



# On-Site Home Hemodialysis (HHD) in Skilled Nursing Facilities

February 18, 2021



# Housekeeping Items

- All participants in listen-only mode
- Use the chat or Q&A box for questions or comments
- Hover over the bottom of your screen and click the circle with the speech bubble to locate the chat box



# Continuing Education

- To complete the course, the learner must:
  - Watch the 60-minute webinar (live or recorded)
  - Complete post-test questions & evaluation
- 1.25 contact hours approved for Nursing
  - Quality Insights is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation
- Quality Insights has no conflict of interest, the speaker does have a conflict of interest, but measures taken to avoid the conflict



# Learning Outcomes

- After this course, the learner will:
  - Explain the benefits of on-site dialysis for your residents and your facility
  - Describe the roles and responsibilities for your facility and the dialysis provider
  - Discuss key considerations for your facility as to if and how on-site dialysis is pursued



A woman with dark curly hair, wearing glasses and a blue denim jacket over an orange shirt, is smiling and looking to the right. The background is a bright kitchen with a window showing greenery and a shelf with jars.

## On-Site Home Hemodialysis (HHD) in Skilled Nursing Facilities

**nxSTAGE**  
BY FRESenius MEDICAL CARE

# Agenda

1



Skilled Nursing Facility (SNF) Existing Challenges with Dialysis Residents

2



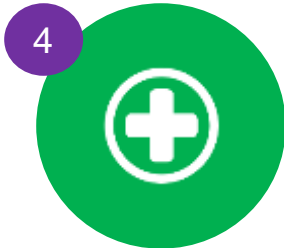
Impact of On-Site Home Hemodialysis (HHD) & Case Study

3



Obstacles That Previously Prevented Implementation of On-Site HHD

4



Case Study during COVID-19

5



Economic Factors

6



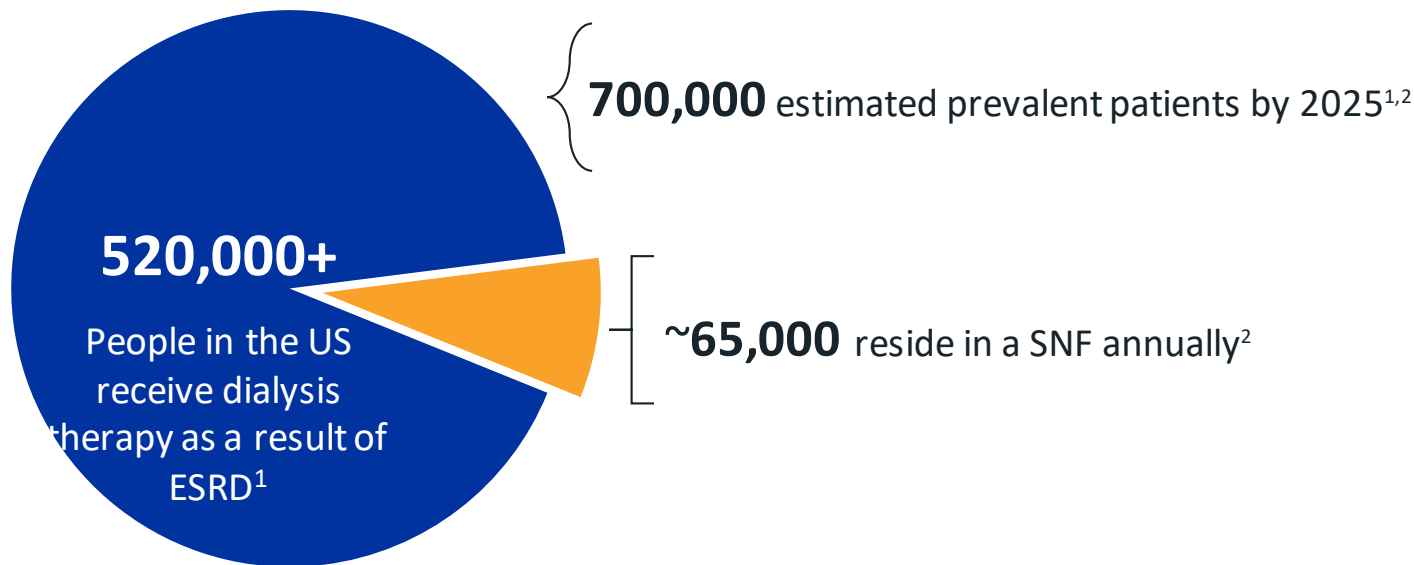
Responsibilities & Considerations for Implementing a Program

# One Patient's Off-Site Dialysis Experience<sup>1</sup>

- ▶ Been on dialysis since 1993
- ▶ Dialysis journey includes:
  - In-center hemodialysis
  - Peritoneal Dialysis (PD)
  - Transplant
  - SNF On-Site Home Hemodialysis (HHD)
  - HHD at home
- ▶ Experience of living in a SNF for 4 months
  - Transported 3x/week to a dialysis center
  - She then had the opportunity to dialyze on-site
- ▶ Perspective on COVID-19



# ESRD Nursing Home Patient Population



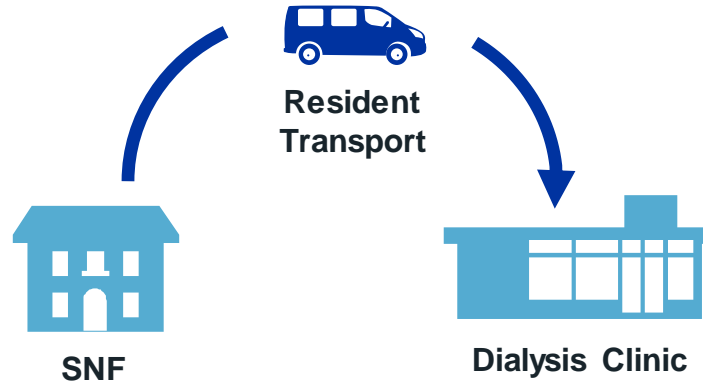
**“As the average age of the US population increases, the number of older patients on dialysis, and – in particular – nursing home patients on dialysis is likely to continue to increase.”<sup>3</sup>**



# Challenges of Dialysis: Transportation<sup>1</sup>

Transportation can be physically burdensome on residents, logistically time-consuming for staff, and a big expense for the SNF

## Residents are Transported from SNF to Dialysis Clinic



### Leaving the SNF can be grueling for residents

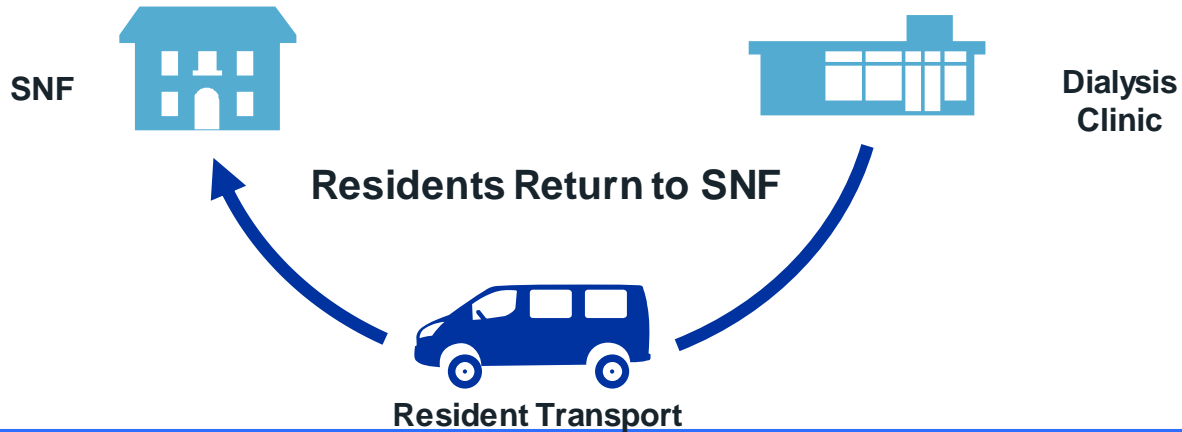
- *“These are really sick residents, and exposing them to winter weather, rain, or heat three times a week, honestly I think it takes a toll on their health.”*

### SNFs bear the burden of the time and costs associated with transportation

- *“Every time a resident goes out we pay for the van service. It’s \$125 round trip each session, so it’s \$375 in additional transportation costs each week for a resident requiring dialysis.”*

# Challenges of Dialysis: Impact on Clinical Outcomes

Conventional hemodialysis (3x/week) is associated with longer post-dialysis recovery times.<sup>2</sup>



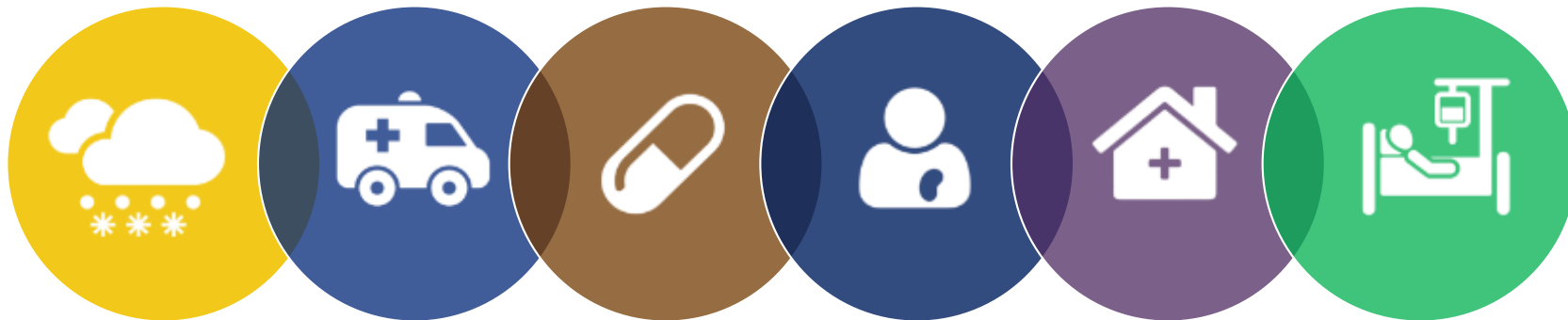
## Exhaustion post-treatment affects quality of recovery and outcomes<sup>1</sup>

- *“We try to get therapy in before dialysis appointments, because it’s impossible to participate after. Scheduling around all of this though, it’s a challenge, sometimes it doesn’t work out.”*

## More frequent treatment, which could improve clinical outcomes, is less common<sup>1</sup>

- *“These residents used to be very difficult to rehab, but providing home dialysis five days a week is **much less harsh**. We start the machines at 6 AM, and by the time they are done with their breakfast, they are ready for therapy.”*

# Potential Challenges of Off-Site Dialysis<sup>1</sup>



Discomfort & potential patient injury due to inclement weather

Expensive transportation costs

Disruption to care (rehab, meds, meals, etc.)

Patients largely limited to 3x/week therapy

Potential breakdown in coordination of care

Patient may be exposed to viruses and other illnesses

# Potential Impact of On-Site HHD in SNFs<sup>1,2</sup>

## Patients

- May eliminate the need to be transported to a dialysis center for treatments
- Minimizes risk of exposure to viruses and other illnesses
- Better able to maintain rehabilitation, medical appointment, meal, and activity schedules
- Increased access to flexible dialysis options, including more frequent hemodialysis\*

## Skilled Nursing Facility\*\*

- Allows residents to maintain care, rehabilitation, medication, appointment, meal & social activity schedules
- Decreases dialysis-related transportation expenses
- Differentiates SNF services and may increase occupancy
- Mitigates risk of slip, fall or other medical incident after treatment or during transport back to SNF

\*\*Patients and providers are encouraged to contact their state regulators to discuss state-specific regulations that may impact dialysis in the Skilled Nursing Facility setting.

\*Not everyone will experience the reported benefits of more frequent home hemodialysis. When vascular access is exposed to more frequent use, infection of the site, and other access related complications may also be potential risks.

**See full fair balance  
on slide 22**

# Case Study: One Nursing Home's Experience during COVID-19 Pandemic<sup>1</sup>

## Prior to on-site HHD program

- Dialysis residents transported to different dialysis centers based on COVID-19 diagnosis, introducing operational challenges
- Risk of exposure when transporting residents
- Several residents (initially COVID-19 negative) were transported to hospital and returned COVID-19 positive

## With an on-site HHD program

- Contained the spread of COVID-19 among dialysis residents
- Able to keep residents on-site for dialysis treatment
- By reducing transportation time, residents had more time to attend activities

# Case Study: Home Hemodialysis Considerations in a SNF Environment<sup>1</sup>

1. Plumbing & electrical wiring
2. Water utility costs
3. Potential maintenance of RO water treatment
4. Size & portability of machine



NxStage VersiHD on PureFlow SL ultrapure water and dialysate preparation system

An example of a den set up:



# Case Study: One Center's Impact of On-Site HHD<sup>1</sup>



Increase in referrals



Higher acuity residents generate more revenue in PDPM model



Reduction of transportation costs



Improvement in resident experience

Reference 1: McKnights Webinar, "Considerations for on-site dialysis in a Skilled Nursing Facility", September 23<sup>rd</sup>, 2020

\*Not all Skilled Nursing Facilities may experience the same benefits

# Barriers to implementing On-Site HHD are falling\*

- Uncertain regulatory environment
- Home dialysis reimbursement does not cover staff-assisted treatments
- Unsustainable contracting models between dialysis providers and SNFs
- Conventional dialysis options require substantial infrastructure investment for SNF
- Not all SNFs are capable/appropriate for On-Site Home Hemodialysis
- SNF interest but lack of dialysis provider interest
- Dialysis providers focus on in-center
- Lack of clarity on reimbursement for MFT dialysis treatments



# Factors Needed to Enable Dialysis in Skilled Nursing Facilities

## Nursing Homes

## Dialysis Providers

**Reimbursement Structure**

Nursing Home Reimbursement Aligned to Patient Acuity<sup>1</sup>

Patient Driven Payment Model (PDPM)

Government's Desire to Increase Home Therapies

Dialysis Providers Incentivized to Grow Home Hemodialysis<sup>3</sup>

**CMS Guidance**

Clarification Surrounding Regulatory Requirements for Performing On-Site Hemodialysis<sup>2</sup>

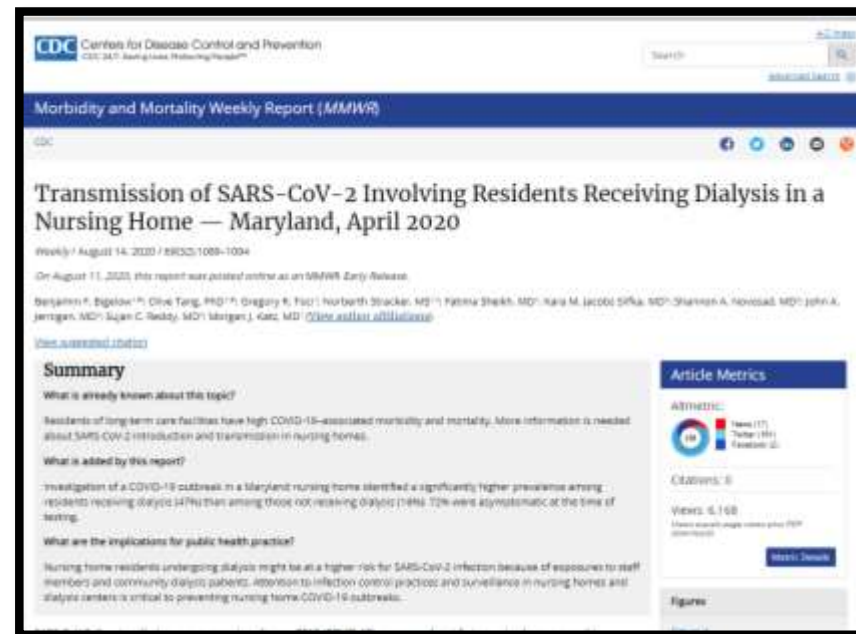
Updated CMS Guidance

MAC LCDs on More Frequent Dialysis

Clarification Surrounding CMS Requirements for More Frequent Dialysis (5-6 Treatments Per Week)<sup>4</sup>

# Case Study: Managing Dialysis Residents During the COVID-19 Pandemic<sup>1</sup>

- Experience of placing dialysis residents in SNFs during COVID-19 outbreak
- Strategies for success
- COVID-19 positive results in residents were strongly correlated with those who received off-site, in-center dialysis (47%) than among those not receiving dialysis (16%)<sup>1</sup>



\*Dialysis may not be the only cause for this correlation

# Studies & Observations of More Frequent Therapy

Residents performing home hemodialysis in a Skilled Nursing Facility more frequently – >3 days a week – have shown **better survival and hospitalization rate**<sup>1</sup>. In addition, more frequent hemodialysis in the general population is associated with:



Less Risk of  
Cardiac-Related  
Hospitalizations<sup>2</sup>



Improved Post-  
Dialysis Recovery  
Time<sup>3</sup>



More Energy &  
Vitality<sup>4</sup>



Reduced  
Antihypertensive  
Medications<sup>5</sup>



Greater Survival<sup>6</sup>

\*Not everyone will experience the reported benefits of more frequent hemodialysis.

1. Weinhandl E, Hocking K, Markovich S, Vavrinchik S, Collins A. Increased Hemodialysis Frequency is Associated With Improved Clinical Outcomes Among Patients in Skilled Nursing Facilities. 2018.
2. Weinhandl ED, Lie J, Gilbertson DT, Arneson TJ, Collins AJ. Hospitalization in daily home hemodialysis and matched thrice-weekly in-center hemodialysis patients. J Am Soc Nephrol. 2015;65(1):98-108.
3. Jaber BL, Schiller B, Burkart JM, et al. Impact of short daily hemodialysis on restless legs symptoms and sleep disturbances. Clin J Am Soc Nephrol. 2011;6(5):1049-1056.
4. Finkelstein FO, Schiller B, Daoui R, et al. At-home short daily hemodialysis improves the long-term health-related quality of life. Kidney Int. 2012;82(5): 561-569.
5. FHN Trial Group. In-center hemodialysis six times per week versus three times per week. N Engl J Med. 2010;363(24): 2287-2300.
6. Weinhandl ED, Lie J, Gilbertson DT, Arneson TJ, Collins AJ. Survival in daily home hemodialysis and matched thrice-weekly in-center hemodialysis patients. J Am Soc Nephrol. 2012;23(5):895-904.

# Potential Benefits of **More Frequent HD** in the general population

**Individualized therapy** to meet patients' **unique clinical needs** with more frequent HHD (5-6 days/week) as compared to conventional 3 times/week in-center hemodialysis

- 17% ↓ CV Hospitalizations<sup>1</sup>
- 36% ↓ Prescribed BP meds<sup>2</sup>
- 20% ↓ Hypotensive episodes<sup>6</sup>
- 20% ↓ Phosphate binder dose<sup>4</sup>

**Better Clinical Outcomes**



58% vs. 40%  
5-yr rates<sup>5,6</sup>

**Improved Survival**



87% Shorter Post-Dialysis Recovery Time<sup>7</sup>

**Improved Quality of Life**

# Improvement in Recovery Time with **More Frequent HD** in the general population<sup>1</sup>

**87%** average improvement in post-dialysis RECOVERY time with **more frequent hemodialysis**

Average Recovery Time  
**3 times / week**  
**in-center**



**8 Hours**  
of recovery time

Average Recovery Time  
**5-6 times / week**  
**home hemodialysis**



**1 Hour**  
of recovery time

References 1. Jaber BL, Lee Y, Collins AJ, et al. Effect of daily hemodialysis on depressive symptoms and post dialysis recovery time: interim report from the FREEDOM (Following Rehabilitation, Economics and Everyday-Dialysis Outcome Measurements) Study. Am J Kidney Dis. 2010;56(3):531-539.

\*Not everyone will experience the reported benefits of more frequent home hemodialysis. When vascular access is exposed to more frequent use, infection of the site, and other access related complications may also be potential risks

# Collaborative Service Model

It's important to highlight the general areas of responsibility for both a dialysis provider and the SNF when caring for a resident requiring dialysis residing in a SNF<sup>1</sup>



## Dialysis Provider Responsibilities

- Oversight of the home dialysis program (Med Director, Nurse Manager, etc..)
- Dialysis equipment and supplies
- Medications and labs associated with dialysis
- Dialysis billing and reimbursement associated with any home dialysis treatment



## SNF Responsibilities

- Dedicated areas for dialysis
  - Plumbing and electrical wiring
- Costs of basic utilities (water & electricity)
- Dedicated and secure areas for equipment, supplies and medication
- Ability to receive and handle supplies delivered by courier
- Costs associated with staff assisted dialysis

# Collaborative Service Model

It's important to highlight the general areas of responsibility for both a dialysis provider and the SNF when caring for a resident requiring dialysis residing in a SNF<sup>1</sup>



## AREAS OF COLLABORATION

### Dialysis Provider Responsibilities

- Oversight of the home dialysis program (Med Director, Nurse Manager)
- Dialysis equipment and supplies
- Medications and labs associated with dialysis
- Dialysis billing and reimbursement associated with any home dialysis

- Policies and procedures – e.g. emergency planning, infection control
- Joint patient care plans
- Caregiver and staffing

**CMS requires a formal coordination of care agreement between the SNF and the dialysis provider, when ESRD patients are residents in the SNF.**

### SNF Responsibilities

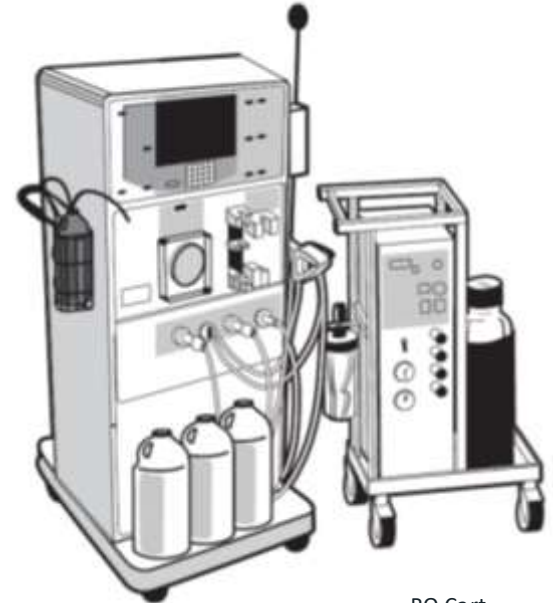
- Home dialysis program
- Electrical wiring
- Water and electricity (water & electricity)
- Dedicated storage areas for equipment, supplies and medication
- Transport and handling of supplies
- Courier services
- Billing associated with staff assisted dialysis

# Home Hemodialysis Equipment Considerations

- 1 Capital costs associated with infrastructural modifications (plumbing and electrical)
- 2 Need for disinfection of equipment
- 3 Maintenance associated with water purification
- 4 Utility Costs
- 5 Treatment and dialysate space
- 6 Supply Costs



NxStage HHD system and PureFlow SL™ ultrapure water and dialysate preparation system



Conventional HD System

RO Cart



# SNFs That May Find On-Site HHD Most Appealing<sup>1</sup>

SNFs that possess at least one of the characteristics below may find On-Site Home Hemodialysis most appealing to incorporate as a service offering:

- ✓ **Part of a multi-SNF chain**
- ✓ **Large dialysis census (>6)**
- ✓ **Large total bed count (>150)**
- ✓ **High short-term stay occupancy (>50% of total)**
- ✓ **High transportation costs**
- ✓ **Interest in increasing occupancy of higher acuity patient population**

## Risks & Responsibilities

**Patients and providers should review the following information carefully to decide whether home hemodialysis with NxStage systems is right for them.**

Users may not experience the reported benefits of home, more frequent or nocturnal hemodialysis with the NxStage systems.

The NxStage systems require a prescription for use.

If a doctor prescribes more frequent home hemodialysis, vascular access is exposed to more frequent use which may lead to access related complications, including infection of the site. Doctors should evaluate the medical necessity of more frequent treatments and discuss the risks and benefits of more frequent therapy with users.

If a doctor prescribes “nocturnal” home hemodialysis at night while the user is sleeping, risks increase due to the length of treatment time and slower blood flow, including, among other things, risks of blood clotting.

Patients and providers are encouraged to contact their state regulators to discuss state-specific regulations that may impact dialysis in the Skilled Nursing Facility setting.

# References

- 1 McKnights Webinar, “Considerations for on-site dialysis in a Skilled Nursing Facility”, September 23<sup>rd</sup>, 2020
- 2 Weinhandl ED et al. Hospitalization in Daily Home Hemodialysis and Matched Thrice-Weekly In-Center Hemodialysis Patients. *Am J Kidney Dis.* 2015 Jan;65(1):98-108.
- 3 Kotanko P, et al. Effects of frequent hemodialysis on blood pressure: Results from the randomized frequent hemodialysis network trials. *Hemodial Int.* 2015 Jul;19(3):386-401. doi: 10.1111/hdi.12255.
- 4 FHN Trial Group, Chertow, G.M., Levin, N.W., Beck, G.J. et al. In-center hemodialysis six times per week versus three times per week. *N Engl J Med.* 2010; 363: 2287–2300
- 5 Morfin, J.A., Fluck, R.J., Weinhandl, E.D., Kansal, S., McCullough, P.A., and Komenda, P. Intensive hemodialysis and treatment complications and tolerability. *Am J Kidney Dis.* 2016; 68: S43–S50.
- 6 U.S. Renal Data System, *USRDS 2015 Annual Data Report: Table 6.3. Adjusted survival (%) by (a) treatment modality and incident cohort year (year of ESRD onset), and (b) age, sex, race, and primary cause of ESRD, for ESRD patients in the 2008 incident cohort (initiating ESRD treatment in 2008)*
- 7 Ad hoc analysis of data on file vs. USRDS data.
- 8 Jaber, B.L., Lee, Y., Collins, A.J. et al. Effect of daily hemodialysis on depressive symptoms and postdialysis recovery time: interim report from the FREEDOM (Following Rehabilitation, Economics and Everyday-Dialysis Outcome Measurements) Study. *Am J Kidney Dis.* 2010; 56: 531–539.



## QUESTIONS?

FOR MORE INFORMATION,  
PLEASE VISIT:

[WWW.NXSTAGE.COM/SNF](http://WWW.NXSTAGE.COM/SNF)



350 Merrimack Street • Lawrence, MA 01843 • [www.nxstage.com](http://www.nxstage.com)

© 2021 Fresenius Medical Care. All Rights Reserved. Fresenius Medical Care and NxStage are trademarks of Fresenius Medical Care Holdings, Inc. or its affiliated companies. All other trademarks are the property of their respective owners. APM4124 Rev A



# Contact Us



- Penny Imes – [pimes@qualityinsights.org](mailto:pimes@qualityinsights.org)
- Dawn Strawser – [dstrawser@qualityinsights.org](mailto:dstrawser@qualityinsights.org)
- Patty Austin – [paustin@qualityinsights.org](mailto:paustin@qualityinsights.org)
- Cristen Carson – [ccarson@qualityinsights.org](mailto:ccarson@qualityinsights.org)

**[www.qualityinsights-qin.org](http://www.qualityinsights-qin.org)**

This material was prepared by Quality Insights, the Medicare Quality Innovation Network-Quality Improvement Organization for Pennsylvania and West Virginia under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. Publication number 12SOW-QI-NH-021721

