Home Dialysis University

Home Dialysis Unit Infrastructure

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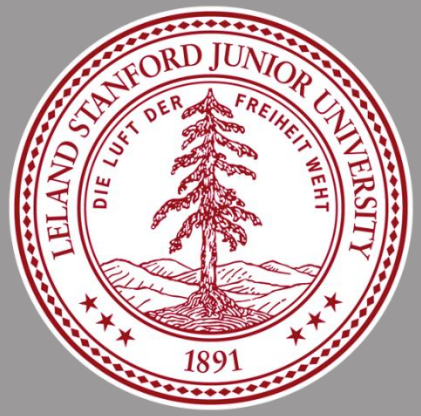
USF Health

INTERNATIONAL SOCIETY FOR PERITONEAL DIALYSIS



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Potential Conflict of Interest Disclosures at time of recording:
Speaker Board for Baxter Healthcare and Fresenius Medical Care
Advisory Board for Fresenius Medical Care

Question

- How easy or hard is it for you to start a patient on in-center HD? On PD? On HHD?
- What steps do you need to take to actually help your patient decide on a dialysis modality and get dialysis started for your patient?
- And keep them on home dialysis?

Infrastructure Is the Key to User Friendly Home Dialysis

- What do you have to do to start a patient on in-center HD?
- Do you feel more comfortable starting a patient on in-center HD *vs.* home dialysis
- How easy is it to take care of an in-center HD patient *vs.* a home dialysis patient?

The Backstory of a Home Patient

- Dialysis modality education: where? who? when?
- What are the follow up plans after access placement (where, who, how often)?
- What systems need to be in place for a home unit to be successful?

Education

Center Selection

Training

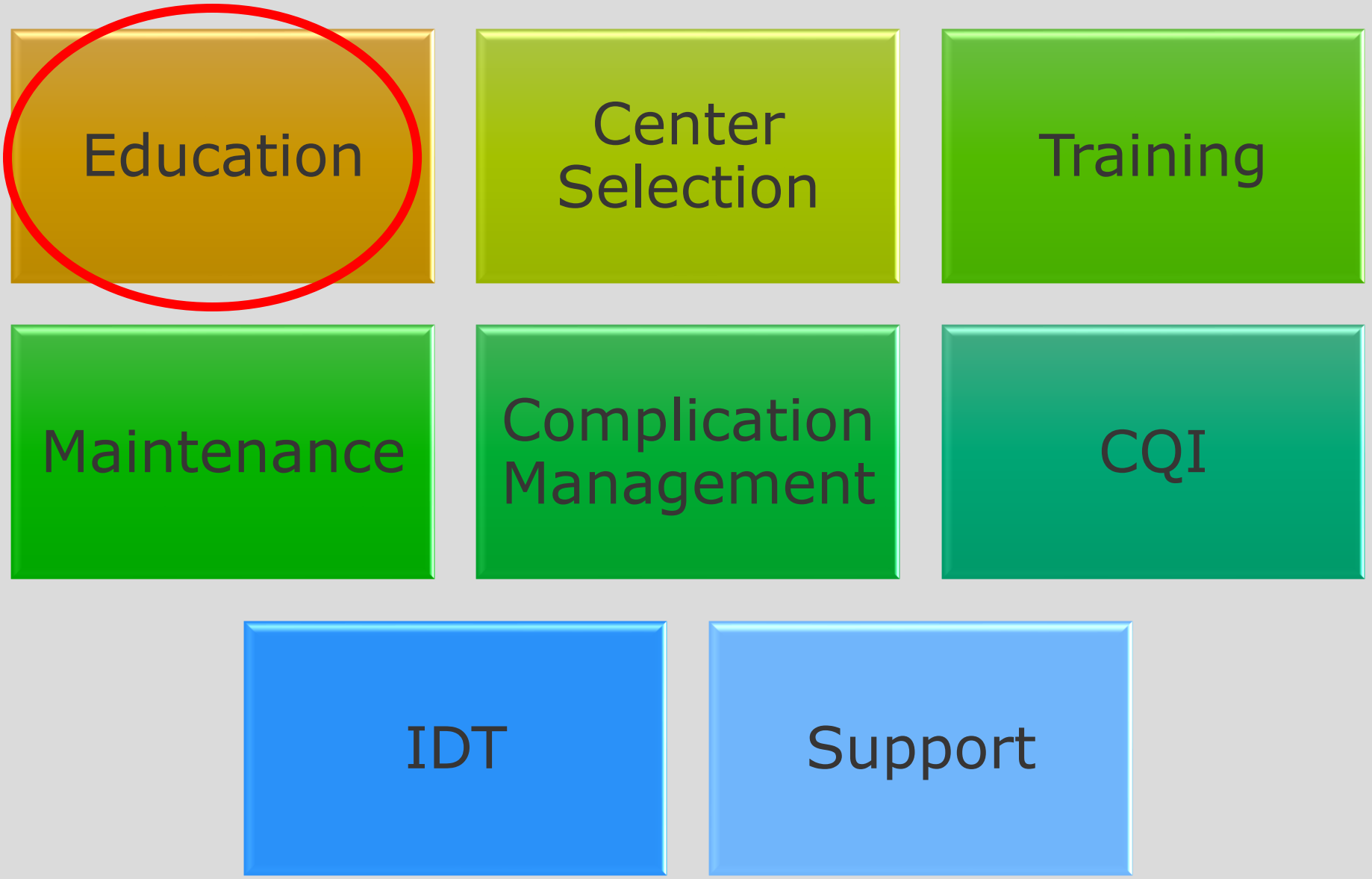
Maintenance

Complication Management

CQI

IDT

Support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Home Dialysis Education – Key Points

- Timing
- Location
- Educator
- Methods
- Follow-up

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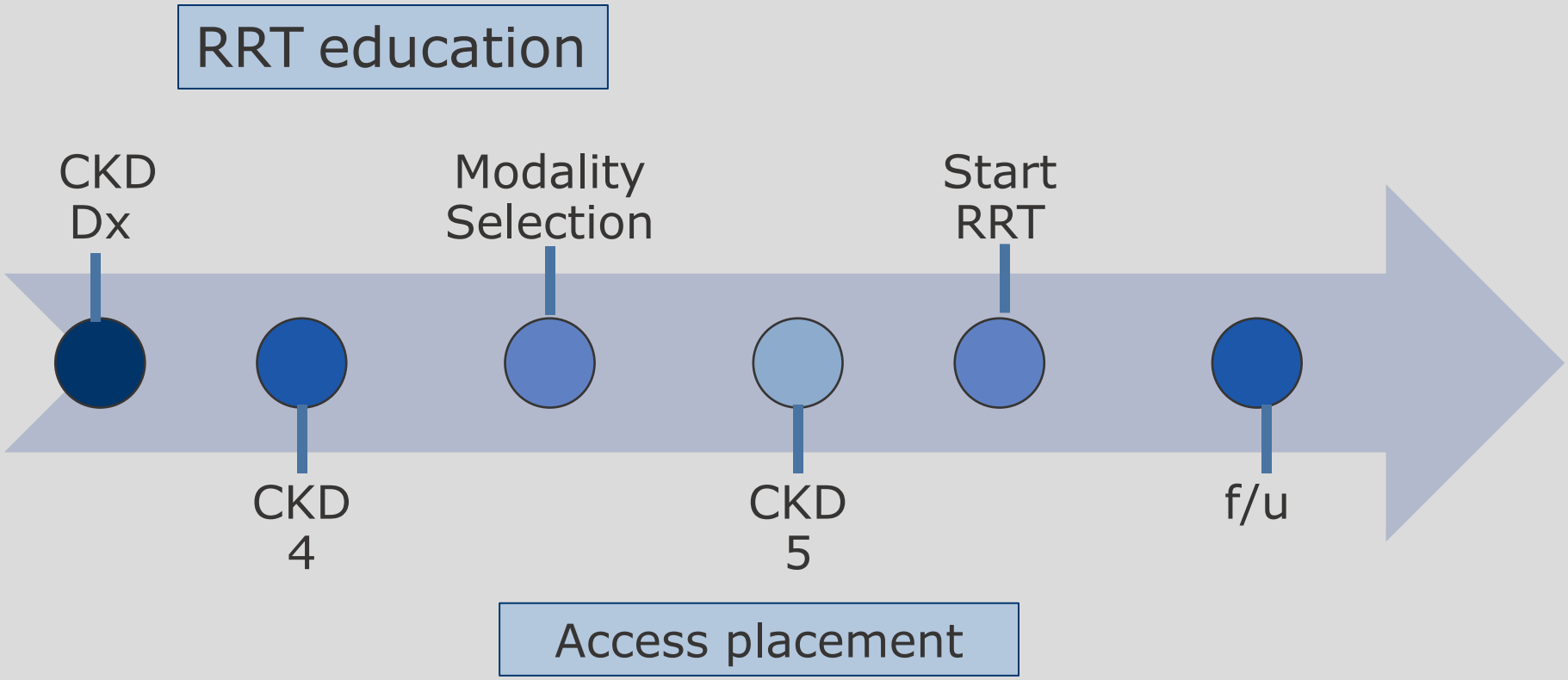
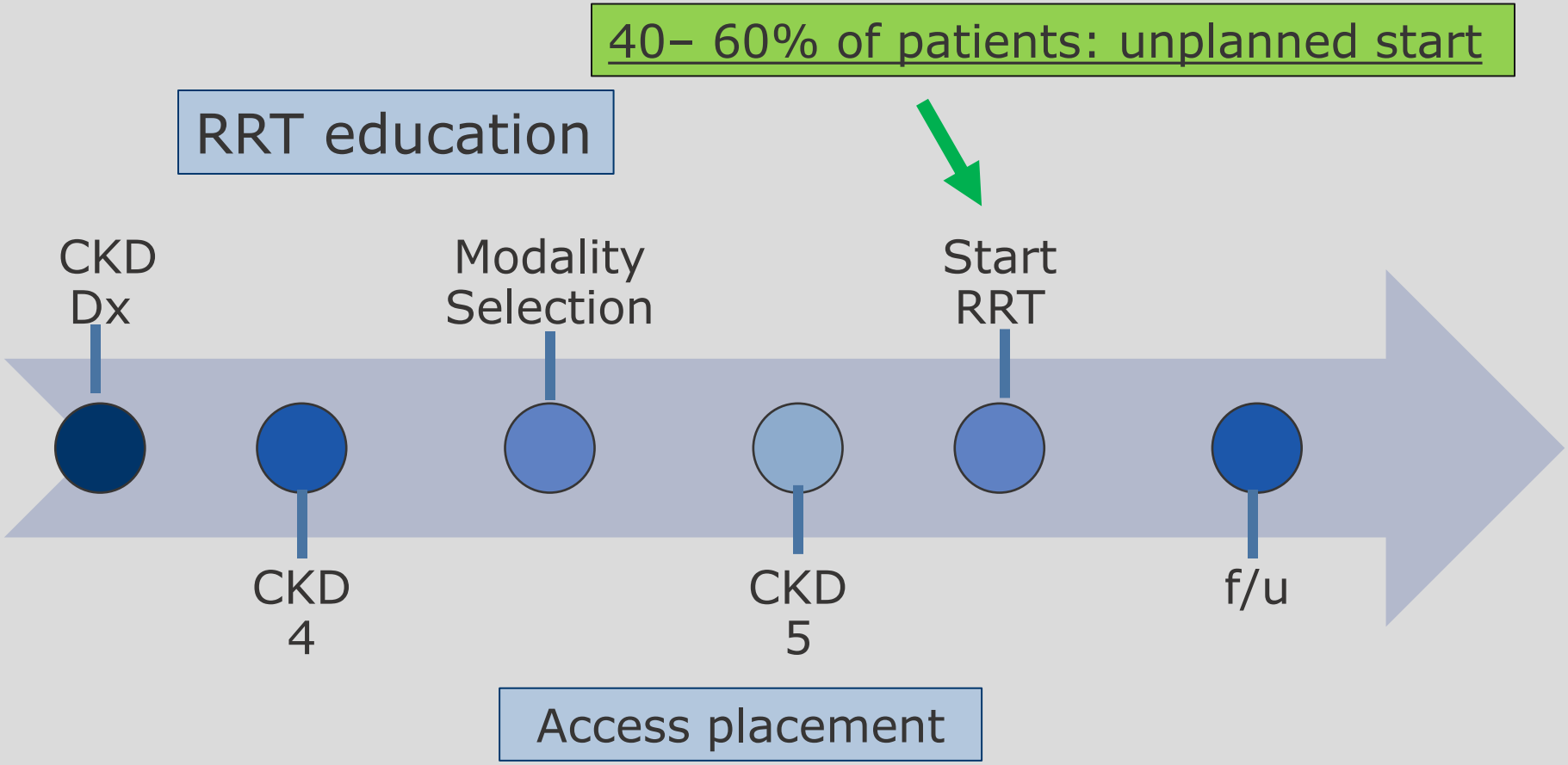
Dialysis Timeline



Dialysis Timeline

Mendelssohn DC, et al. *BMC Nephrol*. 2009;10:22. Tennankore KK, et al. *BMC Nephrol*. 2012;13:72. Hassan R, et al. *Can J kidney Heal Dis*. 2019;6



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Home Dialysis Education – Key Points

- Timing
- Location
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- Methods
- Follow-up

RN
MD
MSW
NP
PA

Home Dialysis Education – Key Points

- Timing
- Location
- Educator
- Methods
- Follow-up

Dialysis education: basics

- Provide support and empathy
- Patient centered
- Basic knowledge of kidney function
- Therapy options available
- Discuss benefits, risks, and challenges
- Use of visual and written teaching aids
- Multi-session

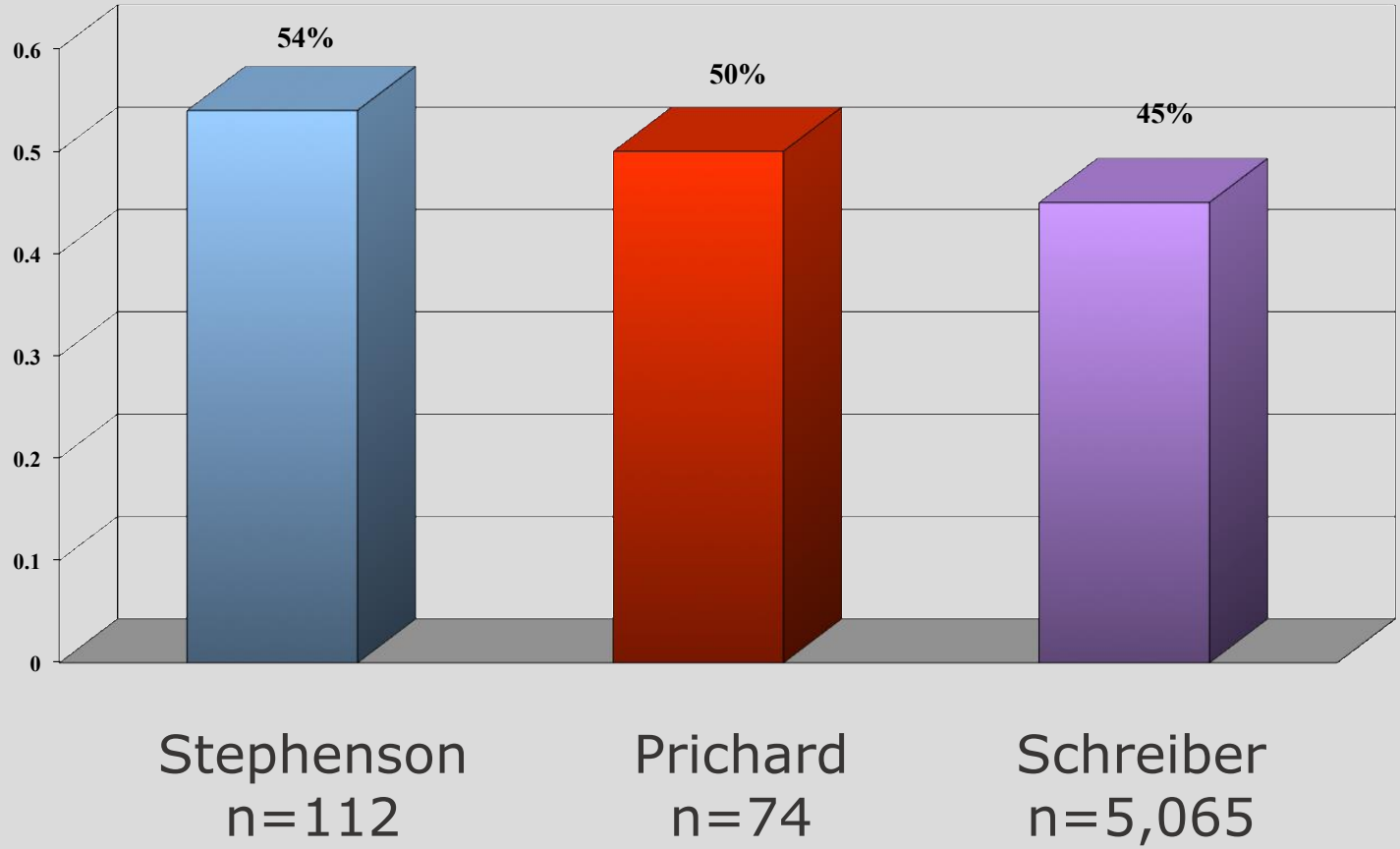
Modality Education: Paramount to the Success of the Home Program

- Without education, in-center hemodialysis tends to be the default modality for dialysis patients

- Numerous studies have shown that dialysis education increases patient selection of home dialysis

Dialysis Education Affects Modality Choice

Stephenson K et al. Clin J Am Soc Nephrol 6, 2011: 799 – 804; Prichard S. PDI 16, 1996:69-72; Schreiber. NKF Meeting Abstract. April 2000

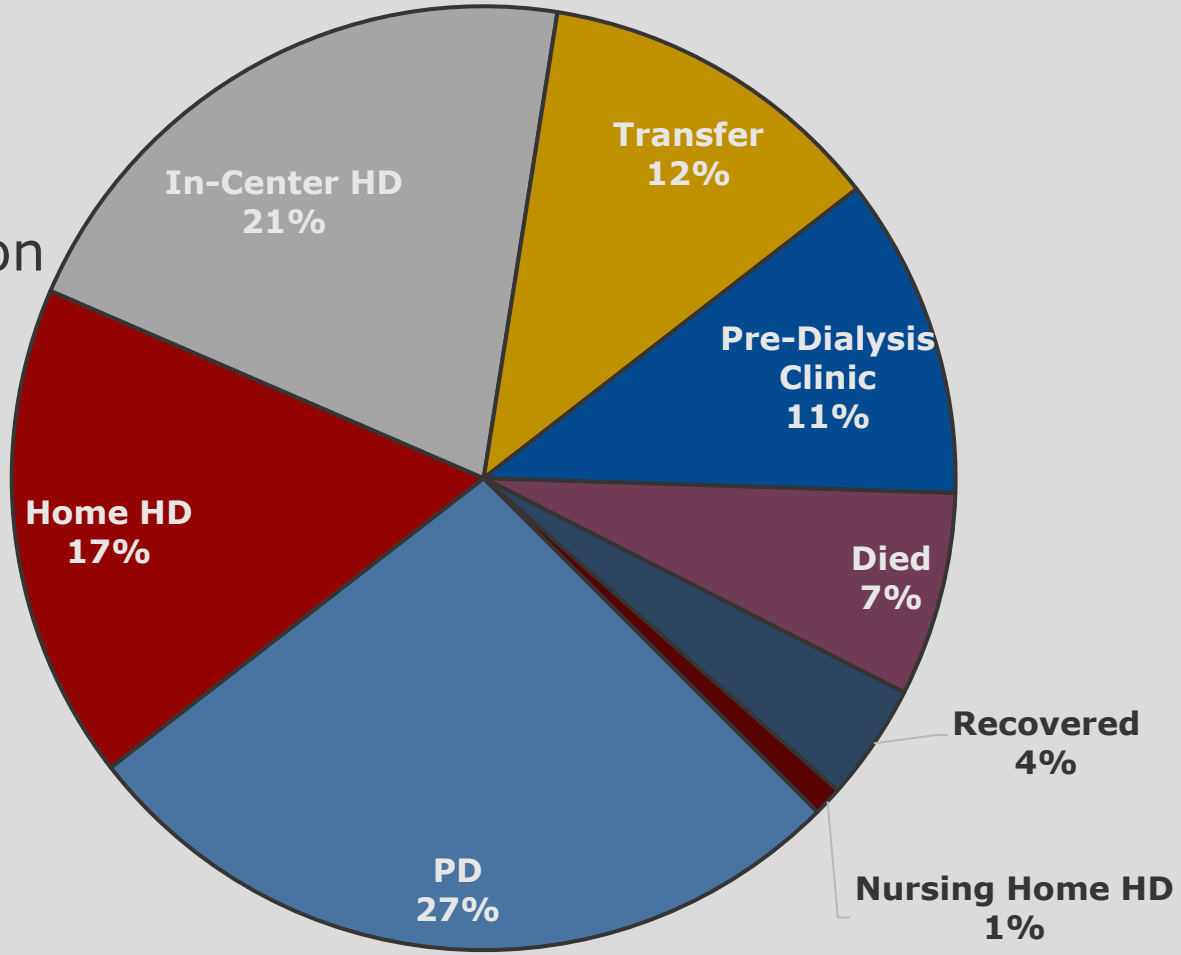


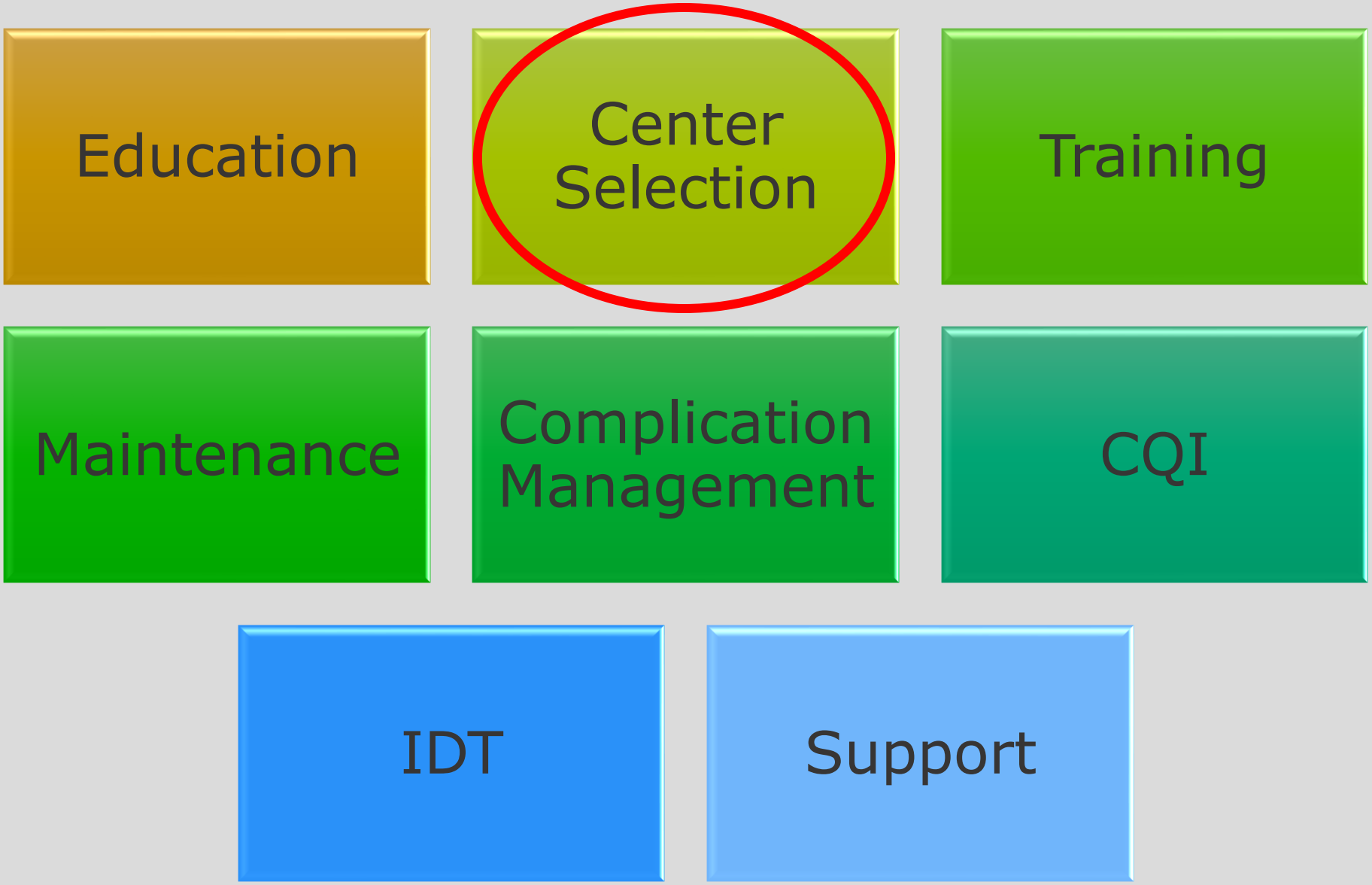
percent of patients choosing PD after an education program

Education Influences Modality Choice

Watson D. *Semin Dial*. 2013;26(2):184-187.

Home dialysis chosen often after in-hospital education

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Home Unit Facility – Physical Space

- Training / patient rooms
  - How many ?
  - Design / décor
    - Sofas, tables, lamps, posters
    - Sinks / hopper
  - Treatment room
    - Extended treatment room
  - Visibility


Insert
Home
Dialysis
Machine
Here


Workstation has a clear view of training rooms

Center Size Effect: Home Dialysis

Etheir I *et al.* NDT online 07 February 2020
Htay H et al. CJASN 12 (7) 1090-1099, 2017

Center size positively associated with

- increased home dialysis uptake
- lower rate of technique failure
- lower infection rate

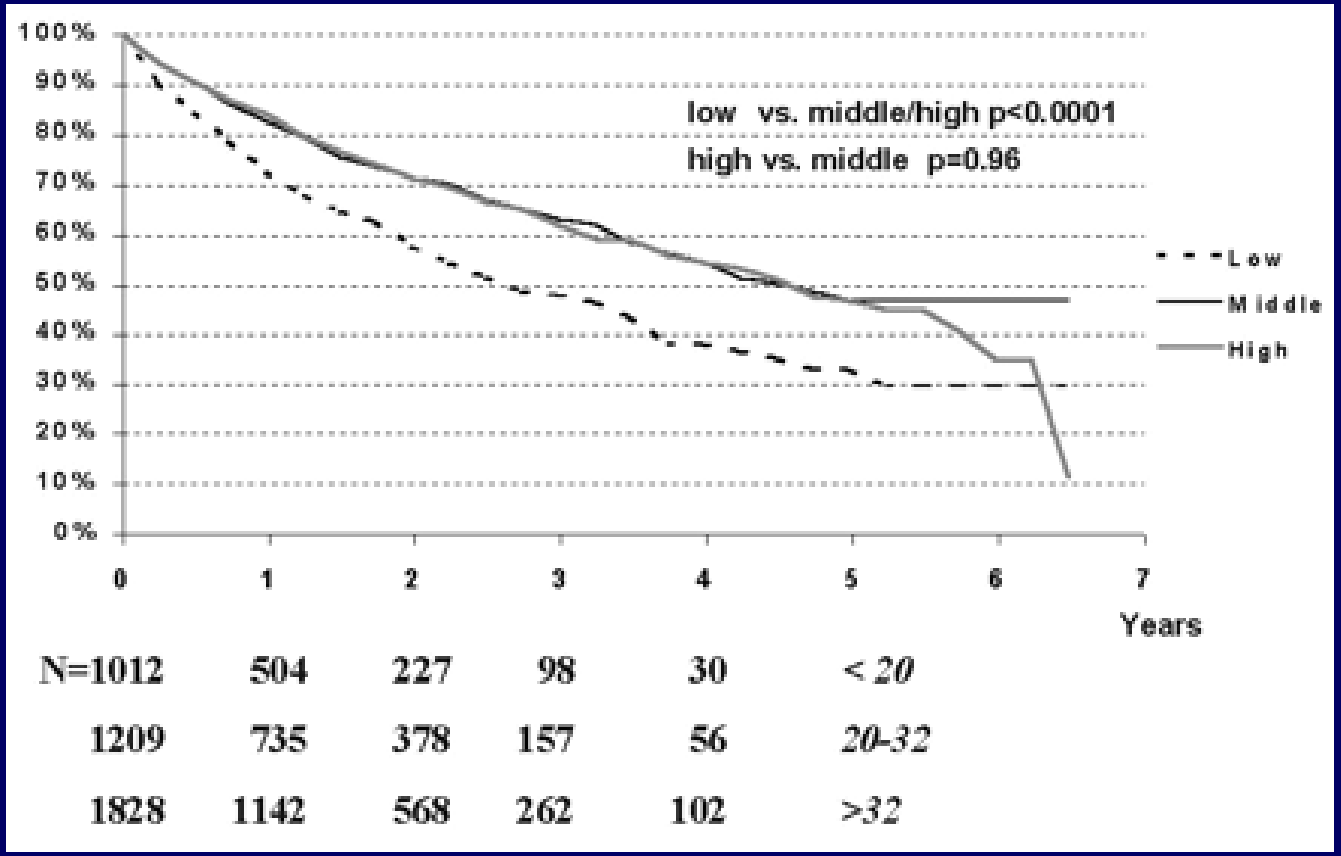
Number of PP patients in a Typical US Center

Total # pts	# units	% of total	# pts in group	% of total pts
> 50	59	4.4%	4,158	19.6%
21 – 50	290	21.6%	9,323	44.1%
11 – 20	370	22.8%	4,588	21.7%
6 – 10	249	18.5%	1,938	9.2%
1 – 5	439	32.7%	1,156	5.5%
Total	1,407		36% of patients in units with fewer than 20 patients	

Courtesy of Dr. F. Finkelstein

Center Size and Technique Failure (Dutch Registry)

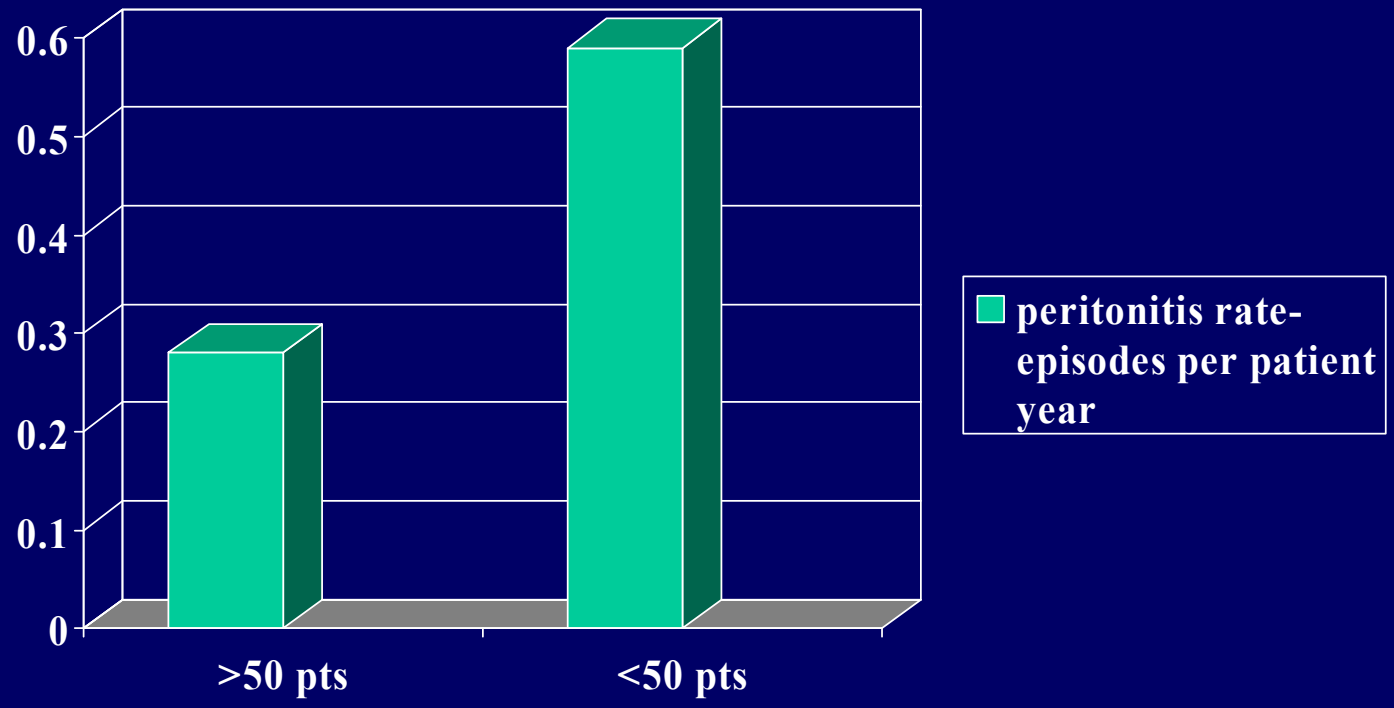
Huisman Nephrol Dial Transplant 2002; 17: 1655−1660



Low: <20 pts, n=1012 Medium 20-32 pts n=1209, High >32 patients, n=1142

Peritonitis Rates in Dialysis Units The CHOICE Study

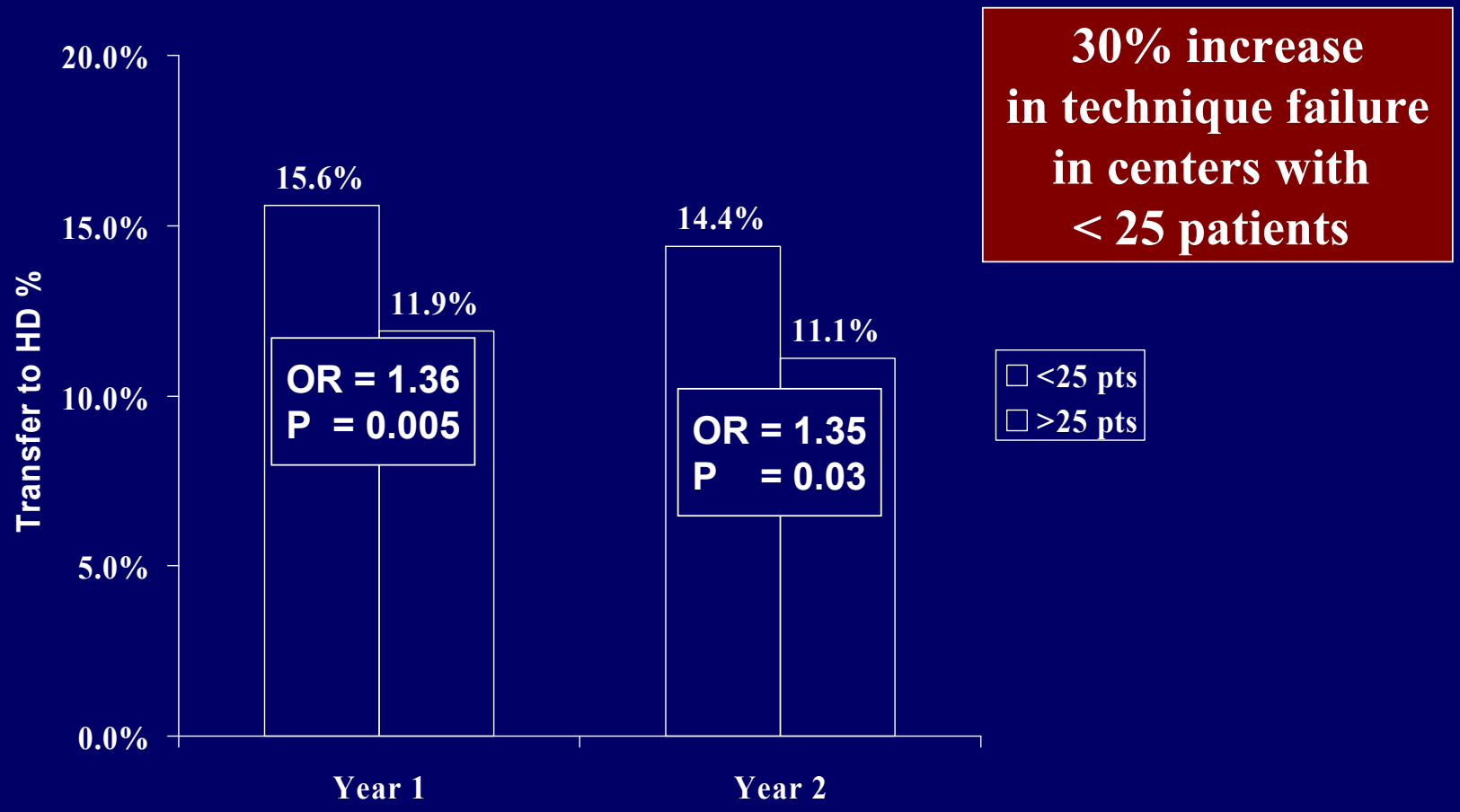
Plantinga L et al Perit Dial Int, 29: 285-291, 2009



Results are the same when corrected for age, sex, race, comorbidity, BMI, diabetic status

Technique Failure at 1 and 2 Years in Network 1 (New England) By Center Size (≥ or < 25 patients)

(Afolalu et al: PDI 29:292, 2009)

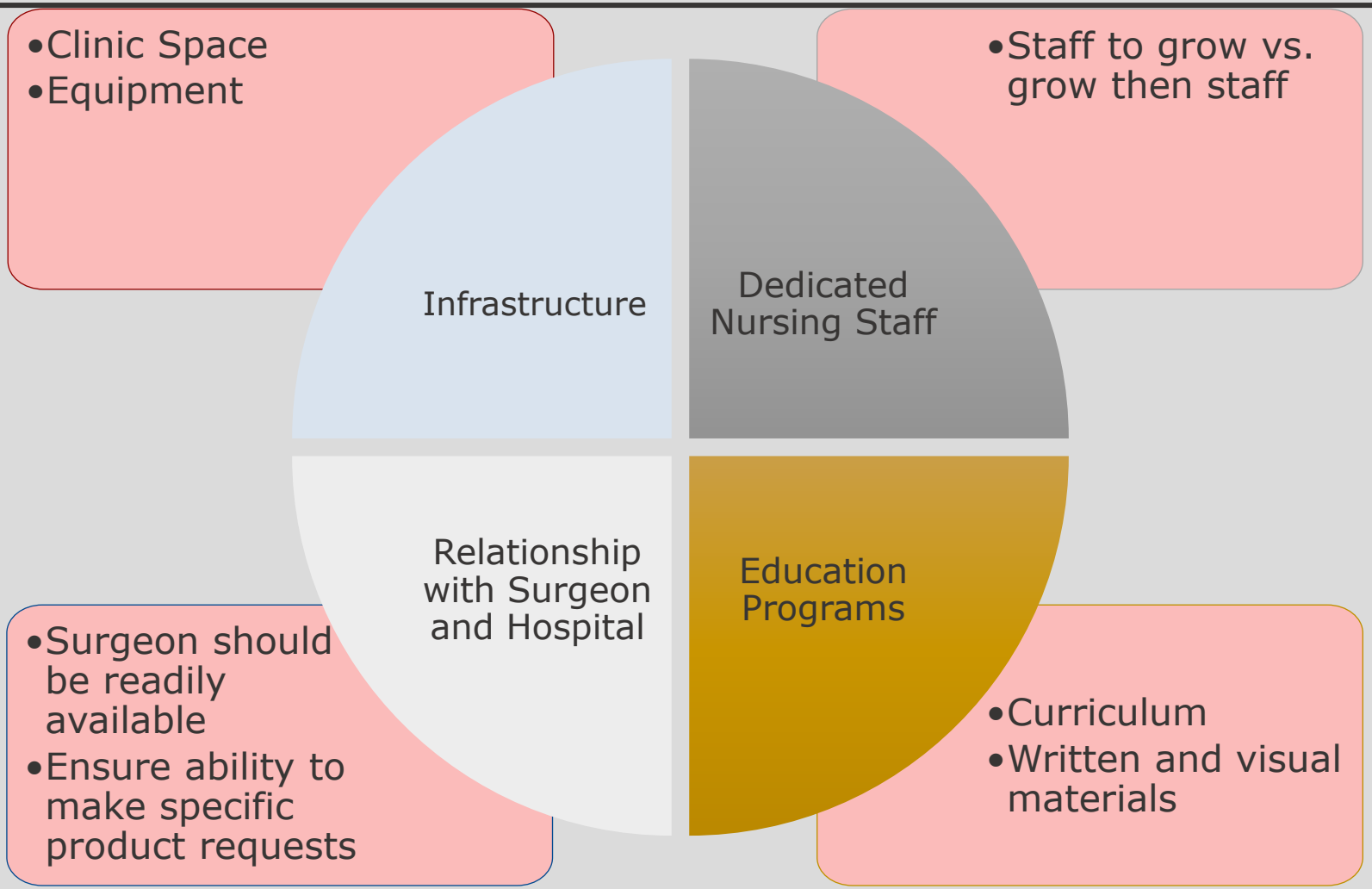


Expanded Home Dialysis

- Urgent-start
- Transitional Care
- Assisted PD

Developing an Urgent Start PD Program

Casaretto A, et al. *Adv Perit Dial*. 2012;28:102-105



Transitional Care Units

- acute-start dialysis patients can receive dialysis and train on home dialysis in the same location
- avoids in-center HD
- concentrates on patient education and treatment for the first 30-60 days of dialysis
- dedication RN(s) and PCT(s)
- up to 4+ weeks of in-depth home modality education, support for decision making

Transitional Start Unit: UVA-Charlottesville

1

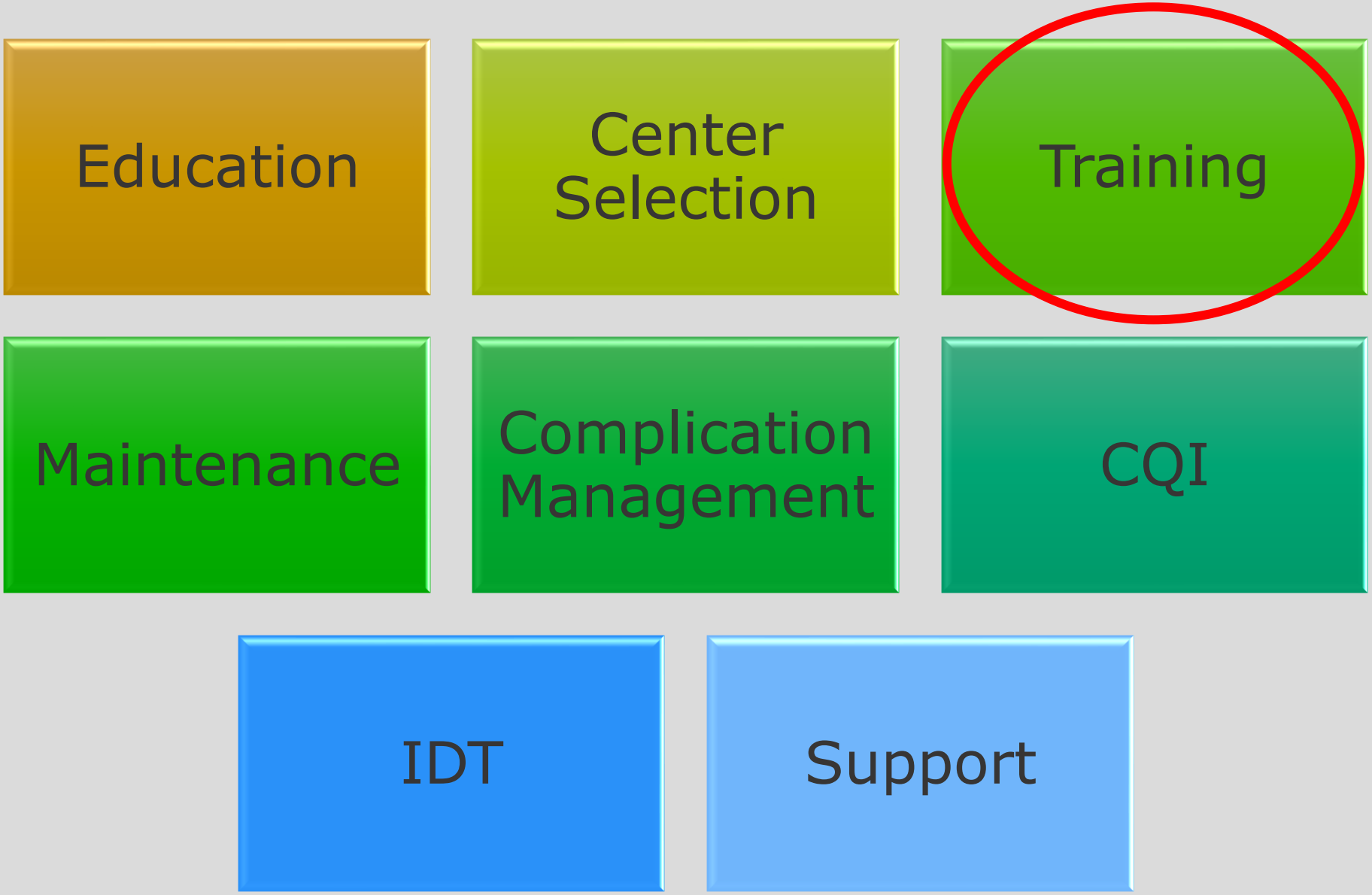
*Debbie Cote, MSN, RN, CNN, NE-BC, is the Dialysis Program Administrator for the University of Virginia

Nurses in the Home Unit

- Dedicated to the therapy
- Independent
- Competent, trustworthy
- Well trained

- The best home RNs are the best teachers/trainers.
- Bernardini et al. reports on various aspects of nursing care in PD:

PDI 26:658, 2006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Profile of a Successful Home Dialysis Nurse

Gokal et al Textbook of Peritoneal Dialysis, 2000; Ch 10; pp 363-386

- Believes strongly that patients are capable of caring for themselves
- Comfortable in a self-directed, autonomous role
- Enjoys teaching and understands the principles of adult learning
- Process oriented as opposed to task oriented
- Understands that the process of problem solving may not provide immediate results and stays with the process through resolution
- Sufficient experience to become expert at assessing the subtleties of the complications associated with peritoneal dialysis
- Confident and assertive in physician relationships and interactions
- Enthusiastically promotes the quality and advantages of home dialysis

Suggested RN: Patient Ratios (PD)

The Renal Association (UK) 1:20

British Renal Society 1:20

ESRD networks (regional) ≤ 1:25

Kaiser - Southern California 1:15

Suggested RN: Patient Ratios (PD)

The Renal Association (UK) 1:20

British

ESRD

Kaiser

Comorbidities

Age

Language

Peritoneal Dialysis International, Vol. 36, pp. 592–605
www.PDIConnect.com

ISPD GUIDELINES/RECOMMENDATIONS

A SYLLABUS FOR TEACHING PERITONEAL DIALYSIS TO PATIENTS AND CAREGIVERS

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Pontificia Universidade Católica do Rio Grande do Sul,[1] Porto Alegre, Brazil; University of Pittsburgh,[2] Pittsburgh, PA, USA; King's College Hospital NHS Foundation Trust,[3] London, United Kingdom; Kwassui Women's University,[4] Nagasaki, Japan; Atlantic Health Sciences Corporation,[5] Saint John, New Brunswick, Canada; Peking University Third Hospital,[6] Beijing, China; Hawke's Bay District Health Board,[7] New Zealand, University of Sydney, Sydney, Australia; and University of Toronto,[8] Toronto, Ontario, Canada

Being aware of controversies and lack of evidence in peritoneal dialysis (PD) training, the Nursing Liaison Committee of the International Society for Peritoneal Dialysis (ISPD) has undertaken a review of PD training programs around the world in order to develop a syllabus for PD training. This syllabus has been developed to help PD nurses train patients and caregivers based on a consensus of training program reviews, utilizing current theories and principles of adult education. It is designed as a 5-day program of about 3 hours per day, but both duration and content may be adjusted based on the learner. After completion of our proposed PD training syllabus, the PD nurse will have provided education to a patient and/or caregiver such that the patient/caregiver has the required knowledge, skills and abilities to perform PD at home safely and effectively. The course may also be modified to move some topics to additional training times in the early weeks after the initial sessions. Extra time may be needed to introduce other concepts, such as the renal diet or healthy lifestyle, or to arrange meetings with other healthcare professionals. The syllabus includes a checklist for PD patient assessment and another for PD training. Further research will be needed to evaluate the effect of training using this syllabus, based on patient and nurse satisfaction as well as on infection rates and longevity of PD as a treatment.

Perit Dial Int 2016; 36(6):592–605 epub ahead of print: 25 Feb 2016
https://doi.org/10.3747/pdi.2015.00277

KEY WORDS: Peritoneal dialysis; nursing; patient education; training; teaching; curriculum; adult learner.

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In 2006, the International Society for Peritoneal Dialysis (ISPD) Nursing Liaison Committee published the ISPD Guidelines/Recommendations for peritoneal dialysis (PD) patient training, aiming to help PD nurses prepare patients and/or their caregivers to perform PD (1). Based on the principles of adult learning, these guidelines established a broad description of a course and a set of proposals to aid the teacher/nurse (hereafter called the PD nurse). The committee currently believes that, while the recommendations are still relevant and agree with current teaching practices in PD clinics, there is a need for a more comprehensive course to guide PD nurses.

The 2006 Guidelines tried to answer some questions that arise when talking about PD training: Who should be the trainer? Who is the learner? What should be taught? Where should the training occur? What should be the duration of training? How should the patient be taught? However, many of these questions remain unanswered. A search in PubMed using the words "training," "patient education," "peritoneal dialysis," and "peritonitis" found only 17 articles published in the last 5 years, and most of these were about infection prevention. Only 4 were published in the last 12 months. Of these 1 article was a narrative review of the literature of educational interventions in PD which concluded that the topic remained an under-studied aspect of PD (2); another looked at the impact of training hours on infection and suggested a minimum of 15 hours training, to be done before catheter implantation or more than 10 days after (3), and the remaining 2 looked at preventing PD infections (4,5). One further observational study, by Firanek *et al.*, analyzing best practices for nurse-led PD training programs for patients on automated peritoneal dialysis (APD) in the United States, stated that best practices

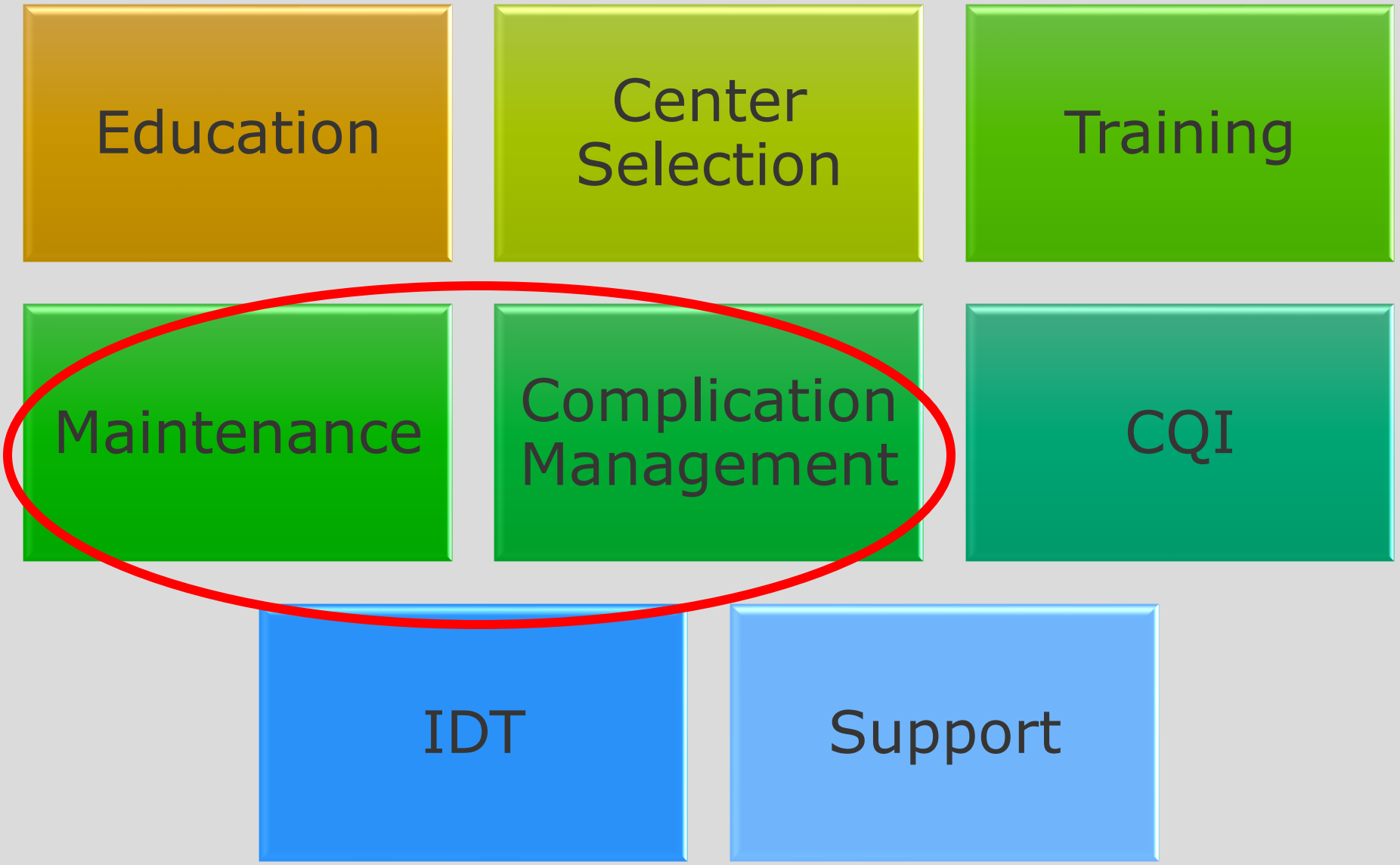
ISPD PD Patient Training Syllabus

www.ispd.org

Figueiredo AE *et al. Perit Dial Int* 2016;36:592.

Regional Home Dialysis Training Centers?

- Cost effective
  - Initial infrastructure investment spread out over many more patients
- Efficient
- Better outcomes
  - (larger centers with more experience have better outcomes)
  - RNs get more experience more often
- Might reduce impact of experienced RN shortage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Standardized vs. Individualized Orders

Dialyzer: _____
EDW: _____kg
Lactate: ☐ 40 mEq/L ☐ 45 mEq/L
Volume: ☐ 25 L ☐ 30 L ☐ 35 L
Frequency of Dialysis: _____x/week
Flow Fraction: _____%
Blood Flow Rate: _____ml/minute

☐ Short Daily prescription based on dosing calculator and reviewed with MD & Medical Director

☐ Candidate for Nocturnal Dialysis based on dosing calculator

Standardized Processes

- phone calls: who, when?
- supply ordering: who, when?
- labs: when, where?
- how many visits/month, where, how, and with whom?

Standardized Processes

- phone calls: who, when?
- supply ordering: who, when?
- labs: when, where?
- how many visits/month, where, how, and with whom?

- Protocols
  - -Anemia
    - (get it from unit, pharmacy?)
    - Administer in unit, home?
  - -Volume overload, HTN
  - -Vitamin D
  - -Catheter malfunction
  - -Peritonitis, ESI
  - -PET , adequacy

Protocols For a Home Unit: General

- Vaccinations and HBV testing
- Anemia (ESA, Iron)
- Vitamin D
- 24h collections for adequacy testing
- Holiday dialysis
- Discharge to home
- Machine set-up
- Disaster preparedness

Protocols: Home HD

- Home administration of ESA
- Water safety testing
- Access care and venipuncture
- Catheter care, catheter access
- Heparin
- Clotted dialyzer
- Managing complications
  - Accidental disconnect
  - Infection, fever

Protocols: PD

- Anemia (ESA, Iron)
- Vitamin D
- PET (2.5% vs. 4.25%)
- 24h collections for adequacy testing
- Exit site care
- Transfer set change procedure
- Administration of IP medications
- Teaching home ESA and IP medication administration
- Contamination procedure
- Managing complications
  - Peritonitis, ESI, poor outflow, etc

Pivotal to Home Dialysis Nurse Success:
Understand Physician Expectations

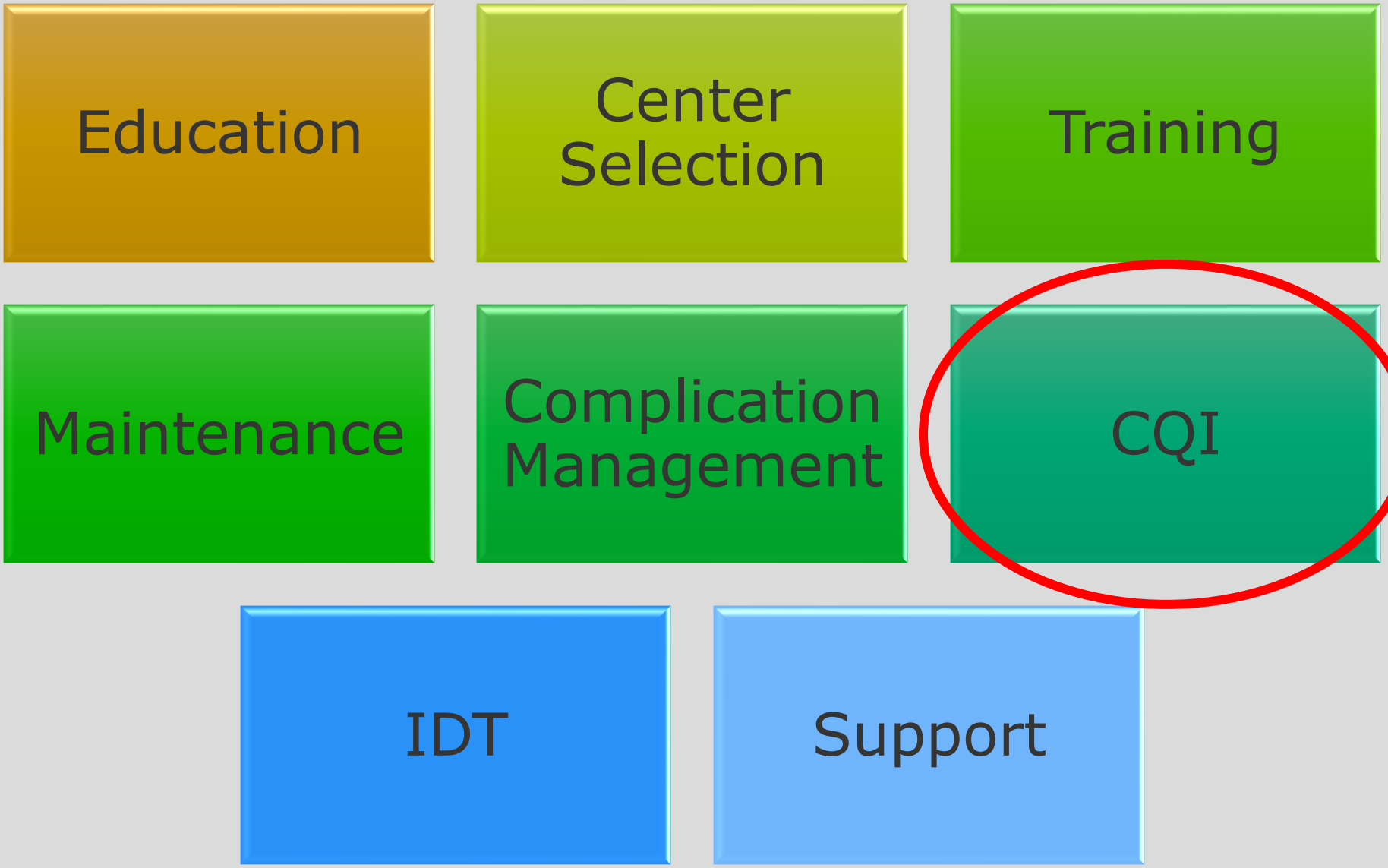
Prior to calling MD

- Exhaust nursing scope of practice and follow pertinent policies, protocols and standing orders
- Be prepared to describe the patient problem, results of nursing assessment and any pertinent labs

While speaking w/ MD

- Describe steps taken to resolve the problem including patient response to interventions
- Have a plan, discuss next steps and ask for a physician order if needed

Courtesy of Drs. Burkart and Golper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QAPI:
Quality Assurance & Performance Improvement

- QAPI involves the entire care team continually reviewing the overall care provided in the dialysis center and seeking ways to improve on the systems and clinical processes as opposed to individual problems as they arise.

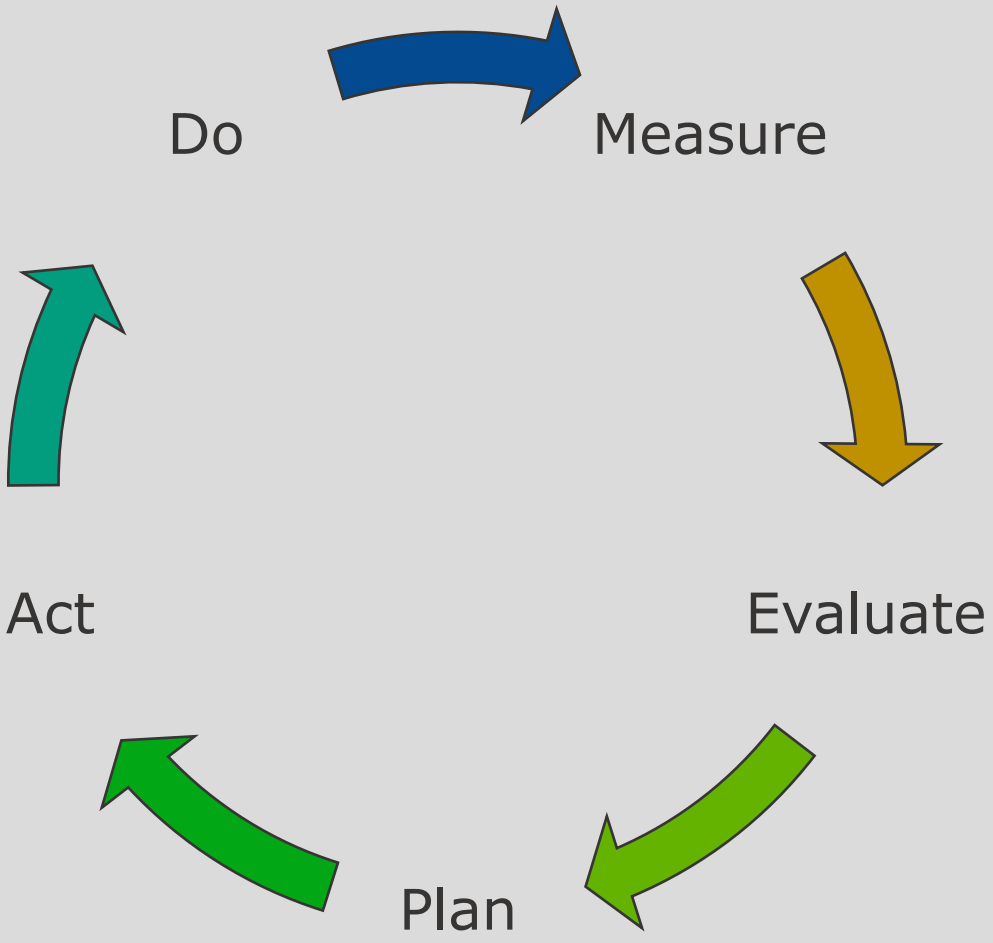
- The dialysis facility must develop, implement, maintain, and evaluate an effective, data-driven, quality assessment and performance improvement program with participation by the professional members of the interdisciplinary team. *

*494.110 Condition: quality assessment and performance improvement process definition by conditions for coverage and metrics; CMS, Centers for Medicare & Medicaid Services

QAPI

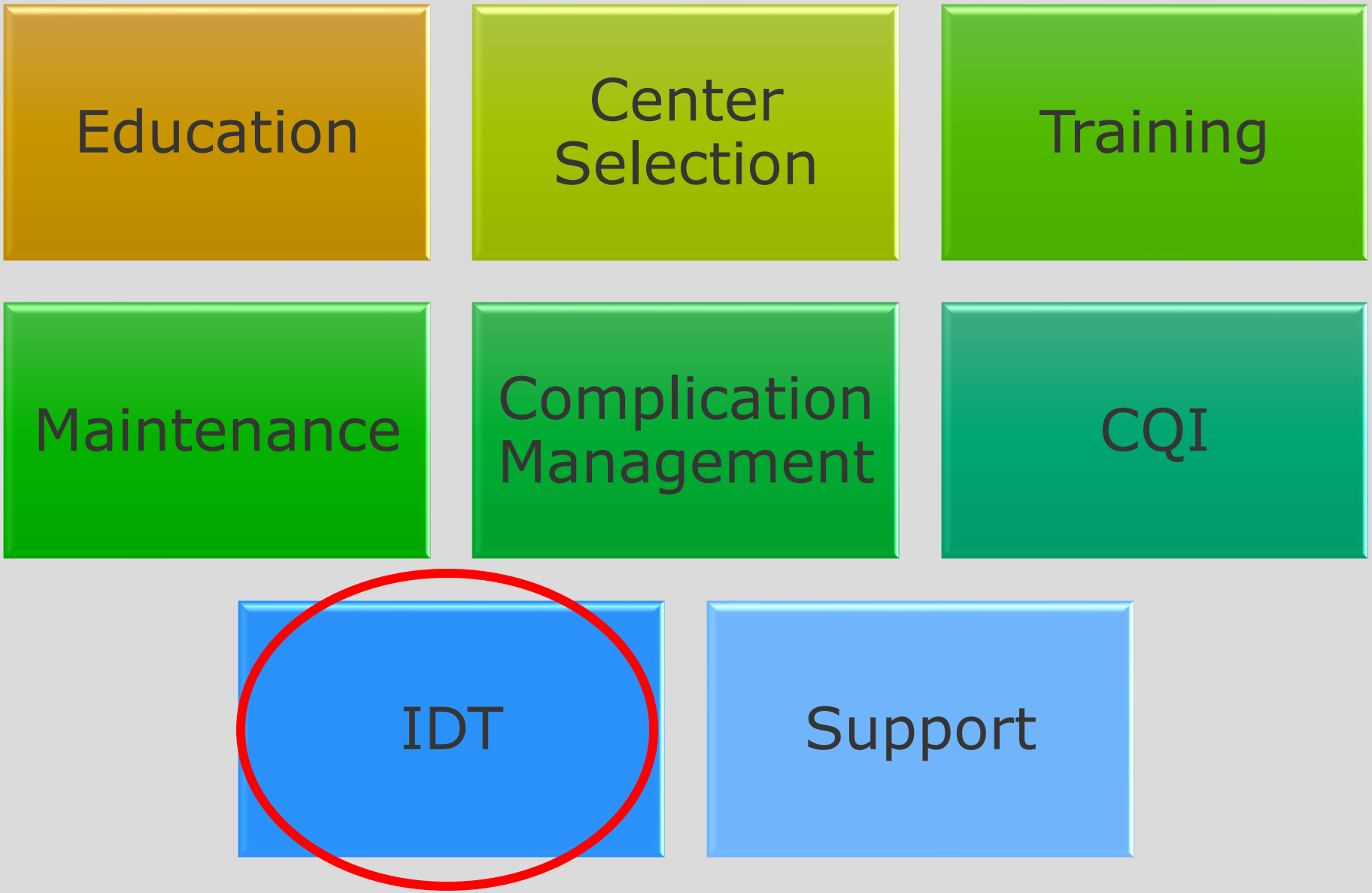
- adequacy of dialysis
- nutritional status
- mineral metabolism and renal bone disease
- anemia management
- dialysis access
- medical injuries and medical error identification
- patient satisfaction
- infection control

QAPI / CQI



Dialysis QAPI

- Include the interdisciplinary care team (IDT), Medical Director, and when possible include the patient voice
- Be data-driven and incorporate indicators related to improved medical outcomes and reduction of medical errors
- Aggregate data to allow for tracking, trending, and performance evaluation both clinically and operationally
- Involve continuous monitoring, evaluation, and adjustment to meet changing facility needs
- Include a clear statement of the purpose of the improvement, goals, estimated time to attainment, and priority within the system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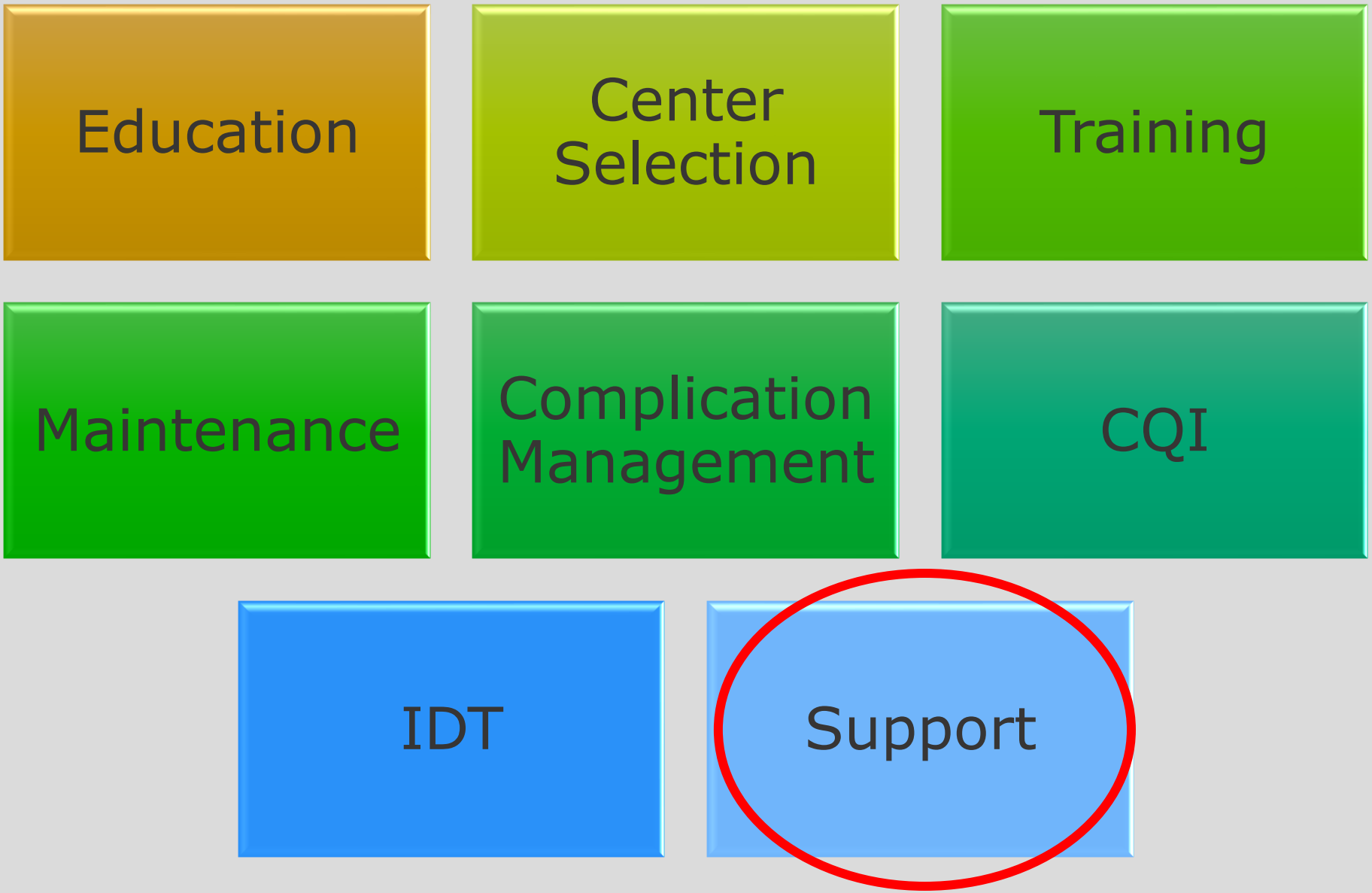
RD Roles

- performs dietary assessment
- education – initial and ongoing

  -sodium, potassium, phosphorus
- Monitors and advises patients, and liaises with MD re:
  - albumin levels, protein intake
  - calcium, phosphorus, PTH levels, and CKD-MBD medication adherence
  - potassium balance
  - fluid balance

MSW Roles

- initial PD education/assessment team member
- assess psychosocial factors that might affect care
- assess caregiver status
- provide patient/family support and assess for possible areas of psychosocial intervention, *e.g.* clinical depression, grief after loss,
- function as a liaison between the medical care team and the patient and family system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Home Dialysis Unit: Physician Support

- EMR
- Ordering platforms
- Telehealth
- Tracking tools, CQI reports
- Physician education
- Patient outreach

The Goal: