Acknowledgement

The Transitional Dialysis Care (TDC) Demonstration Initiative, facilitated by NxStage Medical, worked in collaboration to create the content incorporated in this Transitional Dialysis Care Operational Guidance resource.

Members of the TDC Demonstration Initiative include:

- Robert Lockridge, MD
- Marsha Dodd
- Debbie Cote
- Brendan Bowman, MD
- Deb Siler
- José Morfin, MD
- Stacy Cigliana

*Robert Lockridge, MD is a paid speaker on behalf of NxStage Medical.*
*José Morfin is a member of the NxStage Scientific Advisory Board and a paid speaker on behalf of NxStage Medical.*
*Stacy Cigliana is an employee of NxStage Kidney Care.*

Transitional Dialysis Care (TDC) is a patient-centric approach to gently easing a patient into dialysis, and addressing their clinical and emotional needs while in transition. While the clinical benefits to patients may be clear, you may be in search of operational guidance for how to implement a TDC Unit.

This TDC Operational Guidance Resource was built based on the experiences and best practices of several thought-leaders in the renal industry that have either implemented or are in the process of implementing a TDC Unit at their center.

This Transitional Dialysis Care Operational Guidance Resource details:
- Clinical and Economic Considerations
- Implementation Strategies
- Infrastructure and Logistical Planning
- Staffing and Internal TDC Training
- Patient Education
- Marketing Considerations
What are the Core Elements of a TDC Unit?

- All appropriate patients start in a TDC Unit
  - New to dialysis, failed PD, or transplant

- More frequent treatments prescribed to stabilize patients
  (e.g., No 2-Day Treatment Gap)

- Existing in-center staff and infrastructure utilized

- Thorough education on all renal replacement options
  provided to patients, including transplantation

- Treatments performed using a home hemodialysis system
  (such as the NxStage system)

Within this TDC Operational Guidance resource, there are some Transitional Dialysis Care related documents that can be downloaded.

In order to download these documents, you must have internet access as the documents are stored in a resource library webpage.

Optionally, you can download all resources packaged into a single folder via the resource library webpage to ensure you have everything you need to implement your TDC Unit.

Click to download all TDC Resources
Why Transitional Dialysis Care

Designed to:

- Ease patients into dialysis
  - TDC offers patients in transition:
    - Time to recover medically
    - Time to adjust emotionally
    - Time to receive modality education of their dialysis options
    - Time to choose the modality that fits their unique clinical and life needs
- Opportunity for patients to experience treatments with a home hemodialysis device.

References:
The “Heightened” Period: First 90 Days

- The first two weeks of dialysis are associated with a heightened mortality and hospitalization risk.
- In the second week of being on dialysis, an incident patient is 2.86 times more likely to expire than a patient who survived the first year of dialysis.
- In the first week of being on dialysis, an incident patient is 2 times more likely to be hospitalized than a patient who survived the first year of dialysis.

References:

Patients Want to be Informed

Patients want to be informed on modality options¹

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side effects</td>
<td>96%</td>
</tr>
<tr>
<td>Quality of life</td>
<td>99%</td>
</tr>
<tr>
<td>implications</td>
<td></td>
</tr>
<tr>
<td>Bodily Impact</td>
<td>97%</td>
</tr>
<tr>
<td>Survival data</td>
<td>97%</td>
</tr>
</tbody>
</table>

References:
Fluid Management and Cardiovascular Outcomes

- Cardiovascular Disease Causes ~50% of incident patient deaths
- Effective fluid management is associated with better cardiovascular outcomes
- Effectiveness varies by modality

References:

Admission Rates in the 1st Year, By Month

Increases in hospitalization days is also seen in:
- Acute Coronary Care
- Arrhythmia
- Heart failure/Cardiomyopathy
- Fluid overload/Pulmonary Edema

References:
1. Peer Report: Dialysis Care & Outcomes in the US, 2014
Clinical Benefits of More Frequent HHD

Compared to conventional three-times-weekly therapy, more frequent hemodialysis may provide:

- Less stress on the heart
- Better blood pressure control with fewer medications
- Quicker recovery time after treatment
- More energy
- Improved sleep quality
- Liberalized diet and fluid intake restrictions

Cardiovascular Benefits of More Frequent Therapy

More frequent dialysis can help manage fluid fluctuations

- Less stress on the heart
- Better blood pressure control with fewer medications

References:
Economic Considerations

The below financial considerations are important to keep in mind when trying to assess the economic impact of a TDC Unit compared to traditional In Center.

New ESRD patients that start each month

Medicare/Commercial payer mix for home and in-center patients

Medicare ESRD Adjuster for first 120 days (1.327 x bundle)

TDC patients are more likely to choose a home modality

~$96 Training Add-On for Medicare patients that choose home


5-Year Survival By Modality

- In-Center HD: 40% 5-year survival
  - >420,000 Conventional HD Patients

- Peritoneal Dialysis: 50% 5-year survival
  - >45,000 PD Patients

- More frequent HHD is associated with better 5-year relative survival

References: 5. U.S. Renal Data System. USRDS 2015 Annual Data Report: Table 6.3. Adjusted survival by treatment modality and incident cohort year of ESRD onset, and by age, sex, race, and primary cause of ESRD, for ESRD patients in the 2008 incident cohort initiating ESRD treatment in 2006. Abbreviations: ESRD, end-stage renal disease; TDC, tele-dialysis center.

Pros and Cons of TDC

There are some potential pros and cons of implementing a TDC Unit compared to traditional in-center:

POTENTIAL PROS
- Increased Revenue
- Improved Gross Margin*
- Increased home census
- Minimized need to build new clinics
- Reduced costs as a result of improved quality of care

POTENTIAL CONS
- Higher Treatment Costs
- Initial increase in labor to provide patient education

*Total gross margin is often higher over time with Transitional Dialysis Care because more total treatments are billed, overcoming the increased cost of supplies.

Assess all operational, staffing, and billing factors when comparing a TDC and traditional in-center model.
Roles of the TDC Planning Team

- **In Center RN** – Oversees TDC treatments, assesses patients (pre and post treatment), coordinates vascular access plan, administers medication and provides education to patients, responsible for the schedule of all.
- **PCT / LPN / LVN** – Performs the treatments, troubleshoot alarms, and reinforce education provided by the RN.
- **Home Therapy RN** – Provides in-depth PD and HHD modality education.
- **Social Worker** – Shares relevant financial information with patients regarding their insurance entitlements as well as other economic aspects related to dialysis, assists in transplant referral as needed, and provides emotional support to patients and their families.
- **Dietician** – Educates patients on their dietary and fluid requirements for each modality.
- **Physician** – Prescribes therapy, adjusts medications and treatments based on patient needs, reinforces education provided by care team, informs patients of survival, data, and risks of each modality.
- **Patient Financial Advisor** – Advises patient on economic related topics such as insurance, Medicare/Medicaid regulations (Can be done by Social Worker if necessary).

Creating a TDC Planning Team

- The TDC Champion plays an important role in creating a TDC Planning Team.
- The TDC Champion should engage key members of the dialysis center to participate in implementation planning.
- Below are recommendations for center team members that should be part of the TDC Planning Team:
  - Physician Champion
  - Nurse Overseeing TDC Unit
  - Patient Care Techs (PCTs) / Licensed Practical Nurse (LPN)
  - Social Worker
  - Dietician
  - Patient Financial Advisor
  - Home Nurses (HHD & PD, if applicable)
  - Provider Cost Analysis Personnel
  - Materials Management / Supply Chain Representative
  - In-Center Operations Representative
Goal Setting

To implement a successful TDC Unit, it’s important to determine your center’s goals before the implementation process begins.

**Examples of Goals**
- Achieve patient blood pressure control by end of the first month on therapy
- Reduce patient mortality and hospitalizations
- Reduce patient treatment recovery time by end of the first month
- Increase home penetration
- Better educate patients on dialysis modality choices
- Increase % of patients on the active transplant list
- Differentiate services to potentially increase referral stream
- Reduce patient LVH by end of first year on therapy

Once the goals are established, the TDC Champion will need to collaborate with the administration personnel to ensure there is alignment on business goals and objectives.

**Implementation Strategies**

 roles of the TDC Planning Team (cont)

- **Provider Cost Analysis Personnel** – Responsible for ensuring a financial analysis comparing the flow of patients in a TDC model vs a traditional in center model is completed
- **Materials Management / Supply Chain Representative** – Ensures all TDC equipment and supplies that will be required by the center to order are setup within the center’s ordering system
- **In Center Operations Representative** – Ensures both TDC Unit and In Center are run efficiently and optimizes capacity

**Internal Alignment**

- The TDC Champion should ensure that everyone on the TDC Planning Team understands the intent and framework of a TDC Unit.
- Anyone on the TDC Planning Team that is relatively unfamiliar with what a TDC Unit entails should be presented with the concept of TDC.
- A recommended best practice to keep everyone on task is for the TDC Planning Team to meet on a weekly basis and to establish a target start date to work toward.
Principles of Patient-Centered Care

Picker's Eight Principles of Patient Centered Care

- Respect for patients' preferences
- Coordination and integration of care
- Information and education
- Physical comfort
- Emotional support
- Involvement of family and friends
- Continuity and transition
- Access to care


Strategies for Gaining Buy-in

Organizational change often runs into resistance due to different assessments or opinions, misunderstandings, or low-tolerance for change.

- Dealing with resistance, education, and communication are key
  - Provide information and education about TDC through supportive literature or study data (Refer to pages 7 & 8)
- Make sure to allow and encourage involvement and participation
  - To encourage adoption, include the wider team and listen to any concerns or arguments against the change
- Facilitate support
  - Change can be difficult for many people so make sure to facilitate support by offering additional education or team meetings to talk through potential concerns or problem areas.
Attaining Nurse Buy-in

- Based on the patient selection of dialysis modalities from centers that have implemented TDC Units, it is likely your home program will grow.
- It’s important to consider as the home program grows, the home training nurses’ workload will expand.
- Investing in the appropriate resources ensures home programs are staffed to provide quality training and care.
- It is recommended to engage the nursing team early in the TDC implementation process and make them feel more as an owner of the program rather than just taking orders from management.
- Potential ways to maximize job satisfaction include:
  - Consider hiring an additional nurse to account for additional workload.
  - Provide appropriate administrative resources and support.

Achieving Physician Buy-in

- To implement an effective TDC Unit, it is important that all physicians support the concept and center goals.
- It helps to have a “Physician Champion” who is enthusiastic about TDC and motivated to refer patients to the program.
- Have the Physician Champion present the concept and goals of the TDC Unit to all physicians who refer patients to the clinic.
  - It is recommended to consistently follow-up with these physicians.
- If there is pushback about starting patients in the TDC Unit, try using the following question as discussion items:
  - Which of your patients would benefit from:
    - Better ultrafiltration management at the start of dialysis?\(^{1-4}\)
    - Thorough education of all dialysis modality options?
    - Making an informed choice on the dialysis modality that best fits their life goals?

References:
Other Buy-in Considerations

- If you are part of a LDO, it’s vital to reach out to the regional directors and present the concept and goals of a TDC Unit to gain their support.
- In addition, if you are part of a LDO, it is recommended to achieve buy-in from other important stakeholders such as renal care coordinators and kidney care advocates.

External Healthcare Partner Buy-in

- It’s also essential to educate external healthcare partners about TDC and its benefits.
- Provide information about the TDC Unit and benefits to ESRD patients by educating the following:
  - Hospital Discharge Planners & Social Workers
  - Primary Care Physicians
  - Acute Dialysis Staff
- Inform the center’s business development team and explain how the TDC Unit may impact new patients.
TDC Implementation Timeline

Working collaboratively with your center team, it's very important to agree on an initial TDC Kickoff Date that your first patient will begin in order to determine the dates that key milestones must be completed by.

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Regulatory Considerations

- When implementing a TDC Unit, CMS Certifications should be considered.
- If you have licensure or certification questions, it is recommended to reach out to your regional director and/or state for guidance.
Location of TDC Unit

- Based on best practices, the 2 most common models for a TDC Unit are:
  - The In-center floor
  - A stand-alone area affiliated with a Home Training Unit

- When implementing a TDC Unit, the following should be considered:
  - Capacity of both your In-center and Home Training Units
  - Staff Availability
  - Number of new monthly ESRD patients
  - Number of shifts per day
  - How to best eliminate the 2-day treatment gap with more frequent treatments

For guidance related to certification and regulatory requirements, visit: https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/GuidanceforLawsAndRegulations/Downloads/esrdpgmguidance.pdf

Tracking TDC Clinical and Operational Success

- Prior to your first patient starting in a TDC Unit, think through how you will track your clinical or operational goals

Some examples may include:
  - Mortality & Hospitalization rates of TDC patients vs. In Center patients
  - Patient dialysis modality choice after completing program

Beyond achieving your goals, there are a few other reasons why tracking this data is essential:
  - To evaluate if your TDC Unit is benefiting patients
  - To evaluate trends that your center may need to adjust to
  - To potentially publish a paper in a journal about your TDC Unit
Model #2: Stand-Alone Unit Affiliated with a Home Training Unit

- Several NxStage systems (or other home system) in the stand-alone (or dedicated) area to the home training unit
- Provides more frequent treatments (No 2-day treatment gap)
- PCT or LPN dedicated to treat patients
  > RN provides education
- Several shifts

Model #1: In-Center Floor

- Several NxStage systems (or other home system) on the in-center floor
  > The NxStage HHD system is cleared for use on the in-center floor
- Dedicated square footage for the TDC Unit
- PCT or LPN dedicated to treat patients
- RN provides education
Patient Capacity Planning

- Determine the approximate number of new to dialysis patients as well as failed PD, and transplant patients that start dialysis in your center each month.

  - Emphasis is on eliminating the 2-day treatment gap
    - 4 treatments per week (M, W, F & Sat) or (M, Tue, Thu & Sat)
    - 5 Treatments per week (ex. M, Tue, Thu, Fri, Sat)

- More frequent therapy offers both clinical and quality of life benefits to patients.


Patient Treatment Schedule

- Determine the number of treatments that will be provided per week for each patient
  - Emphasis is on eliminating the 2-day treatment gap
    - 4 treatments per week (M, W, F & Sat) or (M, Tue, Thu & Sat)
    - 5 Treatments per week (ex. M, Tue, Thu, Fri, Sat)
  - More frequent therapy offers both clinical and quality of life benefits to patients.
Supply Order Management

- Work with your home training team to create a supply list
- If using a NxStage system:
  - Determine whether you will be utilizing bagged dialysate or PureFlow
    - If you select to use PureFlow, below are some helpful time-related considerations:
      - A PAK lasts up to 12 weeks depending on incoming water quality
      - It takes 2.5 hours to prime a new PAK
      - It takes 5-7 hours to make a batch depending on the batch size
  - PureFlow requires additional water testing (see Policies & Procedures for additional details)
  - Incorporate the NxStage supply list into your in-center supply order routine
  - Consider the amount of storage space needed to support the number of TDC stations
  - Ask your NxStage Area Manager how a la carte supply pricing and ordering may benefit your center.
  - Check with your corporate office to determine if an agreement may already be in place for a la carte

CMS - Pre-Configured System Guidelines

- Guidance provided on in-center use of preconfigured hemodialysis systems
  - Designed, tested, and validated to yield AAMI quality water and dialysate
  - FDA cleared labeling adhered to for machine use and monitoring of water and dialysate
- For more information on CMS regulations:
NxStage Supply Order Management Policies and Procedures

If using NxStage, below is a template of a TDC Patient Supplies Ordering Policies and Procedures:

3.

NxStage Dialysate Ordering

If using NxStage, below is the catalogue for ordering NxStage dialysate:

APPENDIX A: DIALYSATE CATALOG

Click here to download full document
Supplies Delivery Frequency

- Where you will be storing your equipment and supplies will determine your ordering frequency.
- Based on the number of TDC patients and available storage space you may consider weekly to bi-weekly deliveries (additional fees may apply).

Equipment and Supplies Storage

- It is important to consider where you will store equipment and supplies.
- Ensure the storage area you decide on has enough space to accommodate the amount required.
- If using the NxStage HHD system, consider having a second PureFlow system for each station to provide a second shift.
- Consider a dedicated room for PureFlow.
If using the NxStage system for your TDC Unit as opposed to a traditional in-center machine, you will need to determine how treatments will be documented and ordered by the physician in your electronic medical record.

Consider that in most cases a machine interface to your EMR will not exist.

NxStage treatment prescriptions will contain these therapy elements and should be incorporated into the physician order and the patient's medical record.
Medical Record and Billing Integration (cont’d)

- If using a NxStage system, below is a template of a TDC Treatment Documentation Policy (P&P).

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**Treatment Documentation for Transitional Care**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Supportive Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

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4. Ensure that your physician ordering system can accommodate prescribing with NxStage HHD system in-center floor for the following:

- NxStage HHD system
- Appropriate dialysate
- Sacks vs. bags
- Cartridge type (includes pre-attached dialyzer)
**Service and Repair Plan**

- The NxStage HHD system is cleared for in-center use and services and repairs are done via a system swap.
- Swaps are usually done within 24-48 hours.
  - You may want to consider having additional equipment on-site to ensure no interruption in patient care.
- No biomedical technicians in your facility are required to perform routine preventative maintenance.
- Your biomedical technicians can perform re-deployment procedures as necessary.

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**TDC Ordering & Billing Questions**

Please contact your Director of Operations (DO), Regional Vice President (RVP) or VP of Home Therapy if you have the following questions:

- How do I order TDC treatments with a NxStage system within my electronic medical record?
- How do I bill for treatments on a NxStage system within my electronic medical record?
Transitional Dialysis Care Staffing Requirements

- It is important to assess the time requirements that each team member will need to allocate to the TDC Unit.
- Based on the topics covered within the 4 week “Patient Education Curriculum” section, the following illustrates the time allotment for each team member:

Maintenance Policies and Procedures (P&P)

- If using a NxStage system, below is a template of a TDC Maintenance & Preventative Maintenance P&P:

Click here to download full document
Resource and Staffing Considerations
(Per Patient in Transitional Dialysis Care Unit)

<table>
<thead>
<tr>
<th>Staff Member</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Total</th>
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<tr>
<td>PCT</td>
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<td>30 Min.</td>
<td>15 Min.</td>
<td>1 Hr. &amp; 15 Min.</td>
<td></td>
</tr>
<tr>
<td>In Center RN</td>
<td>55 Min.</td>
<td>3 Hr. &amp; 30 Min.</td>
<td>1 Hr.</td>
<td>30 Min.</td>
<td></td>
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<tr>
<td>Dietitian</td>
<td></td>
<td>1 Hr. &amp; 30 Min.</td>
<td>1 Hr. &amp; 30 Min.</td>
<td>1 Hr. &amp; 30 Min.</td>
<td></td>
</tr>
<tr>
<td>Social Worker</td>
<td>1 Hr. &amp; 25 Min.</td>
<td>30 Min.</td>
<td>30 Min.</td>
<td>2 Hr. &amp; 25 Min.</td>
<td></td>
</tr>
<tr>
<td>Home RN</td>
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<td>2 Hr. &amp; 35 Min.</td>
<td>5 Min.</td>
<td>2 Hr. &amp; 40 Min.</td>
<td></td>
</tr>
<tr>
<td>Physician</td>
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<td></td>
<td>50 Min.</td>
<td></td>
<td>50 Min.</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2 Hr. &amp; 50 Min.</td>
<td>4 Hr. &amp; 30 Min.</td>
<td>4 Hr. &amp; 20 Min.</td>
<td>2 Hr. &amp; 55 Min.</td>
<td>14 Hr. &amp; 55 Min.</td>
</tr>
</tbody>
</table>

Staffing model to educate 4-6 patients for Transitional Dialysis Care is 1 RN to 2 PCTs.

- If a Modality Nurse Educator is on staff, they can provide in-depth education for their area.
- If a Financial Advisor is on staff, they may assume some responsibilities of the social worker.
- If a Transplant Coordinator is on staff, they can assume physician responsibilities for transplant center information.
- If LPNs are on staff, they can assume responsibilities of PCTs.

Labor Considerations for Delivering TDC Treatments

It is recommended that...

- The PCT or LPN perform treatments at a 1 to 3 patient ratio (maximum).
- A RN should oversee all TDC treatments and should be staffed at a 1 to 6 patient ratio (maximum) so that additional patient education can be accommodated.
- Other members of the Interdisciplinary Team (IDT) may assist in patient education as deemed appropriate (see next page for further detail).
Patient HD Prescription for TDC

Based on best practices experienced by members of the TDC Demonstration Initiative, implemented TDC Units, below are suggestions regarding a TDC patient HD prescription:

- Emphasis is on eliminating the 2-day treatment gap
  - 4 treatments per week (M, W, F & Sat) or (M, Tue, Thu & Sat)
  - 5 Treatments per week (ex. M, Tue, Thu, Fri, Sat)
- Perform treatments using the NxStage HHD system (or home machine of choice)
- Standard blood flow at the discretion of physician, based on patient vascular access.
- Time: Approximately three hours per treatment (or between a total of 14-16 hours per week)
- Access: AVF, AVG or CVC
- Heparin bolus per unit protocol at the beginning of treatment
- Recommended fluid removal not to exceed 10 mL/kg/hour
- Consider additional treatments if required ultrafiltration goal exceeds 10 mL/kg per hour

The NxStage dosing calculator can assist in making prescription recommendations. To access the dosing calculator [click here](#)

*Ultimately, hemodialysis prescriptions are at the discretion of the treating nephrologist and can be modified based on individual patient needs.

Staff Training Plan

- Having a staff training plan is crucial to ensuring your clinical staff is prepared and helps to optimize the patient experience in a TDC Unit
- Below is a template of a staff training plan.
Patient HD Prescription for TDC (cont’d)

Based on best practices experienced by members of the TDC Demonstration Initiative that have implemented TDC Units, below are suggestions regarding a TDC patient HD prescription:

- Check pre and post vital signs
- During treatment, check BP every 30 minutes on dialysis
- Obtain weight pre & post treatment
- Baseline monthly lab at beginning of the TDC

*Dose Erythropoiesis-stimulating agent (ESA) and iron based on monthly lab and in-center ESA and iron protocols
- Monitor BP medications and target weight closely, adjusting to prevent hypotension during and after treatments per in-center protocols

*Ultimately, hemodialysis prescriptions are at the discretion of the treating nephrologist and can be modified based on individual patient needs.
Based on best practices experienced by members of the TDC Demonstration Initiative that have implemented TDC Units, below are suggestions regarding a TDC patient HD prescription. When using a NxStage system in a TDC Unit, use the dialysate volume per treatment based on the below table:

- Set dialysate flow at an hourly rate.

*Ultimately, hemodialysis prescriptions are at the discretion of the treating nephrologist and can be modified based on individual patient needs.


<table>
<thead>
<tr>
<th>Treatment</th>
<th>Female</th>
<th>Male</th>
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<tbody>
<tr>
<td></td>
<td>&lt;=80 kgs</td>
<td>80-100 kgs</td>
</tr>
<tr>
<td>4</td>
<td>30L</td>
<td>30L</td>
</tr>
<tr>
<td>5</td>
<td>25L</td>
<td>25L</td>
</tr>
<tr>
<td>6</td>
<td>20L</td>
<td>20L</td>
</tr>
</tbody>
</table>
Speaking With a New ESRD Patient

- A patient that has been newly diagnosed with ESRD may likely experience:
  - Depression
  - Anxiety
  - Confusion

- As a result, new ESRD patients are often unable to comprehend important information as it may be presented to them.

- When speaking with an ESRD patient, do not overwhelm them with too much detail instead offer small, digestible, and concise information.

- In addition, speak slower and have a compassionate, supportive tone.

Anticoagulation Administration

Below is a template for a TDC Anticoagulation Administration Policies & Procedures.

<table>
<thead>
<tr>
<th>Policy Number: 6</th>
<th>Effective Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Anticoagulation Administration for Translational Care</td>
<td>Review/Revised Date:</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Purpose:</td>
<td></td>
</tr>
<tr>
<td>- To establish a method for safe use of anticoagulation during hemodialysis.</td>
<td></td>
</tr>
<tr>
<td>- To ensure the patient be free of complications associated with anticoagulation therapy.</td>
<td></td>
</tr>
<tr>
<td>Policy:</td>
<td></td>
</tr>
<tr>
<td>- Anticoagulation may be given as a bolus infusion.</td>
<td></td>
</tr>
<tr>
<td>- If an anticoagulant is to be used, samples should be drawn periodically to assess laboratory condition.</td>
<td></td>
</tr>
<tr>
<td>Supplies:</td>
<td></td>
</tr>
<tr>
<td>- Anticoagulant as ordered</td>
<td></td>
</tr>
<tr>
<td>- Syringe, needle</td>
<td></td>
</tr>
<tr>
<td>- Appropriate Personal Protective Equipment (PPE) for Translational Care</td>
<td></td>
</tr>
<tr>
<td>PROCEDURE</td>
<td>SUPPORTIVE INFORMATION</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>
Patient Education Curriculum

Best practices indicate that offering a 4 week education curriculum will provide patients in transition with sufficient time to:

- Recover medically
- Adjust emotionally
- Become educated on all dialysis modality options, including transplantation
- Make an informed modality decision best suited for their future and lifestyle
Week 2 Plan

Patient Education

**Basic Modality Education**
- Allow patient/family member to ask questions prior to week 2.
- Educate on fluid, infection, and medication management.
- Discuss patient short & long-term lifestyle goals.
- Provide basic modality and access education: PD, HHD, transplant and in-center.
- Present outcomes data, quality of life data.
- Review patient insurance benefits.

Patient Care Plan

**Begin Long-Term Care Plan**
- Discuss vascular access options.
- Monitor blood pressure and antihypertensive medications.
- Prepare and present patient with potential benefit-related documentation.

Week 3 Plan

Patient Education

**In-Depth Modality Education**
- Allow patient/family member to ask questions prior to week 3.
- In-depth education (including access) on:
  - PD
  - HHD
  - In-Center
  - Transplant
- Patient/family member discusses modalities with a PD, HHD, In-Center, & Transplant patient.
- Financial education regarding dialysis therapy (water consumption, transportation to In-Center, etc.).

Patient Care Plan

**Ensure Clinical & Emotional Stability**
- Finalize dialysis access plan and CVC exit plan.
- Assess target weight, RRF, & medication regimen.
- Evaluate delivered dose of dialysis.
Marketing Your TDC Unit

Below are a few best practices for promoting your unique competitive advantage:

- Create a brochure for prospective patients and hospital discharge planners
- Host an educational event with hospital discharge planners explaining TDC
- Create a section on your website articulating the benefits of your TDC Unit
- Create a video of your program and include patient stories and experiences
- Execute an email campaign highlighting the TDC Unit
- Partner with a local newspaper to create an article about your unique offering
- Utilize social media channels to advertise your TDC Unit
- Publish clinical or operational outcomes in a peer-reviewed journal (AJKD, CJASN, etc.)
- Showcase a TDC banner in your center highlighting the benefits of the TDC Unit

Week 4 Plan

Patient Education

Patient Modality Choice

- Allow patient/family member to ask questions prior to week 4
- Determine patient’s modality preference
- Reassure patient that all options remain available
- Teach patient dietary restrictions
- If patient is interested in transplant, refer to appropriate transplant centers
- If patient chooses a home modality, refer them to helpful resources

Patient Care Plan

Complete Patient Care Planning

- Ensure patient comprehends access plan
- Refer to PD or HHD training program at the facility closest to home and schedule
- Re-evaluate transportation needs
- Schedule home visit, if appropriate
- Ensure necessary documents are completed and signed by physicians (such as 2728 FORM)

Click to download full 4 Week Curriculum
Other Relevant Resources

Beyond the information included in this TDC Operational Guidance Resource, there are other documents that can provide support in implementing a TDC Unit. These resources are listed below:

- Using a Transitional Start Dialysis Unit to Improve Modality Selection (Dr. Robert Lockridge)
- Transitional dialysis care units: A new approach to increase home dialysis modality uptake and patient outcomes
  [https://doi.org/10.1111/sdi.12651](https://doi.org/10.1111/sdi.12651)
- Improving Incident ESRD Care Via a Transitional Care Unit
  [https://doi.org/10.1053/j.ajkd.2018.01.035](https://doi.org/10.1053/j.ajkd.2018.01.035)

For additional resources, policies, and procedures, please visit: [http://ww3.nxstage.com/tdc-resources](http://ww3.nxstage.com/tdc-resources)
Risks and Responsibilities

The reported benefits of home hemodialysis (HHD) may not be experienced by all patients.

The NxStage System is a prescription device and, like all medical devices, involves some risks. The risks associated with hemodialysis treatments in any environment include, but are not limited to, high blood pressure, fluid overload, low blood pressure, heart-related issues, and vascular access complications. When vascular access is exposed to more frequent use, infection of the site, and other access related complications may also be potential risks. The medical devices used in hemodialysis therapies, including air entering the bloodstream, and blood loss due to clotting or accidental disconnection of the blood tubing set.

Home hemodialysis with the NxStage System during waking hours may not require a care partner, provided a physician and a qualified patient agree that solo home hemodialysis is appropriate. Patients performing nocturnal treatments are required to have a care partner. Care partners are trained on proper operation and how to get medical or technical help if needed.

Certain risks associated with hemodialysis treatment are increased when performing solo HHD because no one is present to help the patient respond to health emergencies. If patients experience needles coming out, blood loss, or very low blood pressure during solo HHD, they may lose consciousness or become physically unable to correct the health emergency. Losing consciousness or becoming impaired during any health emergency while alone could result in significant injury or death. Additional training are required when performing solo HHD.

Certain risks associated with hemodialysis treatment are increased when performing nocturnal therapy due to the length of treatment time and because therapy is performed while the patient and care partner are sleeping. These risks include, but are not limited to, blood access disconnects and blood loss during sleep, blood clotting due to slower blood flow and/or increased treatment time, and delayed response to alarms when waking from sleep.

Patients should consult their doctor to understand the risks and responsibilities of performing these therapies using the NxStage System.