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# The Dialysis Unit: Behind Closed Doors

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Actually,

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**The Doors are Wide Open**

# Disclosures

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None

# Self Assessment Questions

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1. Benefits of preserving residual kidney function in dialysis patients include:

- A. Less dietary restriction
- B. Better quality of life
- C. Better survival
- D. All of the above

2. It is not necessary to avoid nephrotoxins, such as NSAIDs, if patient is on dialysis and has residual kidney function.

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# Learning Objective

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Describe the role of the interdisciplinary team in the management of patients in dialysis units

# Outline

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Structure of the outpatient dialysis unit and the interdisciplinary team

Quality and safety in ESRD facilities

Differences between outpatient and inpatient units

When do we see the patients and how often?

Communication barrier

Getting patient information/contacting dialysis units





# Who Works In A Dialysis Unit?

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Medical director

Other nephrologists who have privileges

Clinic manager

Facility Administrator (F.A.)

RN(s)

Dialysis technicians

Dietitian

Social worker

Biomedical engineer

# Facility Administrator Role

Responsible for the management of the facility and provision of all dialysis services, including, but not limited to:

- Staff appointments
- Fiscal operations
- The relationship with End-Stage Renal Disease (ESRD) networks
- Allocation of necessary staff and other resources for Quality Assessment and Performance Improvement (QAPI) program



# Nurse Role

RN works closely with the Medical Director and Interdisciplinary Team (IDT) to ensure quality patient care and outcomes. Such responsibilities include:

- Overseeing the dialysis treatment from start to finish
- Reviewing the patients' lab work, home medications and activities and letting the doctors know about changes in their patients' conditions
- Leadership in QAPI program
- Assessments/Plans of Care with IDT
- Outcomes Management (anemia, adequacy, etc.)
- Patient and staff education
- Medication administration
- Patient care conferences



# Dialysis Technician Role

- Patient Care Technicians (PCTs) are responsible for performing dialysis treatments
- PCTs initiate, monitor, terminate, and document dialysis under the supervision of the Charge Nurse
- PCTs may also be cross-trained to perform other functions in the unit, such as:
  - Reuse of dialyzers
  - Administrative duties
  - Inventory



# Dietitian Role

The Renal Dietitian is part of the IDT (core team) of the facility. They participate in the QAPI meetings and patient care conferences. Other responsibilities include:

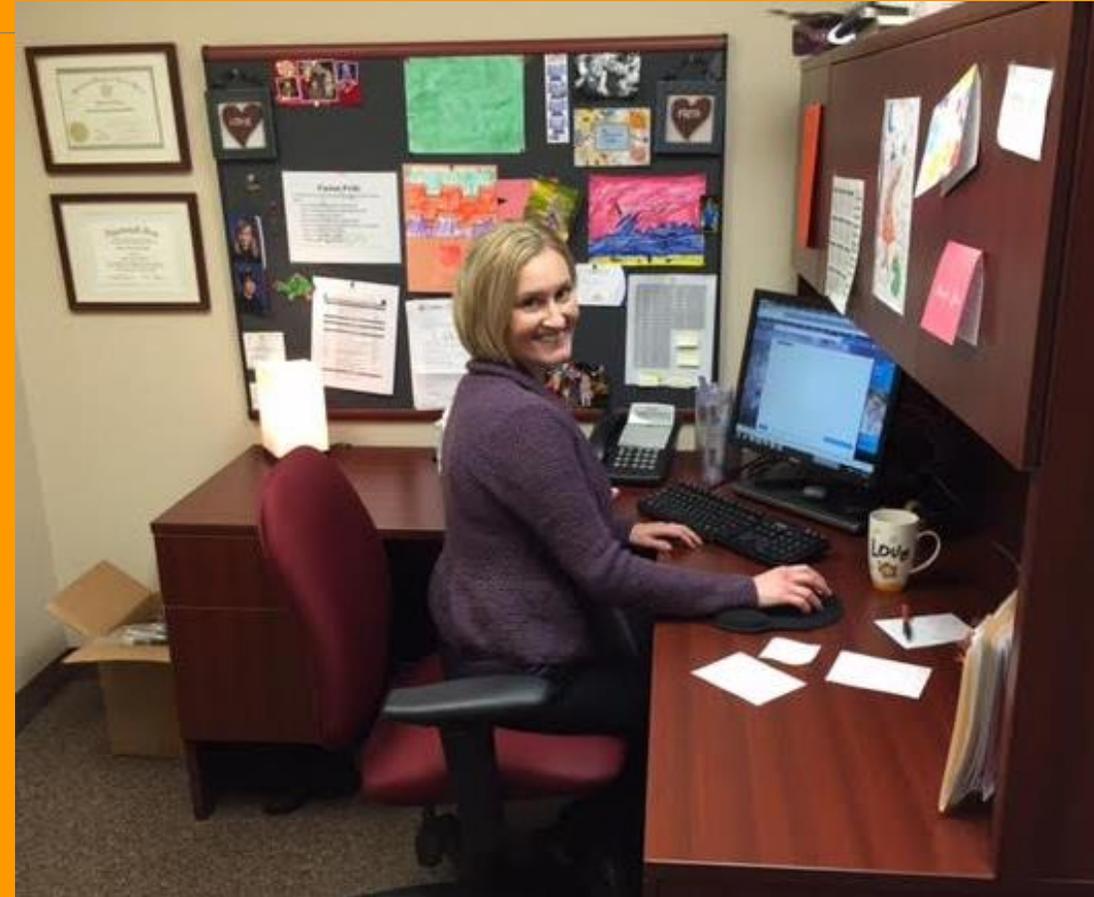
- Nutritional counseling and support
- Monitoring dialysis prescription and outcome on nutritional parameters
- Management of mineral bone disease
- Assessment and plan of care



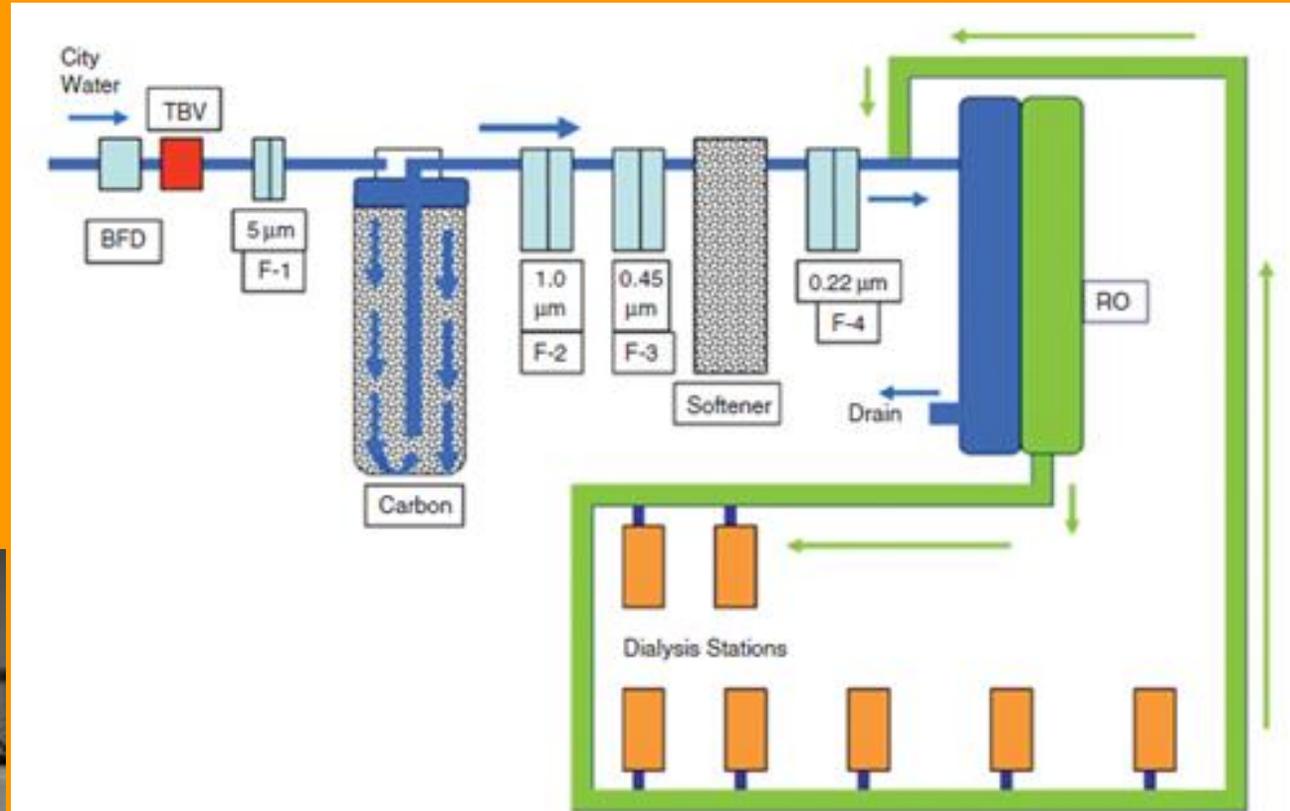
# Social Worker Role

Social workers are part of interdisciplinary care team. They participate in the QAPI meetings and patient care conferences. Other responsibilities include:

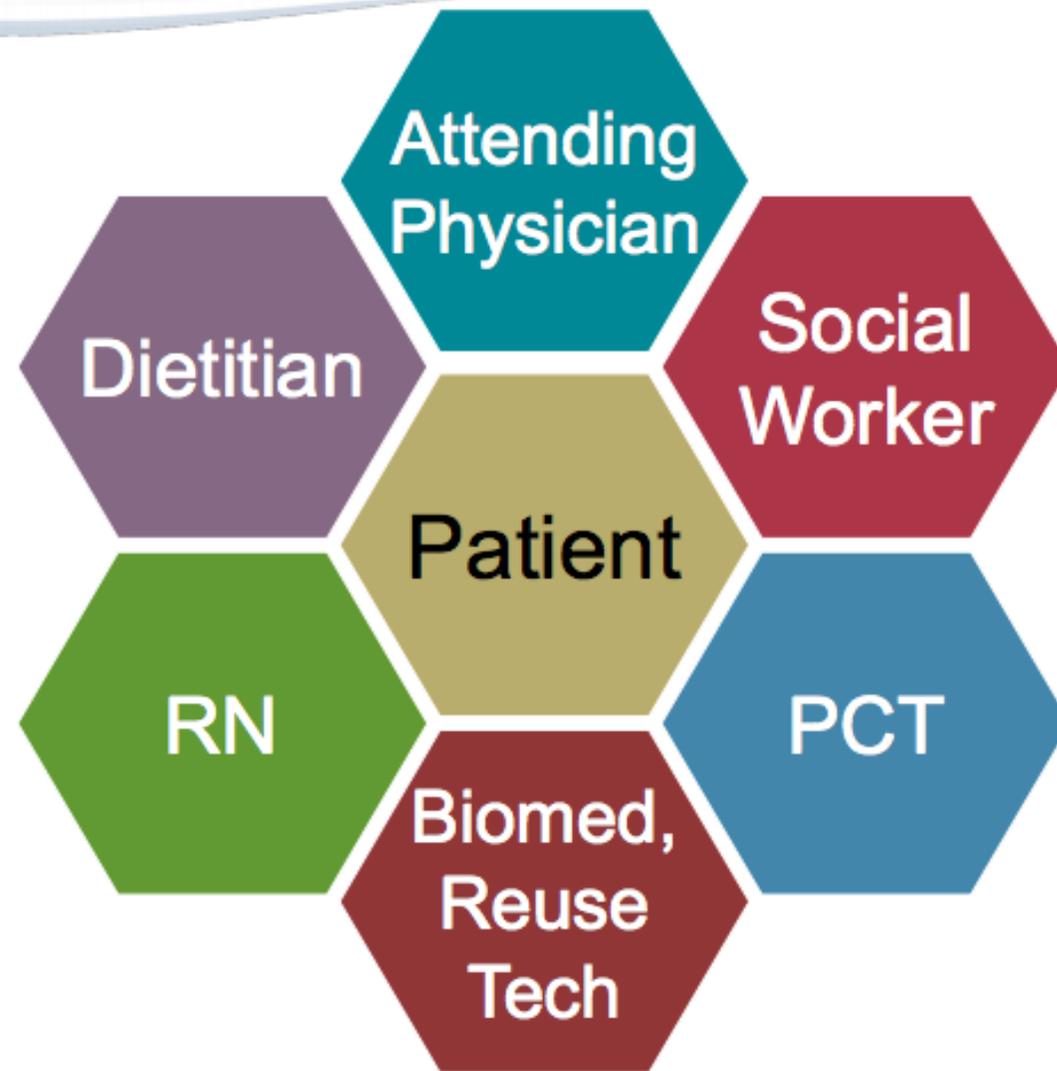
- Psychosocial support, including assessment using the Kidney Disease Quality of Life (KDQOL) Assessment/Plan of Care
- Financial counseling/insurance support
- Transportation and travel arrangements



# Biomedical Engineer Role: “The Water” and “The Machine”



## Care Team



# Question 1

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**A female PCT has been caring for a male patient for several months. The patient tells the technician that he is lonely and depressed. He asks her out on dinner date. In addition to politely declining the invitation, which of these actions, if any, should be taken?**

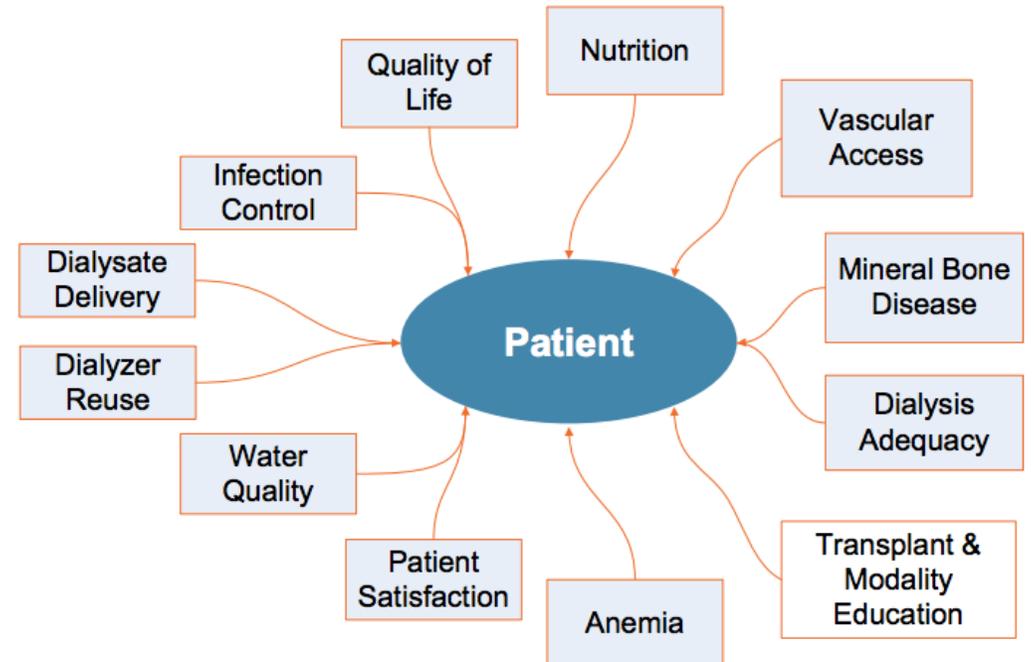
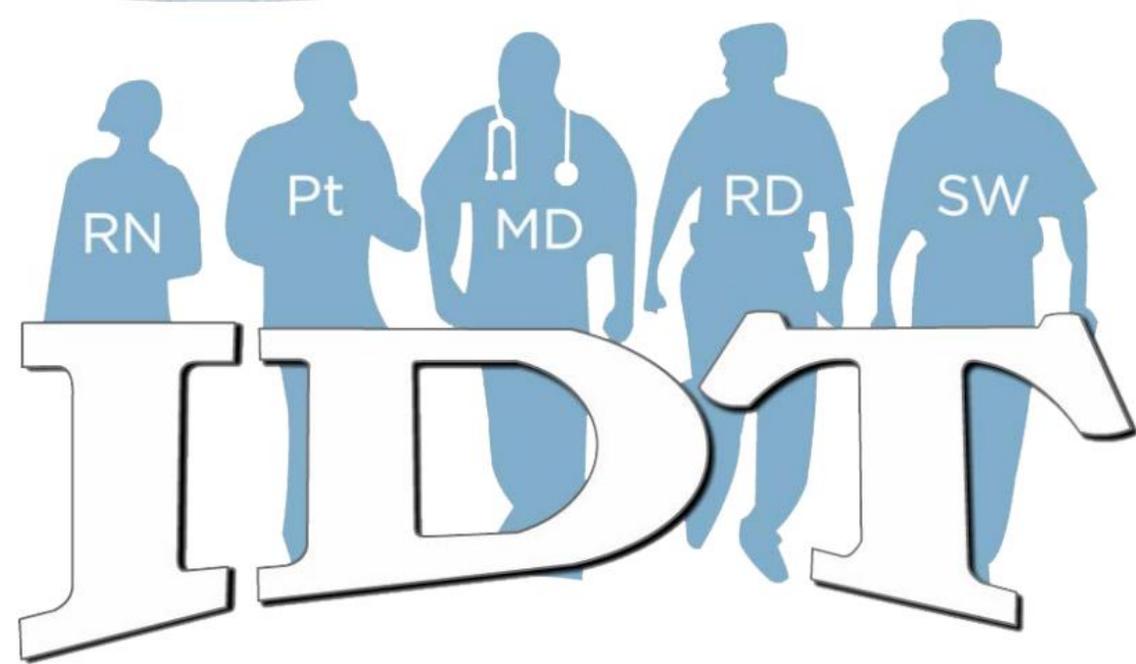
- A. Refer the patient to the social worker and other members of the IDT
- B. Recommend an over-the-counter antidepressant, such as St. John's wort
- C. Encourage patient to socialize with other patients
- D. No further action is needed

# Quality and Safety in ESRD Facilities

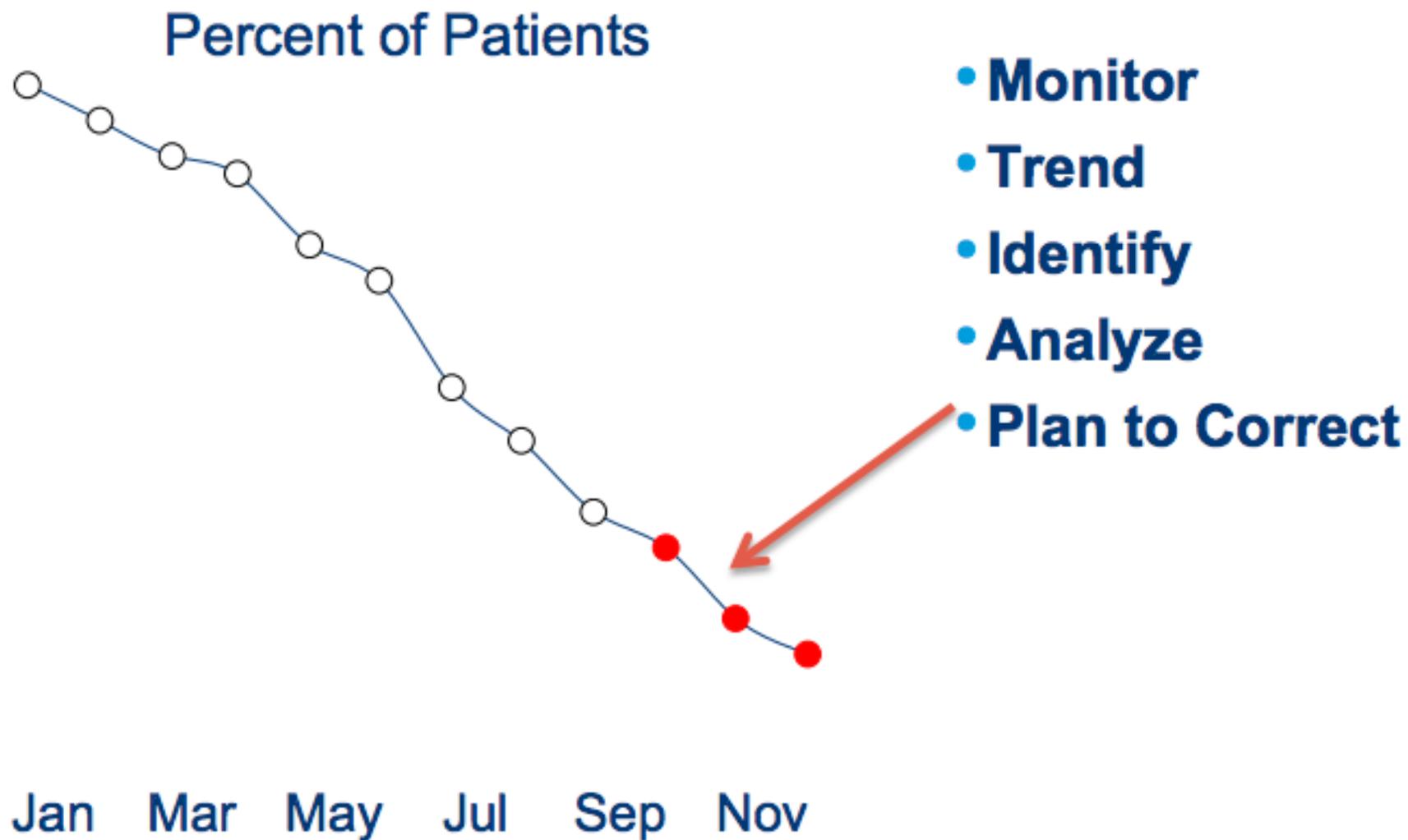
## Conditions for coverage

- CMS rules and standards governing ESRD facilities
- Defines 16 conditions which must be met for facilities to receive Medicare coverage
- Requires participation in network activities and pursuit of network goals
- Failure to meet one or more of the conditions may lead to closure of the facility
- Encompasses:
  - Quality Improvement and Performance Improvement (QAPI) program
  - Safety
  - Policy and procedure
  - Training and education
  - Patient assessments
  - Patient rights

QAPI monthly. Patient care conference held at least quarterly.



# QAPI is a Data-Driven Search for Problems



# Question 2

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**Which of these are performance measures for Medicare reimbursement and followed closely by the IDT and QAPI program?**

- A. Hemoglobin A1c and LDL
- B. Hemoglobin
- C. Adequacy
- D. Number of patients in the dialysis unit
- E. Both B & C

# Dialysis Units (“In-Center”)

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Most units in Minnesota are owned by DaVita or Fresenius

Approximately 120 units in Minnesota

- About half of these are located in the Twin Cities metro area
- More coming....

Over 6,000 units nationwide

Typically scheduled MWF or TTS

- Not all units are open all 6 days

Time on dialysis varies – 3-4 hours

Patients generally are scheduled in 1 of 3 shifts

Nocturnal dialysis at a few units as well

# Home Modalities

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Peritoneal dialysis (PD) and Home Hemodialysis (HHD)

Sprinkled throughout metropolitan and rural areas

Additional responsibilities:

- Space and appropriate home environment
- Home health advocate ("helper") though not obligatory
- Patient education and training
- Coordination of patients' needs (fluid, diet, equipment, troubleshooting, epogen, iron, active vitamin D and antibiotics)

Provider assessment

- Once monthly
- Similar to in-center visits

# Outpatient vs Inpatient In-Center Dialysis Units

	Outpatient Units	Inpatient Units
RN:Tech	1:4-5	3-5:0-1
Blood transfusions	No	Yes
Dialyzer reuse	Yes	No
Frequent blood pressure monitoring	Yes	Yes
Telemetry	No	Yes



# Nephrologist Role

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Timing is everything...

Patients are seen at least once per month by MD/DO

- Required for compensation
- Comprehensive visit vs limited visit

Patients can be seen additional times by MD/DO or Advanced Practice Practitioners (APP)

- Additional compensation for total of 2-3 visits
- Maximal compensation for 4+ visits

Significant variation – approximately 40-60 patients per nephrologist

# Nephrologist Role

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## What are we assessing?

- Adequacy (Kt/V > 1.2, URR > 65%)
- Access (Fistula?, complications)
- Hypertension/Volume status (EDW, IDW <5%, BP target?)
- Nutrition (albumin, nPCR)
- Electrolyte balance (K, Na)
- Mineral and bone disorders (Ca, phos and vit D wnl, PTH goal ~150-600)
- Anemia (Hgb 10-11.5 g/dL, %iron sat, Ferritin)
- Medication reconciliation
- Transplant issues, if applicable (listed?, remain on immunosuppression?)
- Dialysis specific issues (cramping, hypotension, etc.)
- Other issues (treating acute issues, referrals, coordination with PCP/other providers)

## Other labs/medical issues often monitored?

- Hemoglobin A1c
- Lipids (LDL, HDL)
- Liver function tests (LFT)s
- INR
- CBC
- Blood cultures
- Drug levels (e.g. antibiotics)
- Residual kidney function (creatinine clearance)

# Rounding Report

Patient: [REDACTED]  
 ID Number: 1118833  
 Modality: HEMODIALYSIS  
 RICHFIELD DIALYSIS 6001 LYNDALE AVE S STE 150  
 RICHFIELD MN 55423-2490

001049000031545608730010

DaVita®

Printed: 11/5/2015 9:58 AM

## Patient Review

	Wk Ending 11/07	Wk Ending 10/27	Wk Ending 10/24	Wk Ending 10/17	Wk Ending 10/10	Wk Ending 10/03	Wk Ending 09/28	Wk Ending 09/19	Wk Ending 09/12	First Prior	Second Prior
<b>Anemia/Iron</b>											
HEMATOCRIT					27.7 L				30.8 L	30.9 06/11	31.5 07/14
ACT CALC HOBBS					28.5 L	28.3 L			29.7 L	29.1 08/20	30.3 09/11
HEMOGLOBIN		25.8 L			9.5 L	9.4 L			9.9 L	9.7 08/20	10.1 09/11
ALBUMIN					4.8				4.8	4.8 08/11	4.8 07/19
FERRITIN									100	1082 07/14	1424 06/08
IRON					52				100	93 09/11	111 07/16
IRON SATURATION					20				100	39 07/16	20 06/08
TIBC					306				172 07/16	283 07/14	290 06/07
URIC					244				4.8	172 07/16	238 06/08
WBC					5.1				4.8	4.7 06/11	4.9 07/14
TRANSFERRIN										220 03/15	

Medication Given	Wk Ending 11/07	Wk Ending 10/27	Wk Ending 10/24	Wk Ending 10/17	Wk Ending 10/10	Wk Ending 10/03	Wk Ending 09/28	Wk Ending 09/19	Wk Ending 09/12
Epogen (units)	8500 Tu	7000 Tu 7000 Th	7000 Tu 7000 Th	7000 Tu 7000 Th	7000 Tu 7000 Th	8500 Tu 8500 Sa	8500 Tu 8500 Sa	8500 Tu 8500 Sa	4500 Tu 4500 Th
Woodenlign Suco	90 Tu	90 Tu	90 Tu	90 Tu	90 Tu	90 Tu	90 Tu	90 Tu	90 Tu

**Med Order History**

Order Id: 67484  
Epogen 8500 units IV Push 3x qw  
Start: 10/30/15 DC

Order Id: 67062  
Epogen 7000 units IV Push 3x qw  
Start: 10/02/15 DC 10/30/15

Order Id: 66790  
Epogen 5500 units IV Push 3x qw  
Start: 09/16/15 DC 10/02/15

Order Id: 66407  
Epogen 4500 units IV Push 3x qw  
Start: 08/26/15 DC 09/16/15

Order Id: 65692  
Venofenr 50.0 mg IV Push qw  
Start: 07/16/15 DC

	Wk Ending 11/07	Wk Ending 10/27	Wk Ending 10/24	Wk Ending 10/17	Wk Ending 10/10	Wk Ending 10/03	Wk Ending 09/28	Wk Ending 09/19	Wk Ending 09/12	First Prior	Second Prior
<b>Osteodystrophy</b>											
PHOSPHORUS					3.2 P				5.2 H	4.8 08/11	5.1 07/16
CALCIUM CORRECTED					9.9	9.9			11.1 H	10.0 08/11	9.3 07/16
CALCIUM					9.8	9.9			11.1 H	10.0 08/11	9.3 07/16
CALPHOS PRODUCT					51.8 H				57.7 H	48.0 08/11	47.4 07/16
CALPHOS CORRECTED					51.8 H				57.7 H	48.0 08/11	47.4 07/16
PTH Intact					141 H				197 H	172 08/11	181 07/16
ALK PHOS					179 H						

Medication Given	Wk Ending 11/07	Wk Ending 10/27	Wk Ending 10/24	Wk Ending 10/17	Wk Ending 10/10	Wk Ending 10/03	Wk Ending 09/28	Wk Ending 09/19	Wk Ending 09/12
Hectorol (mcg)					1.5 Tu				1.5 Tu
					1 Th				1.5 Th
									1.5 Sa

**Med Order History**

Order Id: 66801  
Hectorol 1.0 mcg IV Push 3x qw  
Start: 09/16/15 DC 09/17/15

Order Id: 66796  
Hectorol 1.0 mcg IV Push 3x qw  
Start: 09/16/15 DC 09/17/15

Order Id: 64086  
Hectorol 1.5 mcg IV Push 3x qw  
Start: 04/09/15 DC 09/16/15

**Home Meds**

Order Id: 67452  
Sensipar Take 30mg by mouth daily  
Start: 10/27/15 DC

Order Id: 59096  
Remisia 800mg Tablet 3 tabs per meal and 2 with snack (P's)  
Start: 05/02/14 DC

Order Id: 56046  
Sensipar 60mg daily per pharmacy  
Start: 11/05/13 DC 10/27/15

Nutrition/Metabolic	Wk Ending 11/07	Wk Ending 10/27	Wk Ending 10/24	Wk Ending 10/17	Wk Ending 10/10	Wk Ending 10/03	Wk Ending 09/28	Wk Ending 09/19	Wk Ending 09/12	First Prior	Second Prior
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**Overall Patient Assessment**

Kt/V Satisfactory | Kt/V Dissatisfactory

**BP & Fluid Management**

Tx DATE	01/25/2014	01/23/2014	01/21/2014	01/18/2014	01/16/2014	01/14/2014
Standing						
Sitting						
Systolic						
Diastolic						
Lowest						
BP						
Pred BP	121/55	110/71	116/72	142/76	139/66	110/54
Post BP	145/64	146/72	142/76	139/66	127/69	131/68
Lowest BP	100/68	118/71	113/50	119/47	106/49	115/62
Weight						
Interdialytic						
Gain						
Target Weight						
Weight Kg	62.6	64.2	62.3	65	62.2	64.3
ICW Kg	62.6	64.2	62.3	65	62.2	64.3
TARGET Kg	62.6	64.2	62.3	65	62.2	64.3
Duration						
Minutes	224	226	224	224	223	222
DIALYSATE °C	36.3	37	36.7	37	36.7	36.8

**Blood Pressure** | **Achieving Dry Weight** | **Acceptable Interdialytic Weight Gain**

Low | Controlled | High | Yes | No | Yes | No

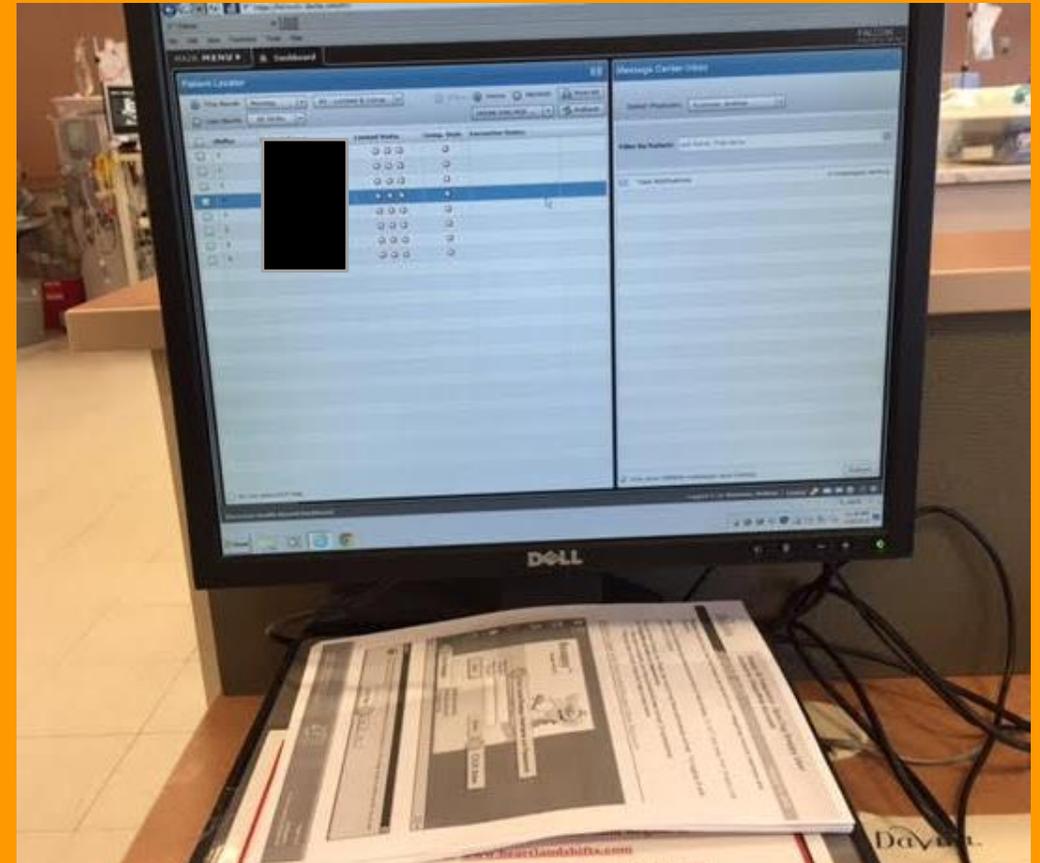
**Nutritional Status**

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# So Where Do We Document?

Varies by the health care system

- Handwritten notes
- Some groups will use EPIC/local EHR
- Many groups use EHR of DaVita or Fresenius –  
**NOT VISIBLE TO PCP'S**



# Gaps In Care: Communication Barriers

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- ❖ **Redundancy in labs**
- ❖ **Redundancy in medical management**
- ❖ **Management of key medical issues and comorbidities are presumed to be the other's responsibility**
- ❖ **"Mixed" messages (e.g. diet, blood pressure, medications, care plan)**
- ❖ **Medication error! Especially between the dialysis unit and hospital admission and discharge ("cyclic" problem)**
- ❖ **Difficulty integrating multiple providers (e.g. primary care, cardiology, endocrinology, infectious disease, heme/onc, pulmonology, surgery, etc.)**
- ❖ **Difficulty integrating palliative care**

Actually,

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**The Doors are Wide Open**

# Getting Info (“Breaking the Barrier”)

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**So how can we talk?**

- **Not always connected by EHR (e.g. EPIC)**
- **Conversation is always better anyway!**

**Call the dialysis unit**

- <http://www.dialysisunits.com>
- **Numbers for nephrologist**
- **Labs (ESKD and otherwise)**
- **Is the patient showing up for dialysis**
- **Dietary adherence**
- **Blood pressures, weights, episodes of hypotension**
- **Medication reconciliation**
- **Psychosocial issues – unit SW**

# PCP Role: A Member of the Core Team

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Diabetes management

Blood pressure co-management

Health care screenings

Pertinent referrals

Pain issues

Acute medical issues (co-management)

Psychosocial care

End of life care

# Self Assessment Questions

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1. Benefits of preserving residual kidney function in dialysis patients include:

- A. Less dietary restriction
- B. Better quality of life
- C. Better survival
- D. \*All of the above\*

Rationale: residual kidney function contributes to removal of potential uremic toxins, helps regulate fluid and electrolyte imbalance, and may enhance nutritional status and QOL.

2. It is not necessary to avoid nephrotoxins, such as NSAIDs, if patient is on dialysis and has residual kidney function.

True

\*False\*

Rationale - As indicated above, residual kidney should be maintained if possible, thus the importance of avoiding nephrotoxins as part of this strategy.

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# Questions and Answers

# Additional Resources

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National Kidney Foundation- Dialysis Patient Bill of Rights

[https://www.kidney.org/sites/default/files/11-65-1639\\_dialysisbillrights.pdf](https://www.kidney.org/sites/default/files/11-65-1639_dialysisbillrights.pdf)

Dialysis Outcomes and Practice Patterns Study (DOPPS): <http://www.dopps.org>