



BC Nephrology Days
Friday Oct 3rd, 2008



Catheter Insertion:
Is it Possible for
Nephrologists?



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fraserhealth

Better health.
Best in health care.

Fraser Health PD Program



- 78 patients in 1998
- 238 patients as of March 31st, 2008
 - 187 Cycler
 - 44 CAPD
 - Remaining on IPD or training



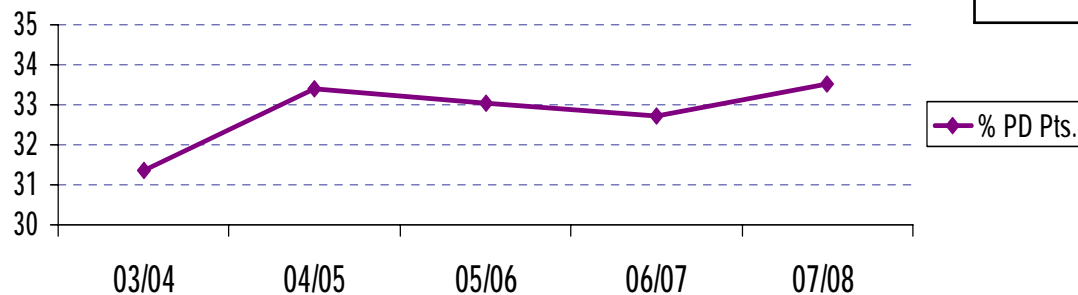
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Peritoneal Dialysis Intake Rate

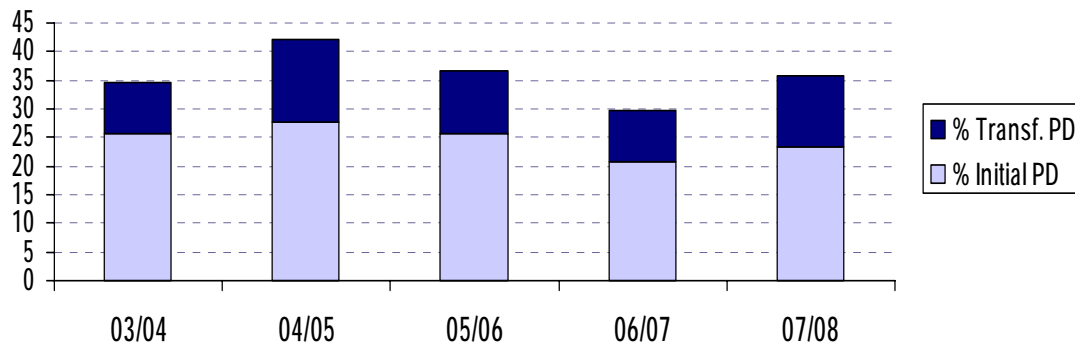


Percentage of Peritoneal Dialysis Patients at Year End



Status	Trend	Target	Actual
●	Prev: → Intake: ↑	≥ 25%	Prev.=33.5% Intake=35.6%

Percentage of Patients who Initiated Peritoneal Dialysis During Year



Source: Provincial Registry of Chronic Kidney Patients (PROMIS).
FHA Management Indicator Report
(BC Renal Agency July 15, 2008)

Fraser Health PD Program



Key to a successful PD program:

- The ability to insert PD catheters in a timely manner and to avoid catheter related complications

The FH Renal Program has developed a streamlined approach to the insertion of PD catheters *at the bedside* by the nephrologists coupled with strong nephrology nursing support

Bedside Catheter Insertion: Patient Preparation



5 Days Prior to Procedure:

- anticoagulation is stopped

Day before procedure:

- Bowel prep with Lactulose
- Patient requested to bathe or shower

Morning of procedure:

- light breakfast
- regular medications including Insulin if diabetic

Bedside Catheter Insertion: Patient Preparation



- Patient arrives 1 hour prior to procedure
- Vital signs are taken and blood glucose checked if patient is diabetic
- Ensure bladder is empty and patient has voided
- Patient is given sedation
- An intravenous is started for IV antibiotics

Bedside Catheter Insertion Technique



Providine prep to belly

Bedside Catheter Insertion Technique



Local 1% xylocaine

Bedside Catheter Insertion Technique



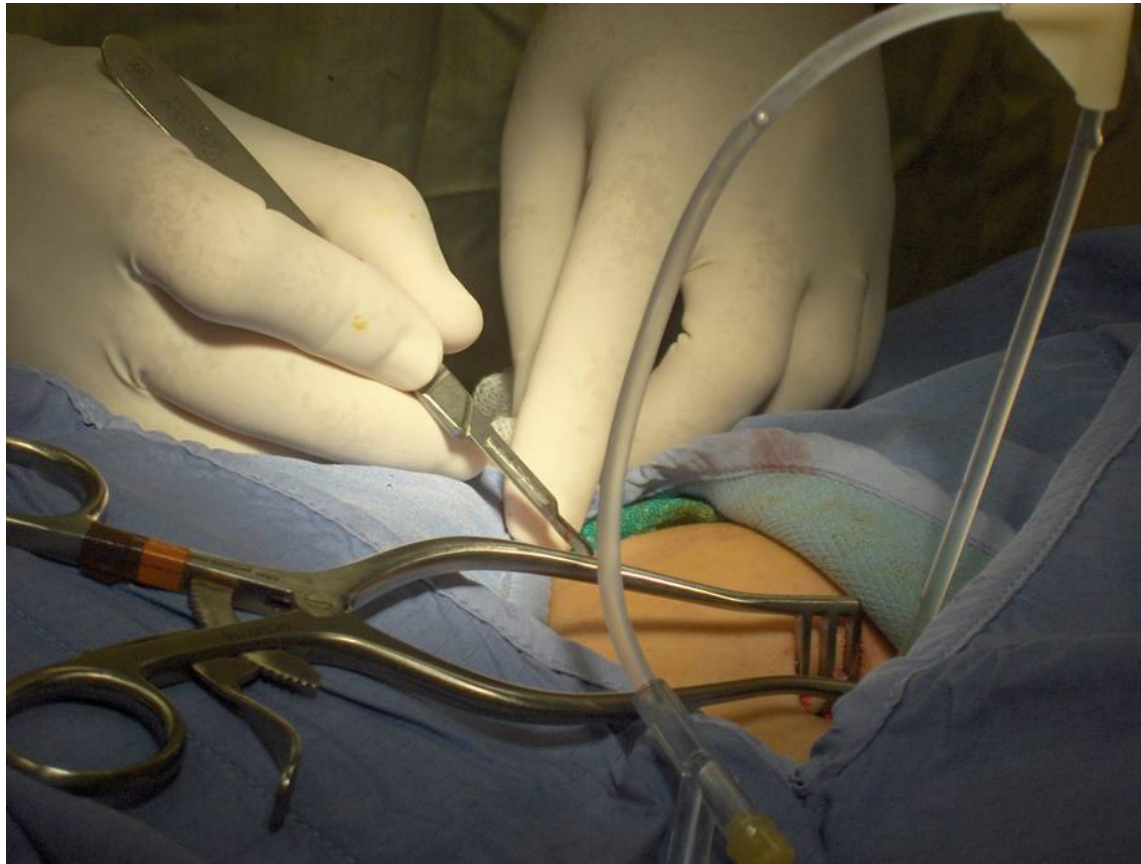
1" incision midline from 1" below umbilicus
(1" spreader)

Bedside Catheter Insertion Technique



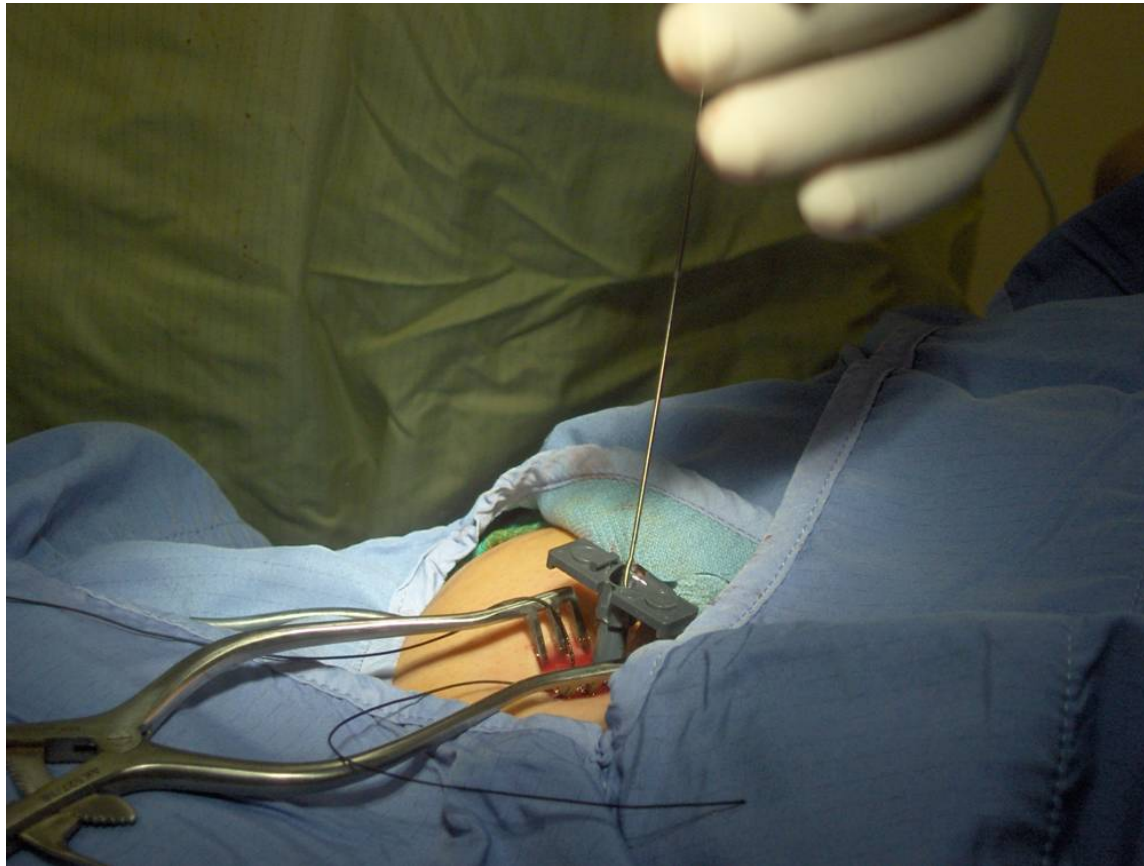
McGaw temporary catheter, rotating pressure,
release with “pop”

Bedside Catheter Insertion Technique



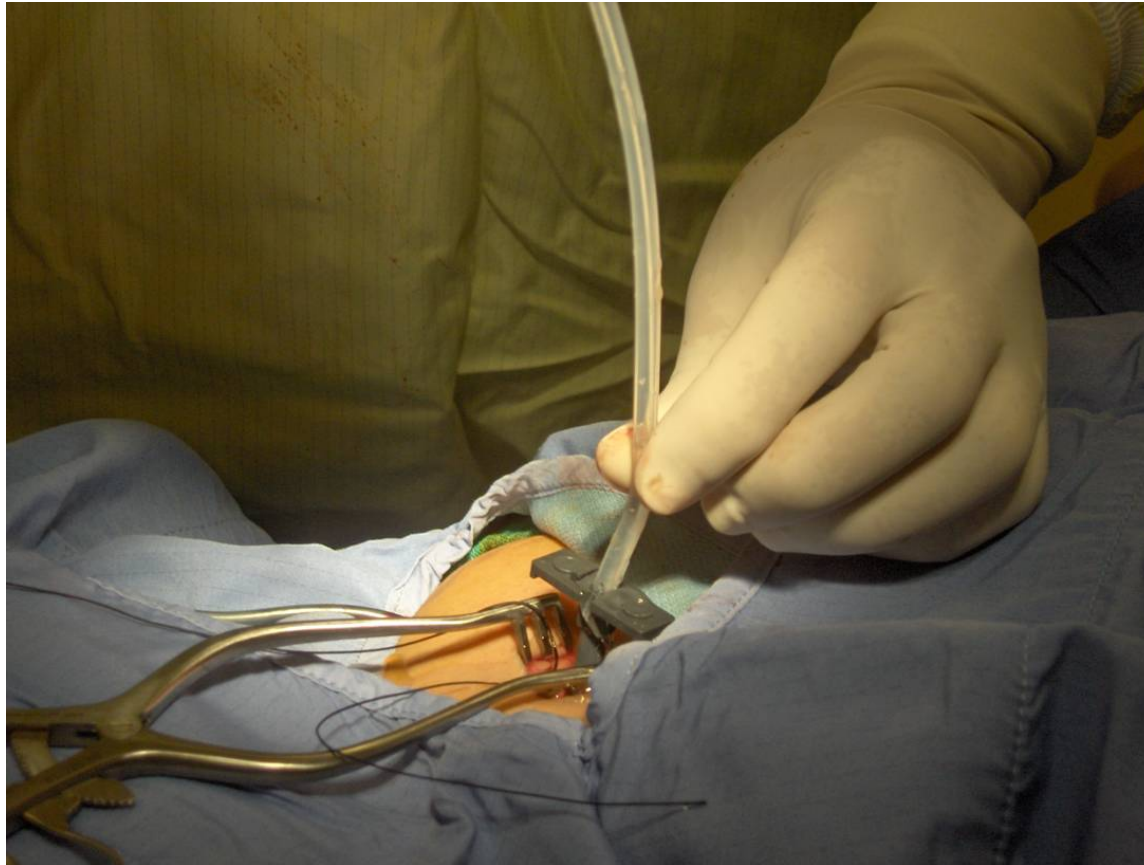
#15 Blade Stab (no pull)
for exit

Bedside Catheter Insertion Technique



1 silk purse string around
subcutaneous tissue

Bedside Catheter Insertion Technique



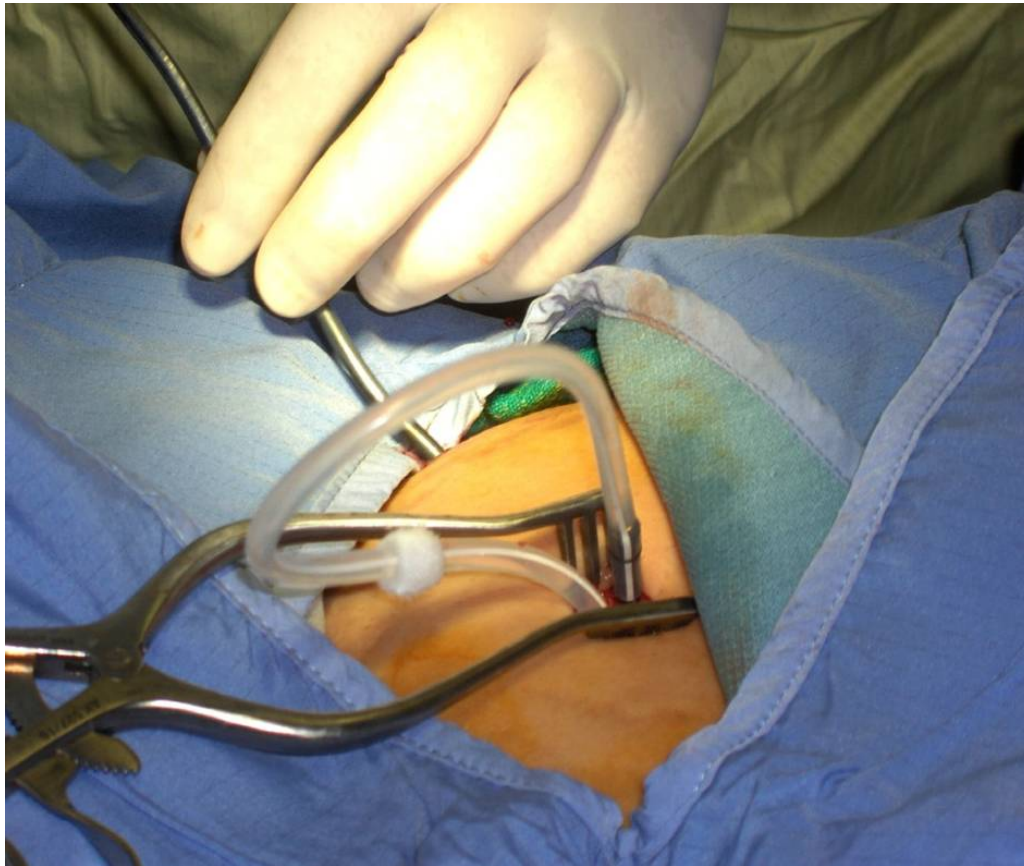
Peel Apart Introducer

Bedside Catheter Insertion Technique



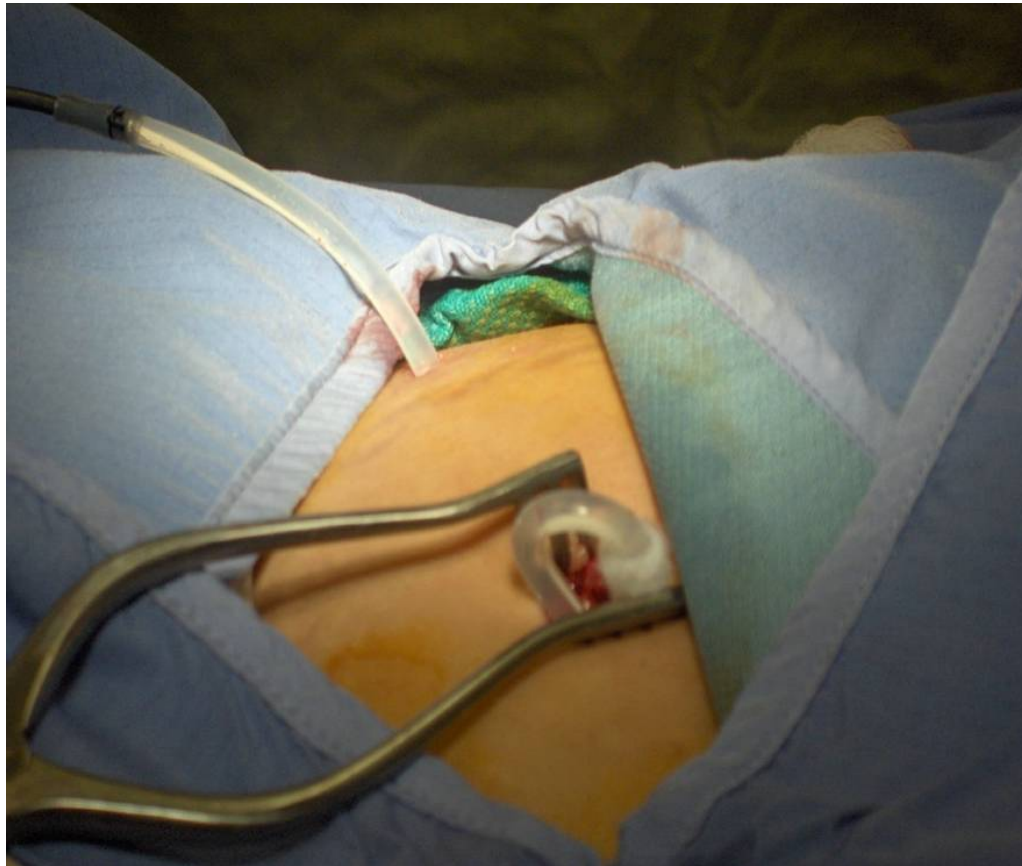
Peeling apart
Include inner cuff with purse string and tighten

Bedside Catheter Insertion Technique



Malleable uterine sound through exit
Stab and tunnel
Catheter end held with silk tie

Bedside Catheter Insertion Technique



Work outer cuff through tunnel

Bedside Catheter Insertion Technique



Before last stitches
3-O Prolene

Bedside Catheter Insertion Technique



3-O Prolene

Post Insertion Care



- Patient remains in PD unit for 3-4 hours post insertion (vital signs checked immediately after procedure and then every ½ hour to 1 hour)
- Few patients require analgesia other than Tylenol
- Patient returns weekly for catheter flush and dressing change
- After 3 weeks of catheter flushing, patient receives 1 day of IPD to assess catheter function

Post Insertion Care



- It is important that the new catheter is draining well and potential problems are dealt with prior to commencing with PD training
- Weekly blood work to check Urea and Creatinine levels
- If a patient's condition requires immediate dialysis, IPD is initiated for 8 hours daily, 3 times a week until PD training can commence.

- One part-time RN (M/W/F 12 hr shifts) is dedicated to assist with:
 - catheter insertions
 - drop-in patient problems, and
 - to give Intermittent Peritoneal Dialysis (IPD) to those patients needing it
- PD training nurses are also available to assist insertion nurse if needed.

Techniques for Placement of PD Catheters

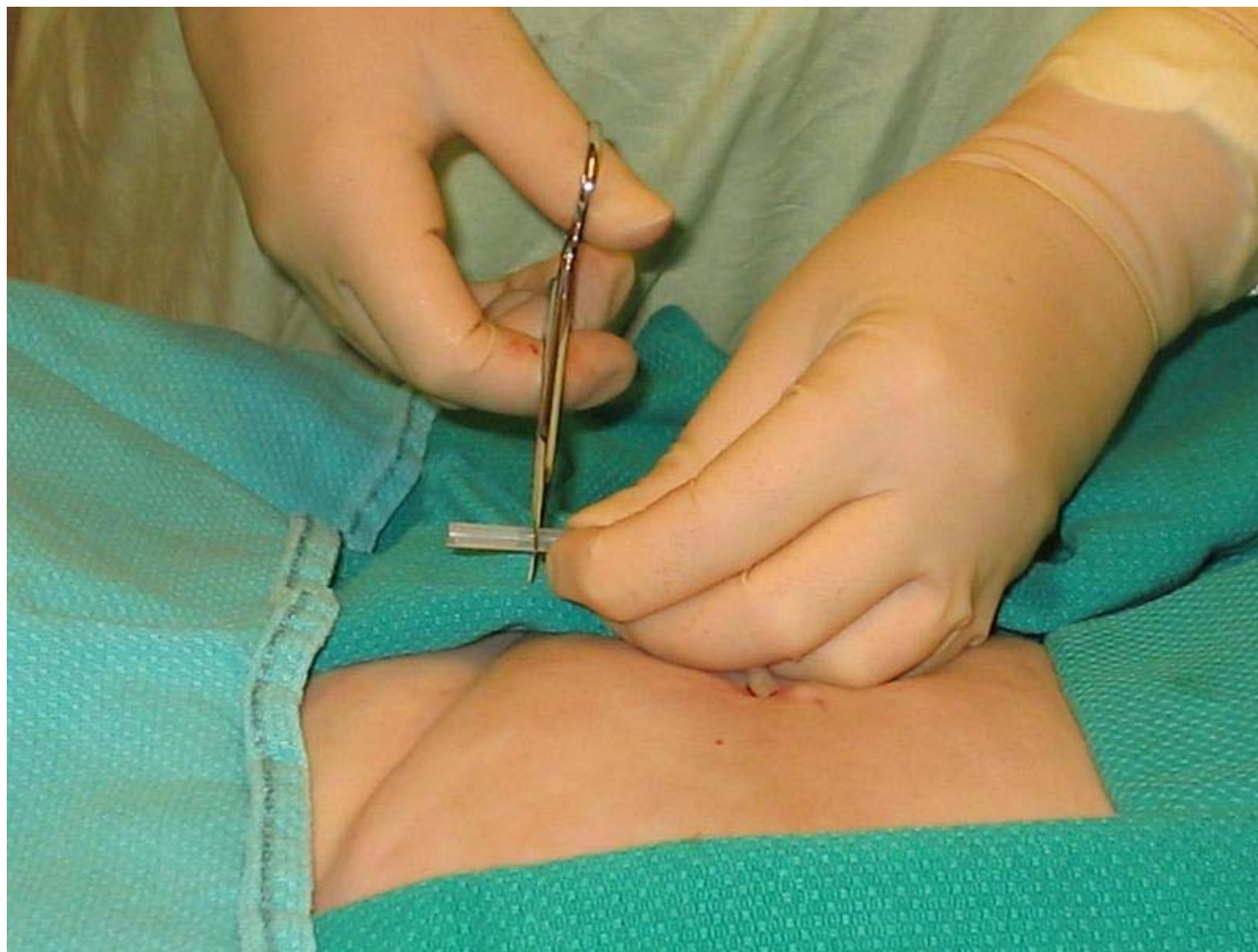


- Blind “by feel” placement at the bedside
- Surgical placement using laparotomy or laparoscopy (2 punctures)
- Peritoneoscopically guided catheter insertion (with or without X-ray confirmation)

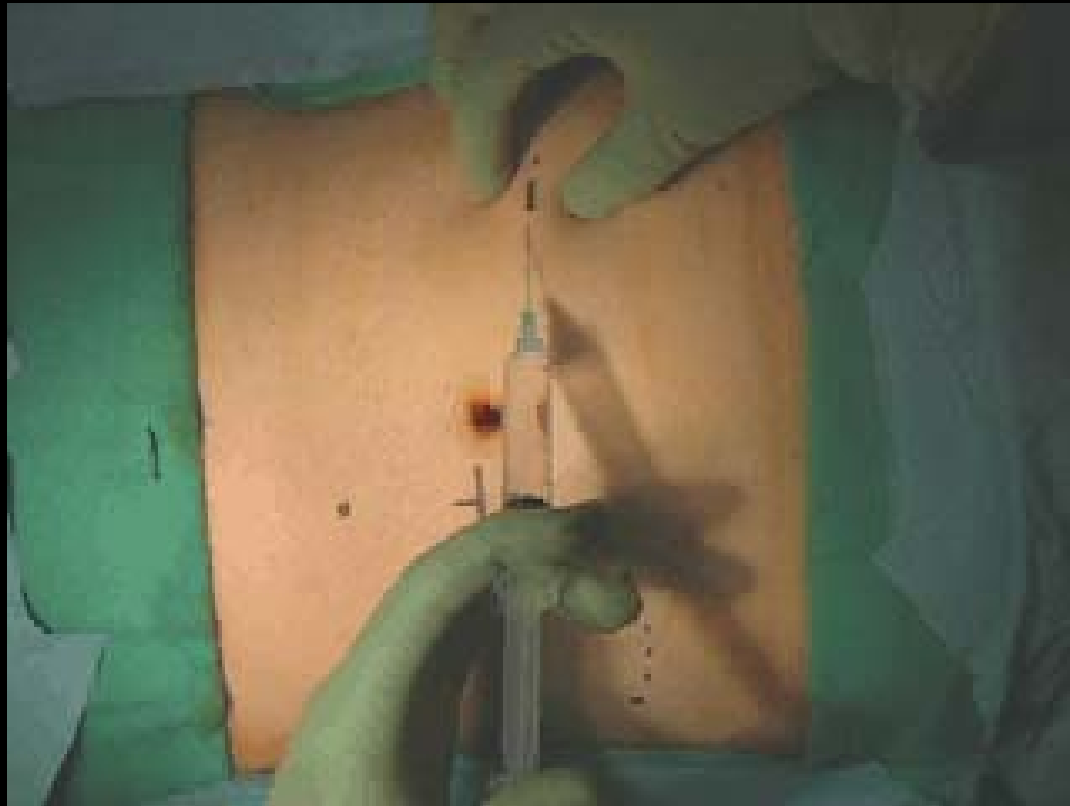
Courtesy of Dr Brendan McCormick (Ottawa Hospital)



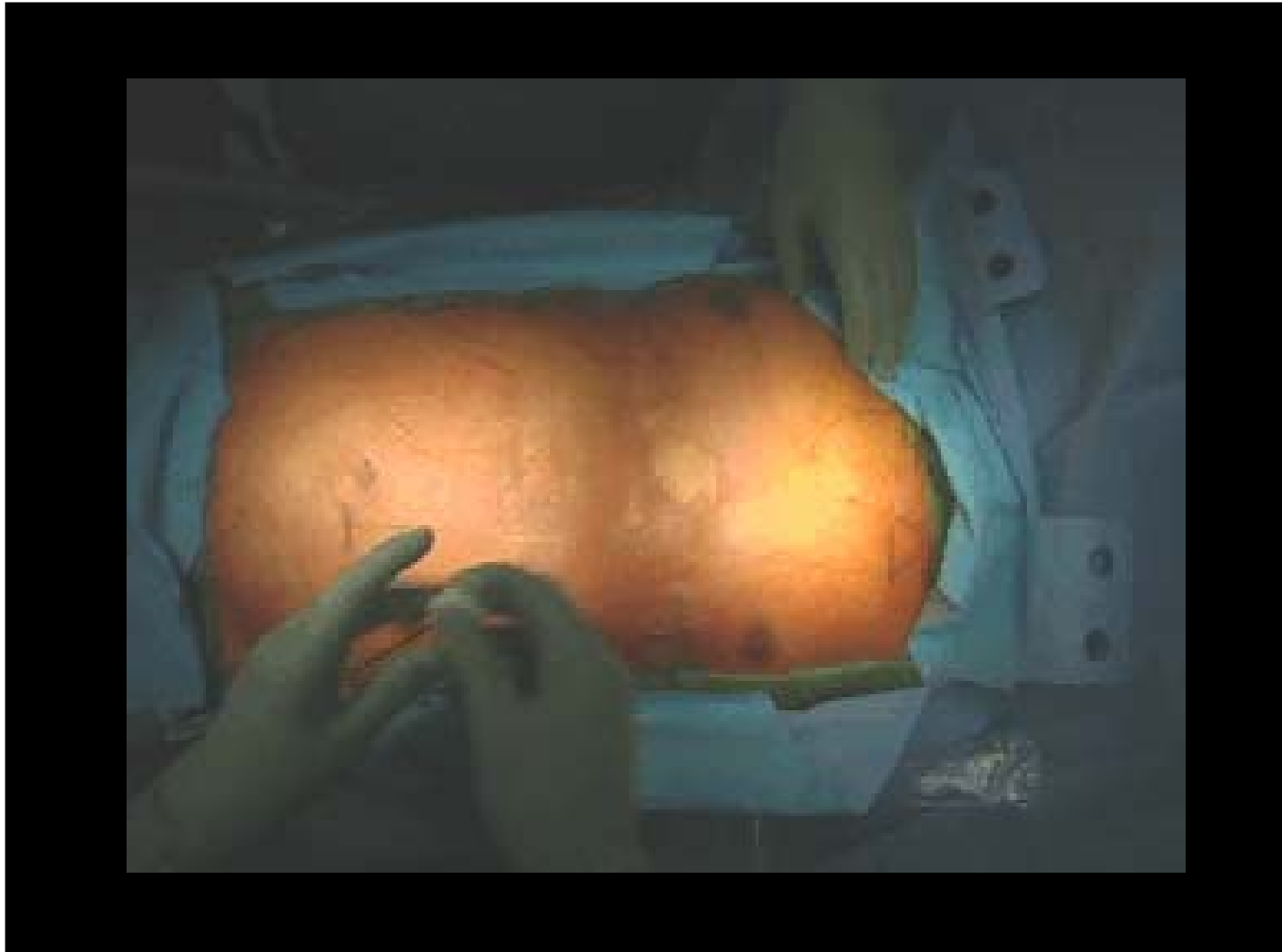
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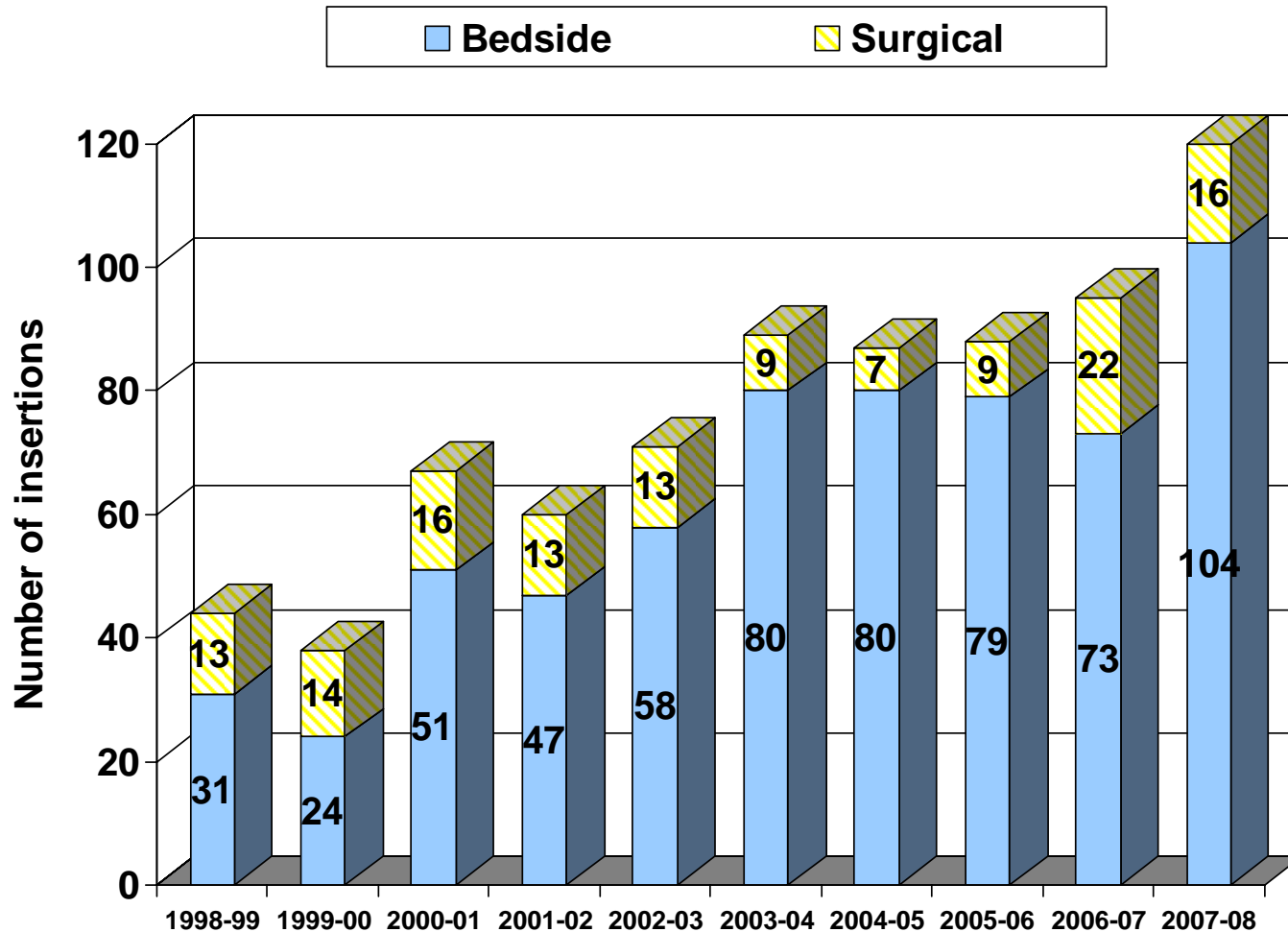
Veress Placement Under Local Anesthesia (Dr Crabtree)



Veress Placement at Palmer's Point (Dr Crabtree)



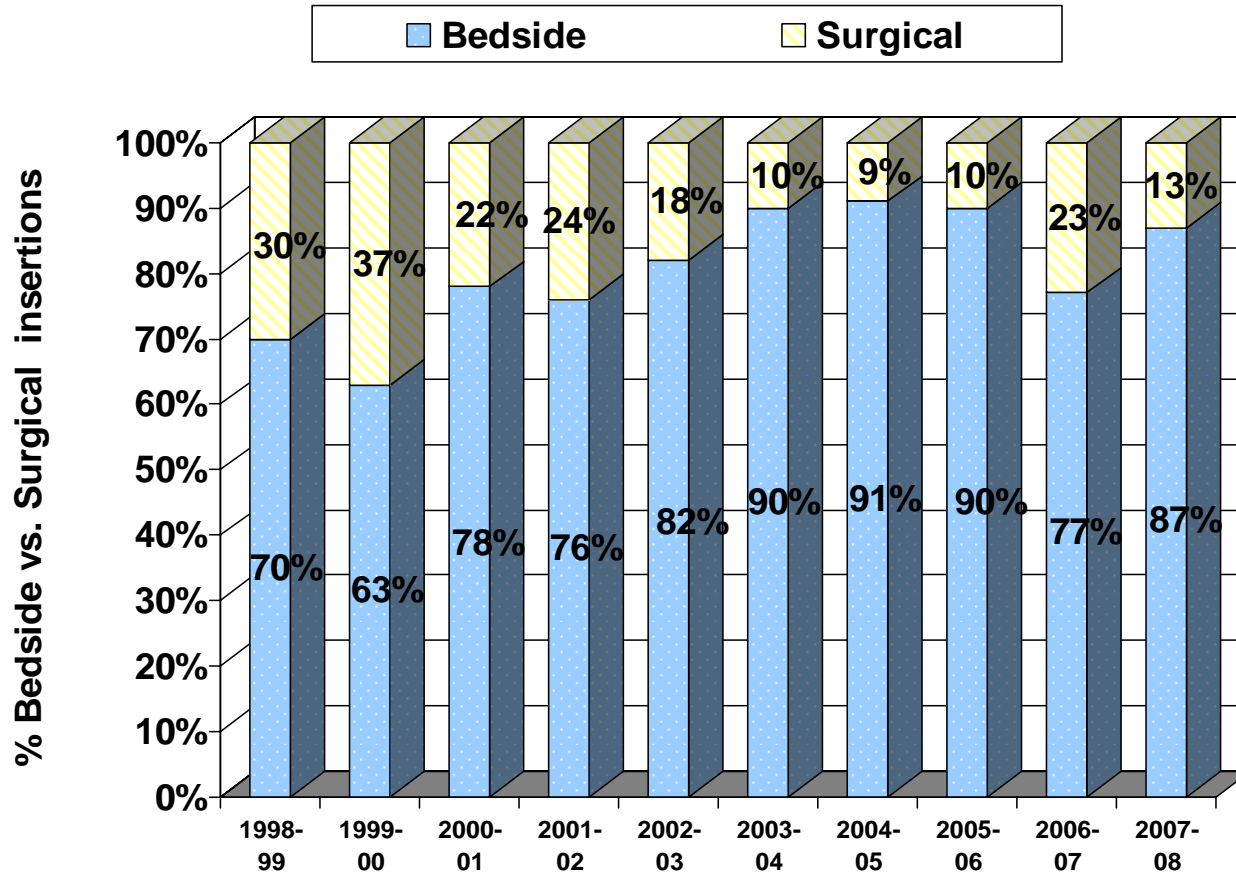
Number of bedside and surgical PD catheter insertions



From April 1, 1998 to Mar 31, 2008:

759 catheters were inserted of which 627 (83%) were done at the bedside by a Nephrologist.

% Bedside vs Surgical insertions



-In 2006 we saw an increase in surgical interest in PD catheter insertions

- However, wait times for surgery continue to be an incentive to maintain expertise in bedside catheter insertions

- In 2007 a 3rd FH Nephrologist began doing bedside catheter insertions

Wait Times



- Current wait time for surgical insertion (3 surgeons available):
2-3 months
- Current wait time for bedside insertion:
 - Planned: 2-4 weeks
 - Urgent: 1-3 days

Starting in January 2008 began tracking PD procedure data in PROMIS:

- referral source (Kidney clinic, Drs office or hospital)
- date referred for orientation about PD
- date orientation completed
- date booked for bedside insertion or referral for surgical consult
- if referred to surgeon, date of surgical insertion



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Review of Complications associated with Bedside Insertion



Year (Apr 1 - Mar 31)	# Bedside Insertions	Complications Summary
2005/06	79	1 bowel perforation 1 matted bowel 2 poor drains/mal-positioned catheter; 2 nd bedside insertion successful 1 bleed (resolved)
2006/07	73	1 bowel perforation 1 not draining; catheter removed/replaced 1 week later 1 insertion related peritonitis (resolved) 1 mal-position; manipulation failed; catheter removed 1 initial malfunction; manipulation successful 1 catheter malfunction; successful reinsertion 2 days later 1 mal-position; reinserted 1 month later
2007/08	104	1 pre-peritoneal catheter (reinsertion); 3 rd insertion in OR: successful 1 poor draining; reinserted 1 month later 1 anatomical problem - bleed; OR insertion 3 months later: successful 1 pre-peritoneal; re-inserted the next day

Reasons for Catheter Reinsertion



Year (Apr 1 - Mar 31)	# Bedside Insertions	Bedside Reinsertions	Reasons for Reinsertion
2005/06	79	7/79	Poor drains (adhesions/malpositioning) (4) Fungal Peritonitis (2) Relapsing SCN peritonitis (1)
2006/07	73	9/73	Peritonitis (2) Relapsing peritonitis (1) Poor drains (2) Cath malfunction (1) Cath malposition (1) Cath cut by patient (1) No reason specified (1)
2007/08	104	8/104	Poor drains (2) Peritonitis (2) Recurrent staph (1) Cath malposition (1) No reason specified (2)

CASE REVIEW



Patient	Date	Insertion Summary	Comments/Complications	Outcome
L. A. Male Age: 52	Apr 18/02 May 16/05 Sep 11/06	1 st insertion 2 nd insertion at bedside. 3 rd insertion at bedside.	Removal/reinsertion.	1 st and 2 nd catheters replaced d/t relapsing SCN peritonitis Patient currently on PD (Cycler)
C. M. Male Age: 28	Apr 25/02 June 1/05 June 1/05 Oct 20/05	Bedside insertion 2 nd insertion at bedside OR insertion. 3 rd insertion in OR.	Traumatic enterotomy at bedside. Completed insertion in OR. Poor drains; pain on filling	Catheter continues to malfunction Failed, pt returned to HD
I. M. Female Age: 78	May 17/05	Bedside insertion	Catheter worked but patient failed.	Patient unable to perform PD; catheter removed after 1 month Pt deceased Nov/07
L. B. Male Age: 54	Mar 7/07 Apr 20/07 May 28/07	1 st insertion at bedside 2 nd insertion at bedside 3 RD insertion in OR	Pre peritoneal	Patient currently on PD (Cycler)

1998-2005 PD Patients: Survival Data



Median Peritonitis Free Survival:

27 months (95%CI 21-31)

Median Technique Survival (Censored at Death):

50 months (95%CI 43-83)

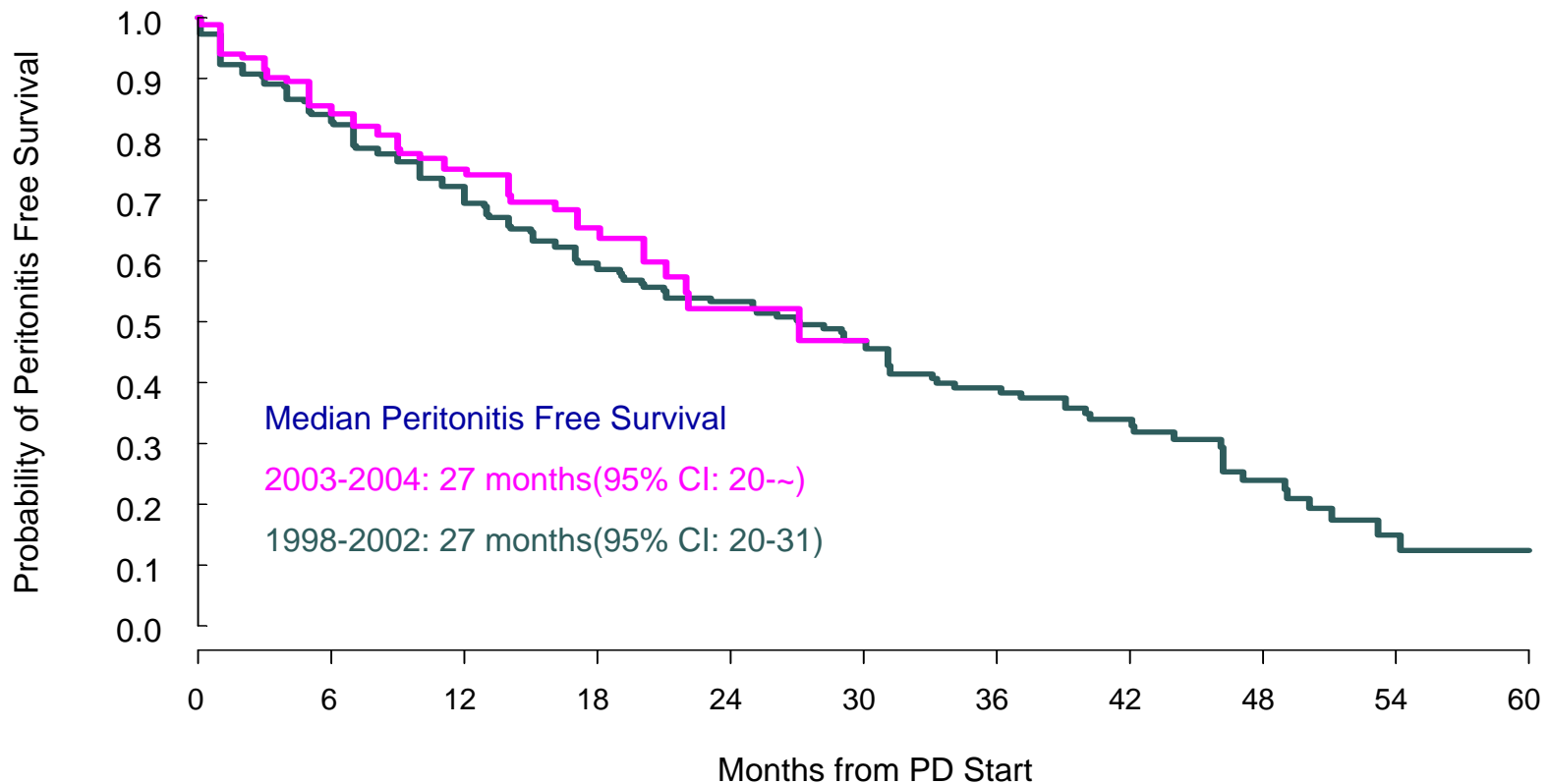
Median Technique Survival (Deaths Included as Event):

34 months (95%CI 30-39)

Median Patient Survival:

50 months (95%CI 40-54)

RCH PD Patients (Initiated 1998-2004): Peritonitis Free Survival by Initiation Year



Home Support RN Trial

Project time frame: Apr 1 - Oct 1, 2008



- Once pts are deemed competent and safe to perform PD at home, there is little opportunity to review and reinforce technique outside clinic visits
- A review of 47 new catheter insertions from Apr 1 - Oct 1/07 revealed 10 episodes of peritonitis and 2 exit site infections within the first 6 mos
(1 at 6 months, remainder at 3 mos or less)

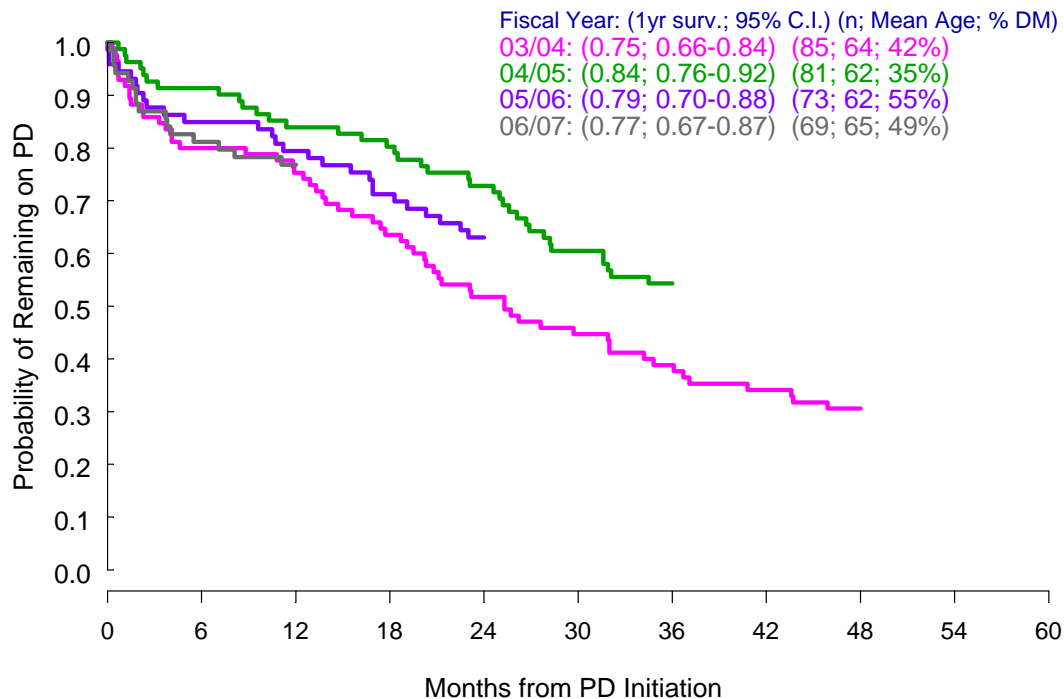
Home Support RN Trial

Project time frame: Apr 1 - Oct 1, 2008



- Adult education principles indicate the need for repetition of new learning at 1 week, 1 month and 6 months
- The project will have a PD RN provide home visits to:
 - all new pts at strategic intervals
 - Pts requiring re-training (post peritonitis or hospitalization)
 - Any pt demonstrating a risk of peritonitis

One-Year Peritoneal Dialysis Attrition Rate



Status	Trend	Target	Actual
●	→	≤ 30%	23%

Test for adjusted HR* for Year of PD Initiation: Chi-sq=5.733, p=0.1253
 *Adjusted for age, gender, diabetes, PD as initial or transferred modality

Source: Provincial Registry of Chronic Kidney Patients (PROMIS).
 FHA Management Indicator Report
 (BC Renal Agency July 15, 2008)

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QUESTIONS?











