Objectives

• To review the International Society of Peritoneal Dialysis (ISPD) Syllabus of teaching and learning for a home dialysis program

• How to assist patients to become experts in their own home dialysis care
What Matters Most in Home Dialysis Training
Modality Choice is the Beginning of the Education Plan
Potential Benefits of Home Therapy

Greater independence
Flexible schedule
More energy
Less time at hospital
More liberal diet
Greater availability to travel
Possible Obstacles of Home Therapy

- Chronic illness
- Anxiety / cognitive barriers
- Sensory deficits
- Low literacy
- Glasses required/hearing aide
- Complexity of learning
- Personal characteristics of learner
- Age of learner
- Language barriers
- Learning Style
ISPD Guidelines: Principles of Training

Who is the learner?
Who should be a PD trainer?
What should be taught?
Where should the training occur?
What should be the duration of training?
How should the patient be taught?

Who is the Learner?

• Patient
• Patient with Partner/Family
• Family
• Caregiver
• Paid Helper
• Nursing Home Staff
Do you know this learner?

- Silent
- Aggressive
- Negativist
- Frightened
- Indecisive
- Complainer

- Agreeable
- Know-it All
Renal Adult Characteristics

- Depressed mentation
- Require repetition
- Short attention span 10-15 minutes
- Altered perception
- Decreased level of concentration
Evaluation before training

- Emotional state
- Muscle strength
  - Connections
  - Clamps
  - Lifting bags
  - Opening boxes
- Literacy

- Visual
  - Acuity/depth perception
    - Reading instructions
    - Connections
  - Glasses required/Hearing aide
- Language issues
- Allergies: Providine, soaps, exit site prophylaxis

Literacy means the person is able to learn new skills, think critically, and problem solve; or the ability to read and interpret numbers

ISPD Guidelines: Principles of Training

Who is the learner?
Who should be a Peritoneal Dialysis (PD) trainer?
What should be taught?
Where should the training occur?
What should be the duration of training?
How should the patient be taught?

Who should be PD Trainer?

Experienced PD nurse – had a mentor for at least 6 weeks

Ratio of patient to nurse is 1:1- ideally

Good communication skills, be innovative and consistent, and firmly believe in patient self-care.

## Baseline Characteristics of the Study Patients

<table>
<thead>
<tr>
<th>Variable</th>
<th>All patients</th>
<th>Patients by experience of the primary nurse</th>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Least (&lt;10)</td>
<td>Moderate (10 to &lt;15)</td>
<td>Advanced (≥15)</td>
<td></td>
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<tr>
<td>Demographics</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Patients (n)</td>
<td>305</td>
<td>114</td>
<td>100</td>
<td>91</td>
<td></td>
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<tr>
<td>Age (years)</td>
<td>59.42±14.17</td>
<td>59.47±14.28</td>
<td>59.76±14.00</td>
<td>58.99±14.38</td>
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</tr>
<tr>
<td>Sex [men (%)]</td>
<td>42.3</td>
<td>38.6</td>
<td>46.0</td>
<td>42.9</td>
<td></td>
</tr>
<tr>
<td>Literacy [≥ high school (%)]</td>
<td>27.2</td>
<td>27.2</td>
<td>26.0</td>
<td>28.6</td>
<td></td>
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<tr>
<td>Annual income [≥ 20000 yuan (%)]</td>
<td>32.1</td>
<td>28.1</td>
<td>31.0</td>
<td>38.5</td>
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<tr>
<td>Assisted PD (%)†</td>
<td>37.7</td>
<td>45.1</td>
<td>40.6</td>
<td>26.4</td>
<td></td>
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<tr>
<td>Clinical variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Body mass index (kg/m²)</td>
<td>23.4±3.7</td>
<td>23.0±4.21</td>
<td>23.5±3.45</td>
<td>23.6±3.54</td>
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<tr>
<td>Diabetes mellitus (%)</td>
<td>40.3</td>
<td>43.9</td>
<td>42.0</td>
<td>34.1</td>
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<tr>
<td>Charlson comorbidity index</td>
<td>5.8±3.87</td>
<td>6.3±4.00</td>
<td>5.6±3.46</td>
<td>5.4±4.08</td>
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<tr>
<td>Laboratory variables at baseline</td>
<td></td>
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<tr>
<td>Serum albumin (g/L)</td>
<td>35.6±4.15</td>
<td>35.1±4.32</td>
<td>35.8±4.30</td>
<td>35.9±4.38</td>
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<tr>
<td>Serum hemoglobin (g/L)</td>
<td>102.57±16.44</td>
<td>103.17±15.77</td>
<td>103.44±16.97</td>
<td>100.81±16.73</td>
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<tr>
<td>Residual renal function (mL/min)</td>
<td>4.00±4.49</td>
<td>3.71±4.10</td>
<td>4.39±3.48</td>
<td>3.93±5.81</td>
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<tr>
<td>Follow-up and outcome</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Total follow-up (months)</td>
<td>45</td>
<td>48</td>
<td>45</td>
<td>41</td>
<td></td>
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<tr>
<td>Mean (range)</td>
<td>(26–59)</td>
<td>(28–61)</td>
<td>(27–59)</td>
<td>(24–58)</td>
<td></td>
</tr>
<tr>
<td>Peritonitis (patient-months/episode)</td>
<td>55.66</td>
<td>45.8</td>
<td>52.81</td>
<td>70.29</td>
<td></td>
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<tr>
<td>Death (%)</td>
<td>41.6</td>
<td>42.9</td>
<td>40</td>
<td>41.8</td>
<td></td>
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<tr>
<td>Transfer to hemodialysis (%)</td>
<td>9.18</td>
<td>8.77</td>
<td>13</td>
<td>5.49</td>
<td></td>
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<tr>
<td>Transplantation (%)</td>
<td>9.83</td>
<td>6.14</td>
<td>10</td>
<td>14.3</td>
<td></td>
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<tr>
<td>Others (%)</td>
<td>2.62</td>
<td>2.63</td>
<td>2</td>
<td>3.29</td>
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</tr>
</tbody>
</table>

*Yang Z et al, PDI 2011*
Can we apply this theory to home Hemodialysis training?

Experienced nurse – had a mentor for at least 6 weeks

Ratio of patient to nurse is 1:1 - ideally

Good communication skills, be innovative and consistent, and firmly believe in patient self-care.

Are All Nurses Teachers?

The complexity of the task of teaching is often overlooked.

Many assume the skills will develop automatically.

Even with the best intentions, the results may be haphazard, inefficient and ineffective.
Teaching Home Dialysis Requires a Team

- Nurse
- Pharmacist
- Dietitian
- Social Worker
- Nephrologist
- Physio
Nursing / Team Roles

- Education/Knowledge
- Setting Goals
- Developing teaching plans/Practice policies
- Evaluate through CQI (Continuous Quality Improvement)
Team Work
Before Teaching Home Dialysis

Learn the principles of adult education

Develop training skills

Find a mentor

Never be complacent about acquiring new skills and new methods of teaching

After you have become experienced, be a mentor for other nurses
We are the Important Link
ISPD Guidelines: Principles of Training

Who is the learner?
Who should be a PD trainer?
What should be taught?
Where should the training occur?
What should be the duration of training?
How should the patient be taught?

What should be taught?

- Overview of PD
- Aseptic technique and hand hygiene
- Steps in exchange procedures
- Emergency measures for contamination
- Exit-site care

- Complications / Troubleshooting
- Clinic visits/home visits
- Holiday protocols/employment/hobbies/sports

Develop a Teaching Plan

• A Course Outline;
• Written daily teaching guide
  Teaching Aids
  Handouts
  Blackboard, felt board or paperboard
  Video or audio tapes, internet access
  Equipment for demonstration

## Dialysis Teaching Center

### PERITONEAL DIALYSIS TEACHING GUIDE

<table>
<thead>
<tr>
<th>Topic</th>
<th>Patient</th>
<th>Helper</th>
<th>Comments</th>
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<tbody>
<tr>
<td>A. Normal and abnormal kidney function as outlined in CAPD Teaching Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Vital signs and their Importance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Patient and/or helper able to do vital signs</td>
<td></td>
<td></td>
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<tr>
<td>D. Basics on how peritoneal dialysis works and what CAPD and CCPD means</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>E. Aseptic technique taught and demonstrated by patient and/or helper</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>F. Twin bag exchange procedure done by patient and/or helper</td>
<td></td>
<td></td>
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<tr>
<td>G. Exit site care done by patient and/or helper and problem management of exit site discussed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Patient and/or helper understand ideal weight</td>
<td></td>
<td></td>
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<tr>
<td>Fluid weight control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How to choose diet meal for fluid control - 0.5%, 1.5%, 2%, 2.5%, 4%</td>
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<tr>
<td>Relationship between weight, BP, salt and fluid intake</td>
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<td></td>
<td></td>
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<tr>
<td>How to recognize edema and fluid overload</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How to recognize symptoms of dehydration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Patient and/or helper know why nutrient extraneal and plethysmal when applicable is used</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. Ongoing diet review to reinforce instruction from diettitian</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. Ongoing medication review to reinforce instruction from pharmacist</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>L. Patient and/or helper able to add medication to drain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M. Patient and/or helper know how to keep log sheets</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ISPD Guidelines: Principles of Training

Who is the learner?
Who should be a PD trainer?
What should be taught?
Where should the training occur?
What should be the duration of training?
How should the patient be taught?

Where - Home dialysis training

• clinic
• hospital
• home
• alternate site (nursing homes, special care homes, visiting nurses and care personnel)

# Training from ISPD Survey

<table>
<thead>
<tr>
<th></th>
<th>USA</th>
<th>Canada</th>
<th>South America</th>
<th>Hong Kong</th>
<th>The Netherlands</th>
<th>Total</th>
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<tbody>
<tr>
<td>When training occurs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Before catheter insertion</td>
<td>1%</td>
<td>2%</td>
<td>38%</td>
<td>33%</td>
<td>0%</td>
<td>9%</td>
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<tr>
<td>After catheter insertion</td>
<td>85%</td>
<td>89%</td>
<td>36%</td>
<td>33%</td>
<td>80%</td>
<td>74%</td>
</tr>
<tr>
<td>Before and after catheter insertion</td>
<td>14%</td>
<td>9%</td>
<td>26%</td>
<td>33%</td>
<td>20%</td>
<td>17%</td>
</tr>
<tr>
<td>Where training occurs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic only</td>
<td>83%</td>
<td>26%</td>
<td>85%</td>
<td>16%</td>
<td>13%</td>
<td>54%</td>
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<tr>
<td>Hospital only</td>
<td>2%</td>
<td>37%</td>
<td>5%</td>
<td>79%</td>
<td>13%</td>
<td>30%</td>
</tr>
<tr>
<td>Home only</td>
<td>2%</td>
<td>0</td>
<td>2%</td>
<td>2%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Clinic and/or hospital, home</td>
<td>13%</td>
<td>37%</td>
<td>8%</td>
<td>3%</td>
<td>73%</td>
<td>15%</td>
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<tr>
<td>Training time per patient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours per day (range)</td>
<td>4.5 (1.5–8)</td>
<td>5 (2–12)</td>
<td>2 (1–10)</td>
<td>8 (2.5–12)</td>
<td>5 (1–8)</td>
<td>5 (1–12)</td>
</tr>
<tr>
<td>Days of training (range)</td>
<td>6 (3.5–15)</td>
<td>5 (2–12)</td>
<td>10 (5–90)</td>
<td>6 (4–8.4)</td>
<td>5 (3–10)</td>
<td>6 (2–90)</td>
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<tr>
<td>Total hours of training (range)</td>
<td>27 (8–84)</td>
<td>25 (6–70)</td>
<td>20 (7–90)</td>
<td>44 (10–96)</td>
<td>25 (8–60)</td>
<td>30 (6–96)</td>
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<tr>
<td>Peritonitis per year</td>
<td>0.44</td>
<td>0.39</td>
<td>0.50</td>
<td>0.43</td>
<td>0.34</td>
<td>0.42</td>
</tr>
</tbody>
</table>

Training Room: no other activities in the room

A room with a door for privacy and quiet

Chair for patient rest

Able to wash up spills

Work surface and sink for hand washing

IV pole

Scale

Clock
ISPD Guidelines: Principles of Training

Who is the learner?
Who should be a PD trainer?
What should be taught?
Where should the training occur?
What should be the duration of training?
How should the patient be taught?

Teaching in PD

There is no data to support the ideal length and characteristics of training that would ensure best PD outcome.

ISPD Recommendation -5 days- 3 hours (adjusted to the learner)

Additional time for Dietitain, Pharmacist, Social Worker, Nephrologist
Nursing Liaison Committee of ISPD

- Survey- 14 centers from 10 countries
- Australia, Brazil, Canada, China, Guatemala, Japan, Mexico, New Zealand, United Kingdom, and the United States.

Consensus on Training
- 5 days
- 3 hours day
- Adult learning
- One to one Nurse

Training time for PD and Home Hemodialysis (HH)?

- There are no randomized trials to compare the length of training with outcomes.

- Training should continue until the patient can:
  - safely perform all required procedures
  - recognize a contamination and an infection with appropriate responses


Jie Dong and Yuan Chen PDI 2010
ISPD Guidelines: Principles of Training

Who is the learner?
Who should be a PD trainer?
What should be taught?
Where should the training occur?
What should be the duration of training?
How should the patient be taught?
Adult Education

Prepare the learner with what they are going to learn,
What the trainer will be doing
What the learner will do
How both of you will know that learning has occurred.

Bernardini, Price & Figueiredo: PDI 2006
ISPD Recommended Practical Communication Skills

- Demonstrate
- Patient describes in his own words
- Patient practices with supervision
- Positive feedback
- Positive correction
- Practices without supervision
Team Approach to Training

- Formal preparation for patient education (theoretical and clinical)
  - Senior PD nurse for mentoring
  - Continued education to hone training skills

Successful completion of testing at the end of PD training course
  - Recognition of contamination and proper responses

Well-planned PD training curriculum
  - Training and retraining protocols
  - Home visit protocols
Use aprons or mannequins to practice procedure.

- Limit sentences to one main idea and support the information.
- Use short words and sentences. Use active voice “You.”
- Allow time to read and absorb information. Consider interactive components such as group work and peer support.
- Know when a patient cannot manage self-care, so other support/assistance can be explored.

Hurst H, Figueiredo AE PDI 2015
Training

Use multiple teaching methods and tools requiring fewer literacy skills

- Teach one step at time
  - Give enough time to practice

- Use repetition to reinforce information
  - Repeat information with different wording

- Focus on patients strengths and demonstrate confidence in his ability to learn

- Make points of information as vivid and explicit as possible

- Simple procedures, oral instruction contains cues such as tone of voice
  - Avoid medical jargon

- Small amount of information agreed with the patient

VARK Style

V - Visual
A - Aural
R - Read/Write
K - Kinesthetic

Unimodal  Multimodal

www.vark-learn.com

Visual

Tends to speak fast and interrupt the speaker

Aural

Speak slowly and be a good listener

Motor

Use hands-on approach.

Videos and pictures showing real things
Should we apply these Educational Practices from the Peritoneal Dialysis (PD) teaching program to the Home Hemodialysis (HH) teaching Program?
Nurse Trainers Expectations

- Teacher
- Communicator
- Telephone operator
- Writer
- Cultural Diplomat
- Counselor
- Night owl
- Critical analyst
- Technician
- Law enforcer
- Spy
- Researcher
- Reader
- Sociologist
- Document designer
- Juggler

B.Kelman PDI 1995
• Keeps up with current knowledge in this very complex field

• Attends education sessions when possible

• Shares current information read with co-workers
A Night Owl

• Peritoneal Dialysis/Home Hemodialysis Nurses on call 24 hrs /day

• Able to break sleep patterns and respond professionally to all calls
In one ear and out the other

- 50-80% of medical information is forgotten instantly
- 50% of retained information is recalled incorrectly
- 14-21% never fill original prescriptions
- 30 – 50% disregard instructions

Evaluating your training:

- Track patient outcomes
  - Infection rates (peritonitis, catheter infections)
  - Hospitalization rates
  - Deaths
  - Transfers to alternate modality
- Periodic reassessments of patient technique and problem solving
Retraining when to be done

After peritonitis

Catheter infection

Prolonged hospitalization

Any other interruption in Treatment
We need to talk more often to colleges across the country
Working together
Summary

• Nurses can provide outstanding training for their patients if they apply the principles of adult learning.

• We need to establish standards for Peritoneal Dialysis training. (Home Hemodialysis)

• We need to evaluate the outcomes of various training methods to determine the best approaches for patients.
Conclusion

What **Matters Most** in Home Dialysis Training

- Patient/Family *safely* perform all required procedures
- Patient/Family *recognize* complications and understands how to relay the information to the home training staff
Doing the same thing over and over again and expecting different results

Albert Einstein