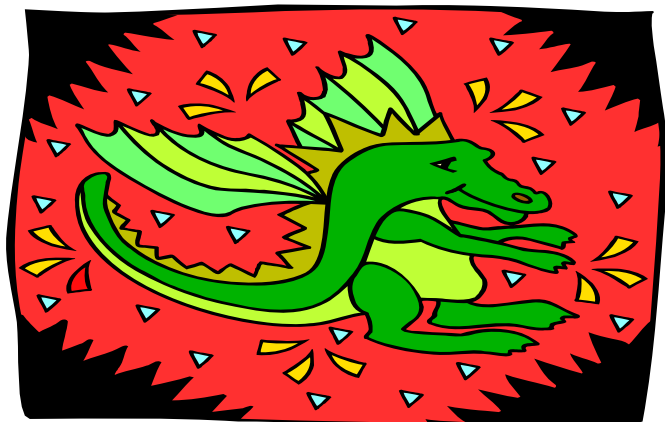


# Myths and Realities of PD

Linda Turnbull  
Julie Nhan

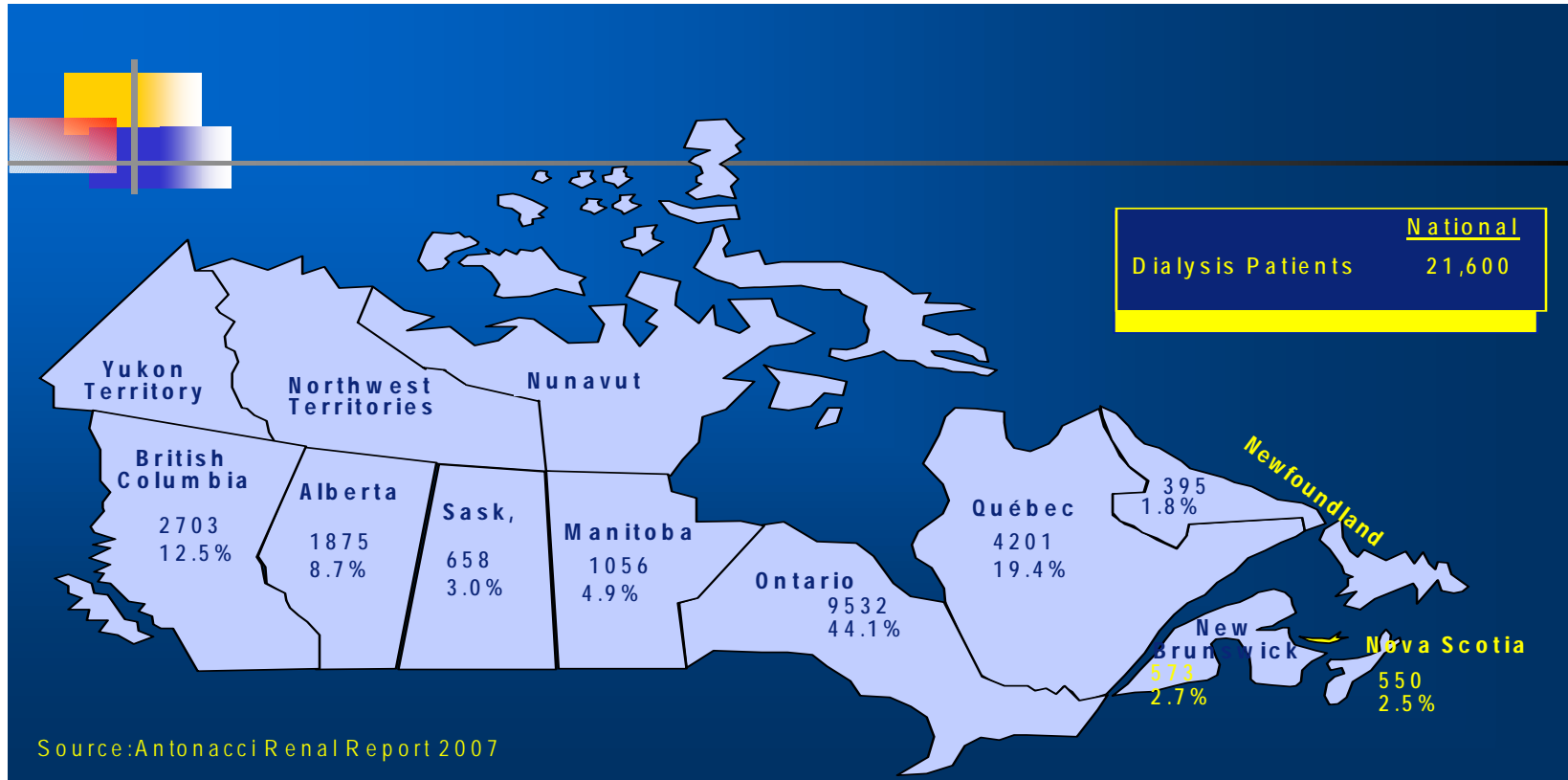
# Agenda

Trends in dialysis

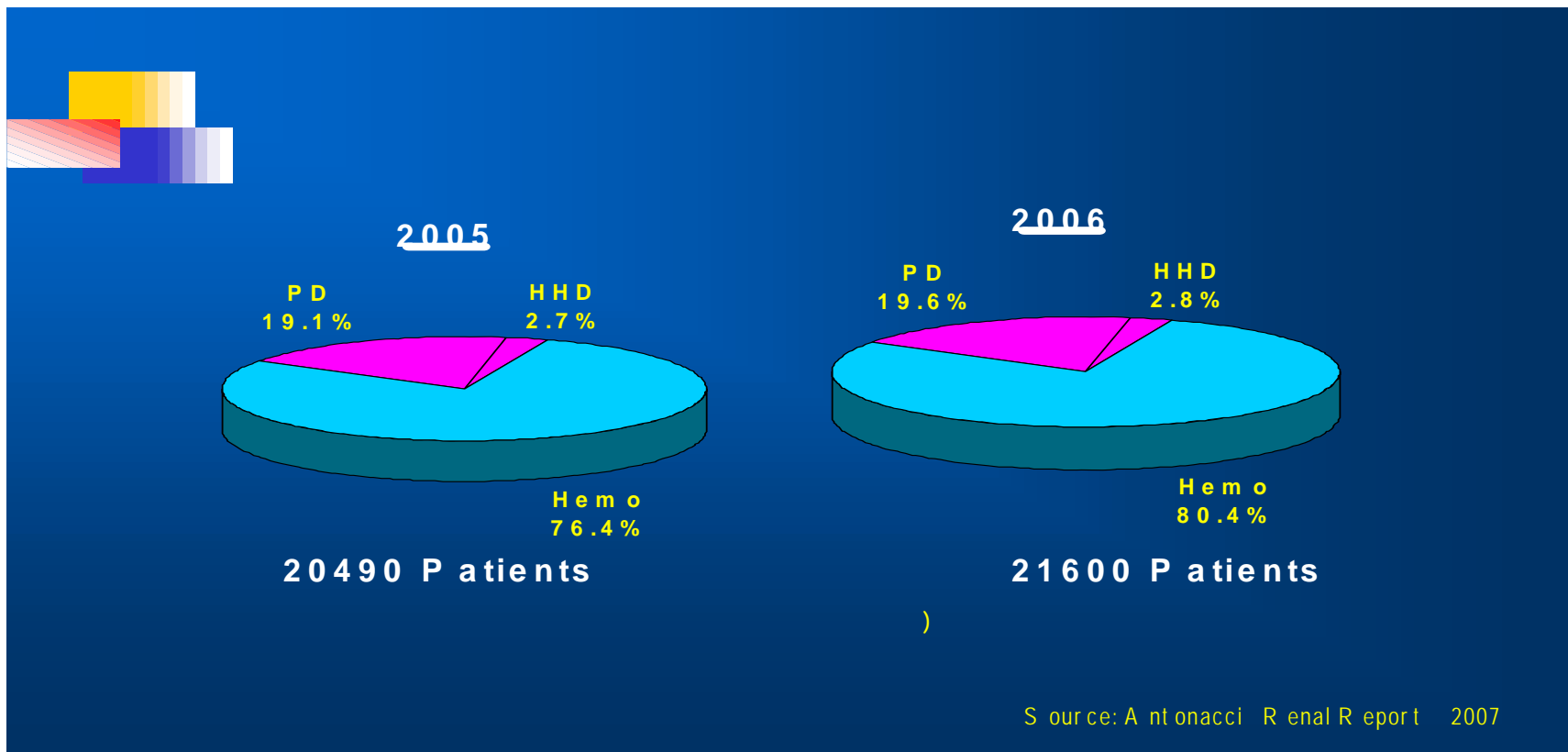


Common myths and beliefs

# Canadian Dialysis Market - 2006

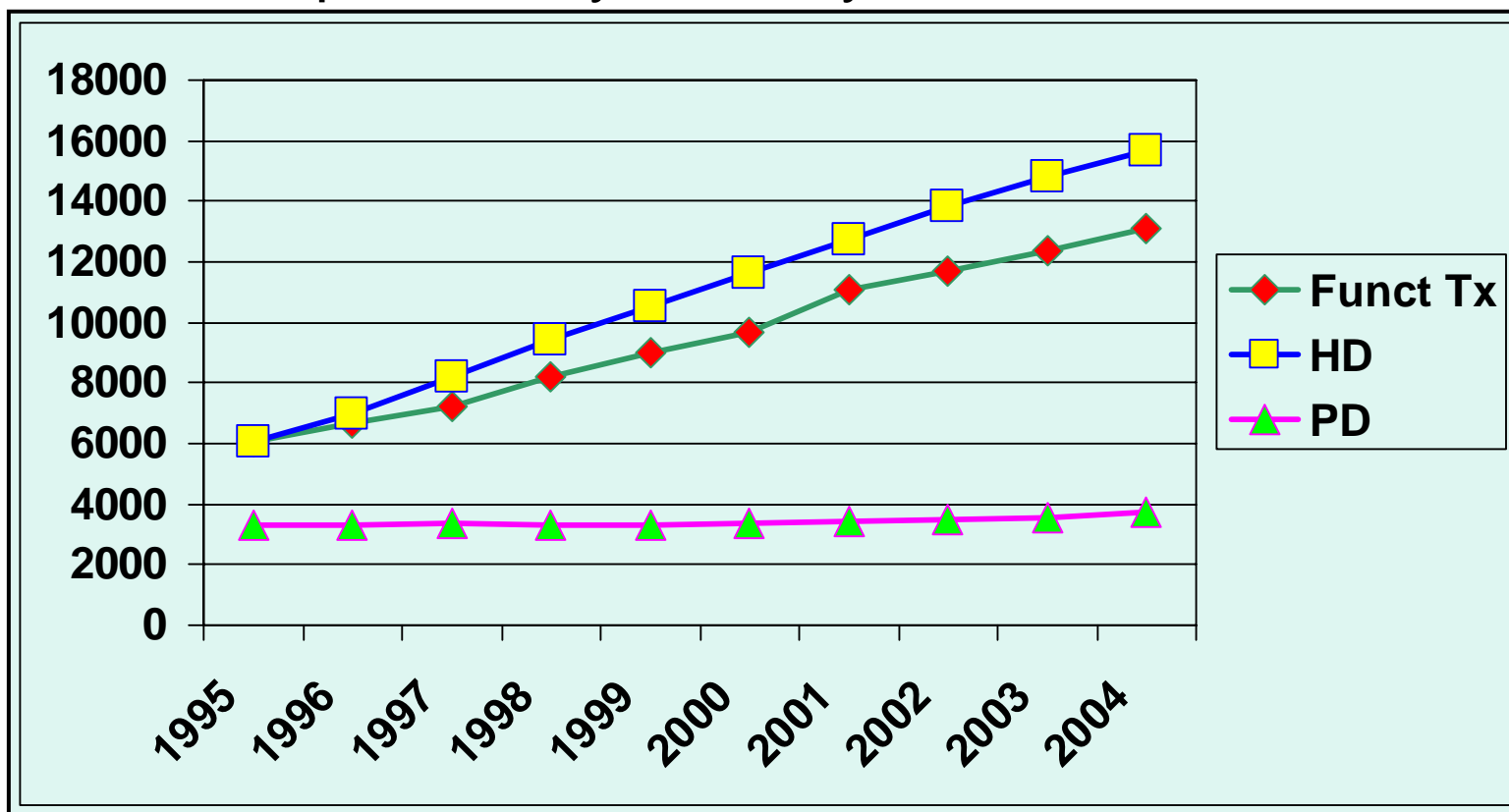


# Dialysis Patients by Modality (National Overview)

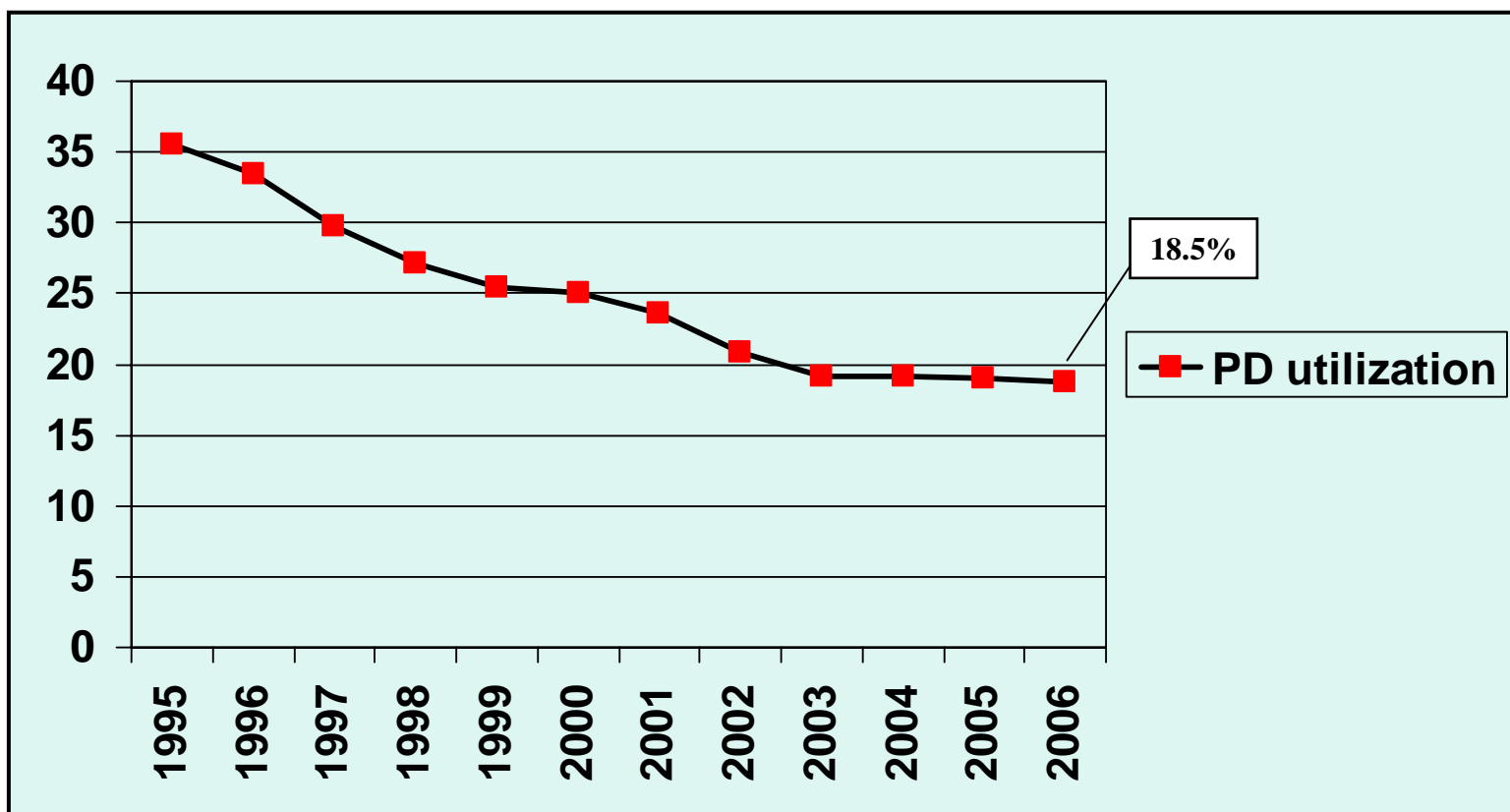


# HD growth surpasses both Tx and PD

Prevalent patients by modality, Canada, 1995 - 2004



# % PD utilization in Canada



# Why are there not more pts on PD?

- ? Clinicians' beliefs
- ? Level of comfort with PD therapy
- ? Insufficient information/education on modalities
- ? PD modality not available as an option
- ? Differences in physician reimbursement



# Fact or myth?



## Case of Hilda...

70-year old with ESRD 2<sup>0</sup> to HTN. PmHx includes dyslipidemia and OA. She is married and lives with her husband in their own home. They have a large extended family, who is very supportive. Hilda and her husband receives some assistance on household activities; otherwise, they are relatively independent.

**Why do something yourself, when  
you can get it done for you - -  
for free???**



# 1

Fact

Myth

**HD provides better outcomes than PD.**



# Study Confusion?



- A number of publications from around the world have compared outcomes between ESRD patients receiving in-center HD vs those receiving home-based PD.
- At times, results of these studies appear to be at odds with one another, sending mixed and confusing messages to the nephrology community.
- Reasons for these variable results include
  - selection bias (prevalent vs. incident patients)
  - flawed study design (as-treated vs. intent-to-treat)
  - differences in mortality effects with time from initiation of dialysis
  - differences in co-morbid diseases
  - and other factors

## Vonesh, Synder, Foley & Collins (2006)

- Six large-scale registry studies and three prospective cohort studies conducted in the United States, Canada, Denmark, and the Netherlands were reviewed.
- Overall, patient survival is similar for PD & HD in the first 1-2 years but that there are NB differences within select sub-groups (age & diabetes).

# Conclusions

## Non-diabetics

- PD is associated with equal or better survival
  - USA
  - Denmark
  - Canada

## Diabetics

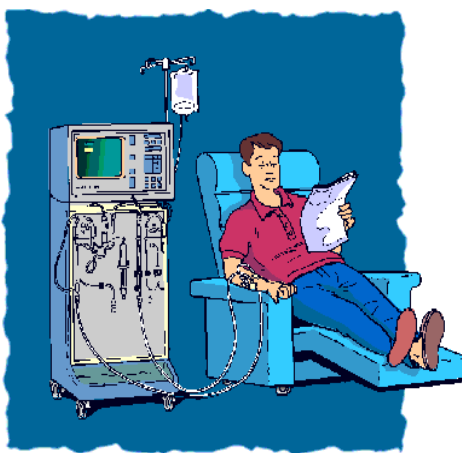
- HD is associated with equal or better survival
  - USA - older DM patients
- PD is associated with equal or better survival
  - USA - younger DM patients
  - Canada
  - Denmark

# Canadian Data 1991 - 2000

- 32 370 incident pts initiated dialysis from 1991 - 2000 (23 434 HD and 8946 PD)
- Relative risks of mortality were found to be significantly higher among HD patients over the five years of observation
- In stratifying for age and diabetes, mortality in HD patients still exceeded that in PD for
  - 18 - 64 year olds with DM (RR 1.32 p <0.00001)
  - Mortality in pts >65 years with DM was 13% higher for pts on HD vs PD (RR 1.13 p <0.00001)

# 1  Fact  
 Myth

HD provides better outcomes than PD.



=



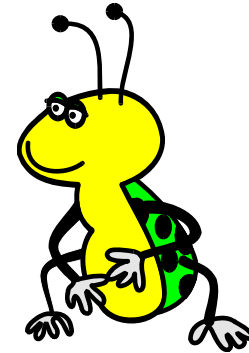
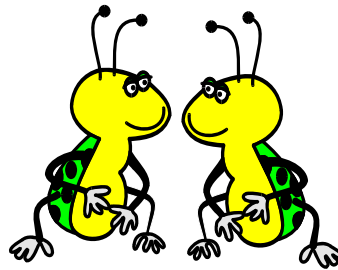
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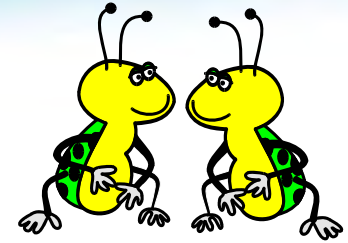
Fact

Myth

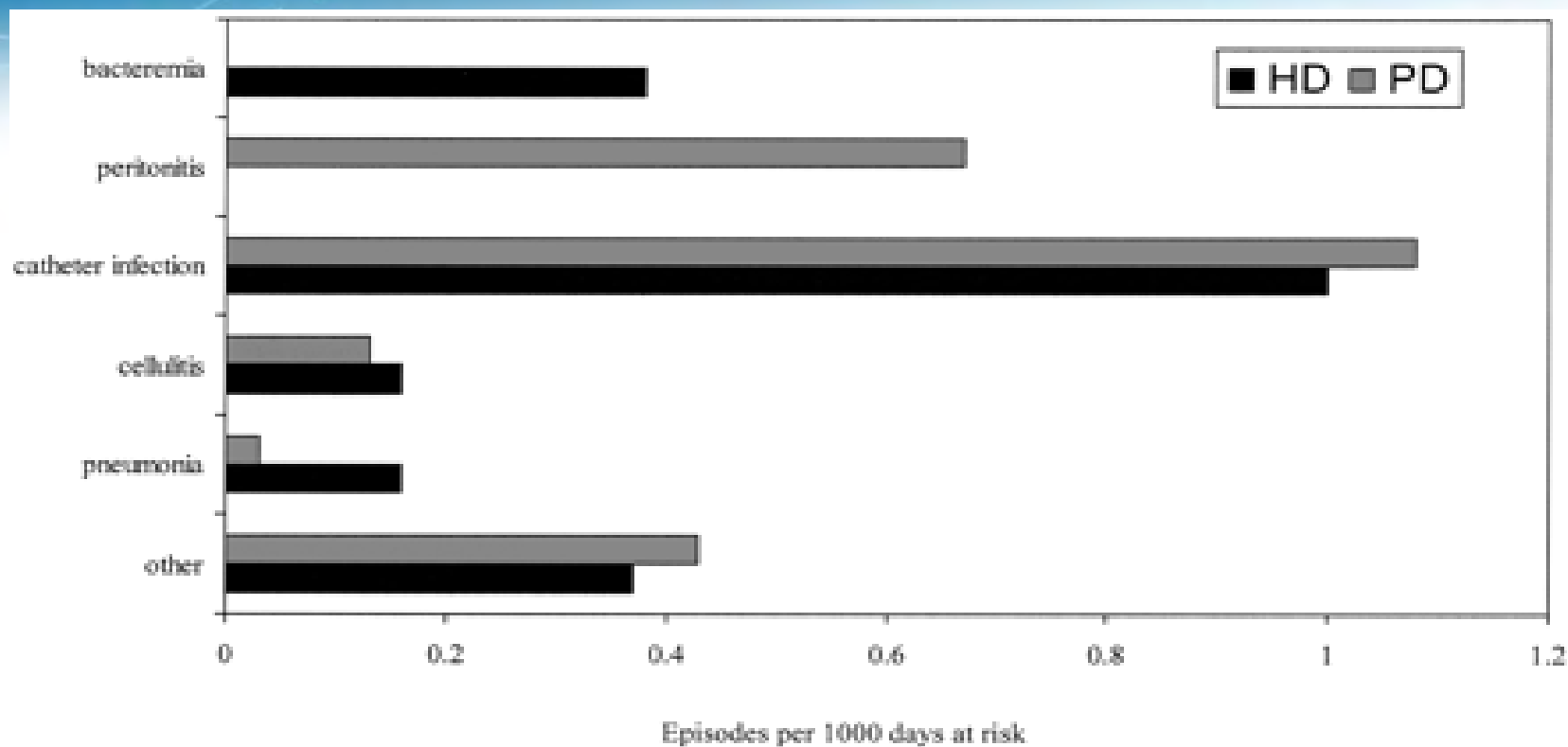


PD has higher infection rates than HD.





- Infection is the 2<sup>nd</sup> leading cause of death in dialysis patients.
  - Septicemia accounts for 79.7% of infectious deaths.
  - Rates of hospital admissions for septicemia are higher in HD patients than PD patients.
- In a 6-year cohort study (HD: 119, PD: 62): rates are the same, but the types of infection differ and risk over time varied.
  - HD patients had an especially high risk for bacteremia in the first 90 d.
  - Risk for peritonitis for the PD cohort was not different over time.



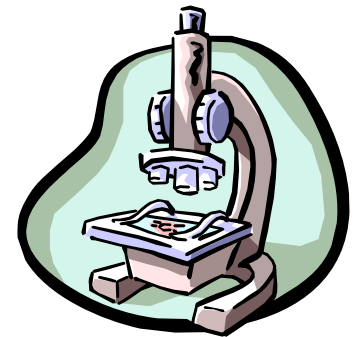
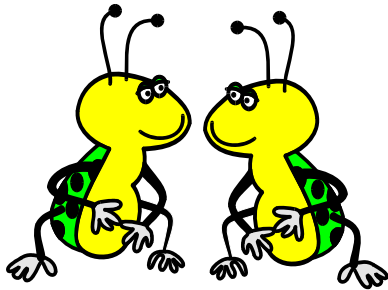
- Dialysis modality is not an independent predictor of overall infection rate.
- But is a strong predictor of the type of infection and the difference in risk during the first 90 d of dialysis.

# Aslam, Bernardini, Fried, Burr & Peraino

- Compared infection between HD and PD from the start of dialysis.
- Observational cohort study of all incident dialysis patients ( $n = 181$ ; HD: 119, PD: 62) at a single center from 1999 to 2005.
- Overall infection rates were similar (HD 0.77 vs PD 0.86/yr;  $p = 0.24$ ).
- Modality was not an independent predictor of overall infections.
- PD and HD patients had similar infection rates overall, but type of infection and risk over time varied.

# 2  Fact  
 Myth

PD has higher infection rates than HD.

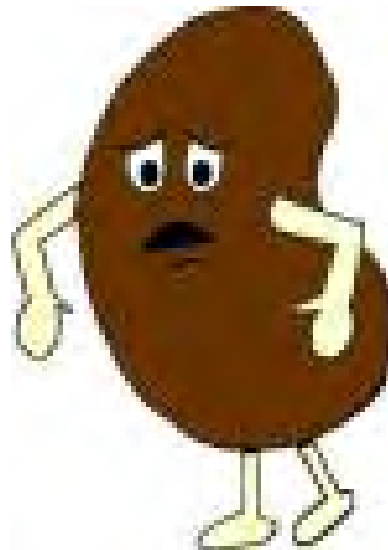


# # 3

Fact

Myth

**Anuric patients cannot be well dialyzed on PD.**



# Dialyzing anuric patients: EAPOS

- 2-yr, prospective, multi-center study of clinical outcomes of anuric patients (<100 ml/day) receiving APD (n = 177).
- Target both small solute clearance ( $C_{\text{crea}}$  >60 L/wk) and UF (>750 ml/d).

# EAPOS conclusion...

- PD survival similar b/w anuric PD patients and other PD patients.
  - >70-80% of patients can be maintained on APD.
- Adequate small solute clearance can be achieved in anuric PD patients by increasing volume & addition of daytime exchange.
- Achieving adequate UF is also possible in this patient population by using Icodextrin for long day dwell

# 3  Fact  
 Myth

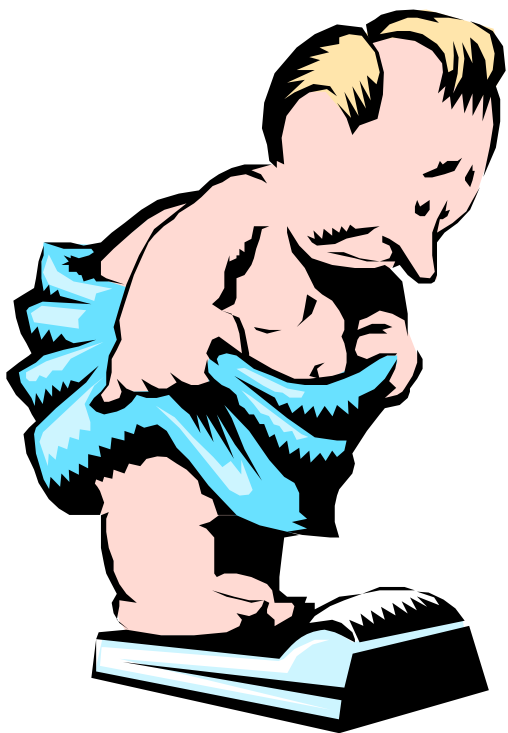
**Anuric patients cannot be well dialyzed on PD.**



# # 4

Fact

Myth



**Large patients are  
not suitable for PD.**

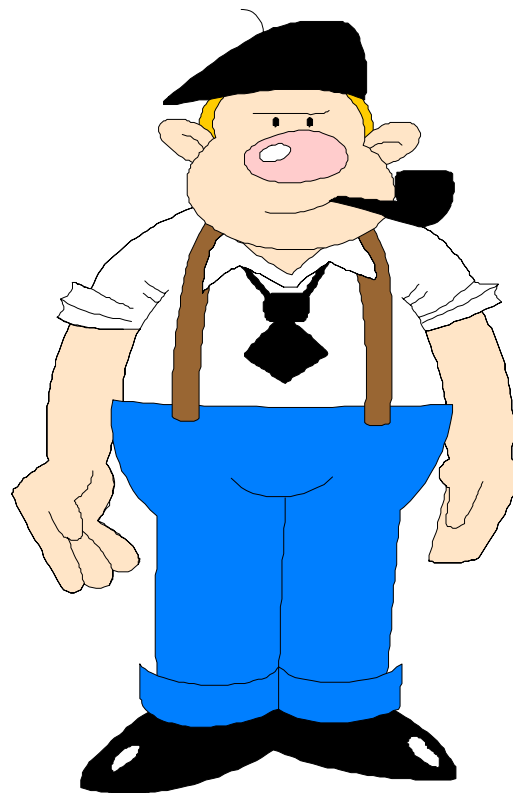
# Aslam, Bernardini, Fried & Piraino (2002)

- HD: >normal BMI = better outcomes (Kopple, Zhu, Lew, & Lowrie, 1999; Wolfe, Ashby, Daugirdas, Agodoa, Jones, & Port, 2000).
- Prospective study of 208 incident PD patients (1991-1999).
  - N = 104 (BMI >27)
  - N = 104 (BMI 20-27)
  - Matched for age, gender, presence of diabetes, and co-morbidity.
  - Both groups were of similar age, sex, race, presence of diabetes, co-morbidity, initial albumin, and D/P<sub>CR</sub>.
- Conclusion: BMI >normal is not associated with any increased or decreased risk of death in patients on PD for 2 years & no difference in technique survival between the 2 groups.

- Larger patients need a PD Rx that is adjusted to their BSA.
- Non-glucose solutions limit glucose load in larger patients.

# 4  Fact  
 Myth

Larger patients are  
not suitable for PD.



# # 5

Fact

Myth

PD takes too much time to perform.


















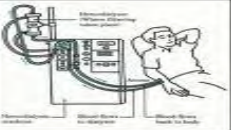





# Let's compare:

Lifestyle Considerations	Manual PD	Automated PD	In-Center Hemodialysis	Home Hemodialysis
Employment				
Travel				
Diet				
Support				
Storage				
Transportation				
Clinic Visits				
Time Considerations	Manual PD	Automated PD	In-Center Hemodialysis	Home Hemodialysis
Time/week for Tx				
Pre & post Tx preparation				
Transportation				
Estimate Total Time				

# Let's compare:

Lifestyle Considerations	Manual PD	Automated PD	In-Center Hemodialysis	Home Hemodialysis																																																																																																									
Employment																																																																																																													
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Diet			More restrictive																																																																																																										
Support																																																																																																													
Storage			No issue																																																																																																										
Transportation	<table border="1"> <tr><td>Sun</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thu</td><td>Fri</td><td>Sat</td></tr> <tr><td></td><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> </table>	Sun	Mon	Tue	Wed	Thu	Fri	Sat					1	2	3	4	5	6	7	8	9	10	<table border="1"> <tr><td>Sun</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thu</td><td>Fri</td><td>Sat</td></tr> <tr><td></td><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> </table>	Sun	Mon	Tue	Wed	Thu	Fri	Sat					1	2	3	4	5	6	7	8	9	10		<table border="1"> <tr><td>Sun</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thu</td><td>Fri</td><td>Sat</td></tr> <tr><td></td><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> </table>	Sun	Mon	Tue	Wed	Thu	Fri	Sat					1	2	3	4	5	6	7	8	9	10																																										
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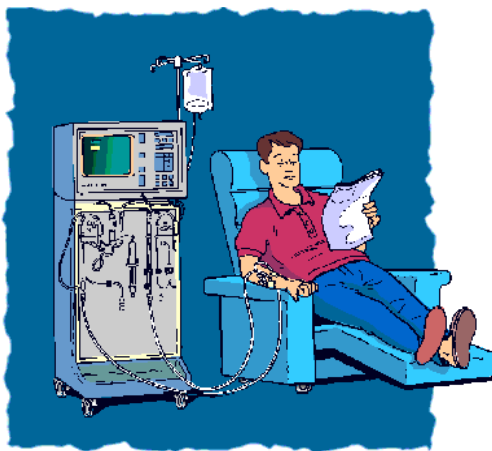
# Let's compare:



Lifestyle Considerations	Manual PD	Automated PD	In-Center Hemodialysis	Home Hemodialysis
Employment	_____	_____	_____	_____
Travel	★	★	👎	👎
Diet	★	★	👎	★
Support	★	★	★	★
Storage	👎	👎	★	👎
Transportation	★	★	👎	★
Clinic Visits	★	★	👎	★
Time Considerations	Manual PD	Automated PD	In-Center Hemodialysis	Home Hemodialysis
Time/week for Tx	14 hours	7 hours	12 hours	7-14 hours
Pre & post Tx preparation	28 x30 min	7 x60 min	3 x4 hours (Tx) 1-2 hours waiting	7 x60-120 min
Transportation	0	0	1-2 hours	0
Estimate Total Time	14 hours	7 hours	13-14 hours	7-14 hours

# # 5 Fact Myth

## PD takes too much time to perform.



# # 6

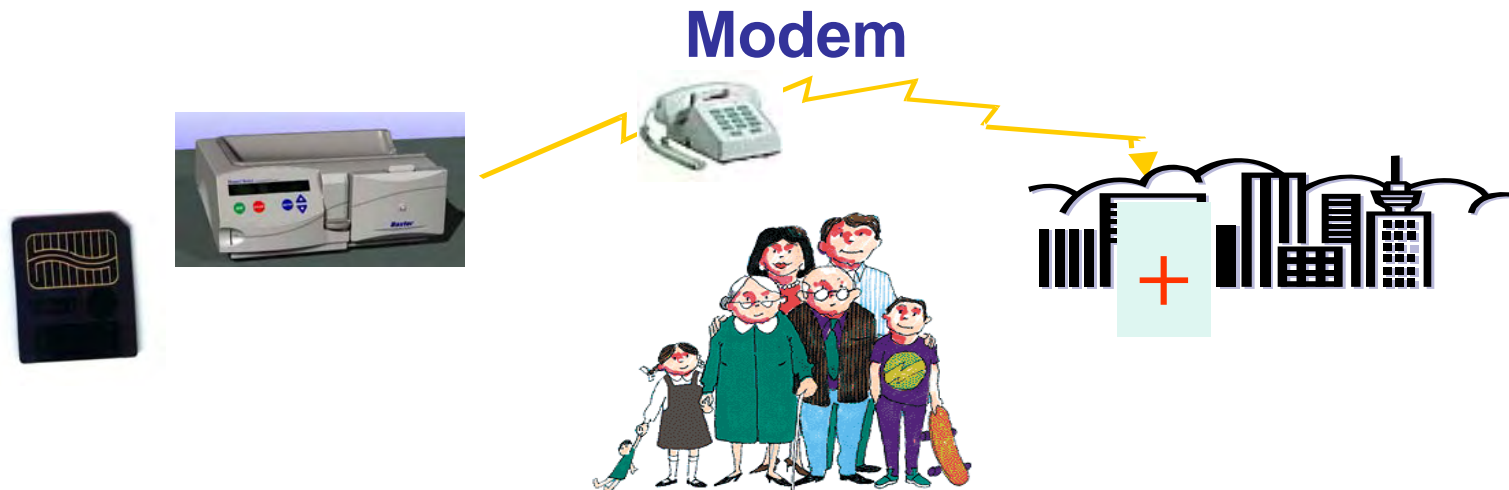
- Fact
- Myth

**Patients on PD need to be totally independent.**



# PD does not require patients to be totally independent!

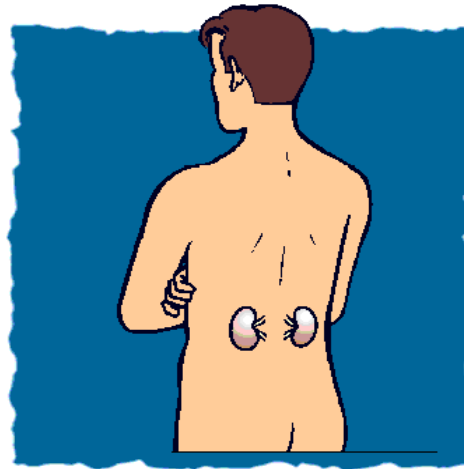
- PD may be a choice for patients who are not totally independent but have excellent support systems.



- Community support and LTC facilities.

# 6  Fact  
 Myth

Patients on PD need  
to be totally independent and  
compliant.



# What should I do?

- Outcome on PD
- Infection rate
- Anuria
- BMI
- Time
- Independence



I do sympathize with you, sir, but I'm afraid  
it cannot be viewed as 'carry on' luggage.

# Questions/Comments