date to begin using 15 ga needles:** ____________________________

- Name:_________________ Initials:____
- Name:_________________ Initials:____
- Name:_________________ Initials:____
- Name:_________________ Initials:____

*File form under "Access Information Sheet" in PEARL.*
Evidence of Success

1. Happier patients, less c/o, less requests for certain “stickers”
2. Healthier AVFs
3. Earlier referral for problems (immaturity/placement/size)
4. Buttonholes (even helped a sister clinic develop a buttonhole)
DATA

#4 new accesses (AVFs) since 12-08
#3 3 weeks to success with the TEAM
#1 waiting to heal from transposition
Future

- A tracking record has been added to our computer system (Feb 09) “adverse events” to track infiltrations and >2 needle placements.
- Buttonhole policy requires “one on one” scheduling for 3 weeks (we have one success, 100%, so far).
- Visibly there are less access problems, less patient complaints.
Re-evaluation of Team

- On-going process
- Add new members as new staff arrives and proves themselves
- Non team members included in evaluation process:
  1. Access conditions
  2. Access Flow evaluations (provided Access Flow interpretation training)
  3. Pre and Post dialysis access care
Visible Outcomes

- Improved patient confidence
- Improved staff knowledge
- Improved staff team-work
- Saving accesses
Have We Improved?

- Mar 08-Mar 09 AVF up 7 percentage points

Don’t Quit!!!