



TECHNICAL/CLINICAL TOOLS

BEST PRACTICE 5: Optimize Dialysis

WHY IS THIS IMPORTANT?

Several factors must be considered to define what is optimal for given individuals, including dialysis modalities and individual behaviors and competing priorities, as well as clinical, cardiac, volume, biochemical, and functional parameters. The best practice includes defining optimum for the individual patient and tracking at the facility level the proportion of patients that achieve optimal dialysis, relative to a facility-set target for success.

BEST PRACTICE 5

Optimal dialysis dosing and choice of treatment option can improve quality of life while reducing mortality risks.

HOW DO YOU ACHIEVE THIS BEST PRACTICE?

- 1) Define “optimal dialysis” in terms of processes and outcomes according to current federal regulations and best evidence:
 - a) Processes
 - i) Select individual targets for optimal dialysis and place on dialysis record; track and intervene as appropriate to achieve and maintain optimal dialysis.
 - (1) Aim for a minimum of four hours, three times weekly, for standard in-center dialysis.
 - (2) Use appropriate dosing for other dialysis modalities based on clinical standards and emerging evidence base.
 - (3) For each patient, serially assess the volume status to determine euvolemia.
 - ii) Individualize diet and fluid recommendations to maximize nutrition, limiting sodium to 2 gm/day, and restricting fluids and potassium as needed for the chosen modality.
 - iii) Monitor left ventricular (LV) function through ECHO and manage volume and medications to control LVH, according to current guidelines.
 - iv) Track proportion of patients who achieve the “optimal dialysis targets”.
 - v) Set a goal for physician and facility-level performance for proportion of patients achieving “optimal dialysis”, using a *Plan-Do-Check-Act* (PDCA) approach to achieve the goal (see Tool: Adequacy of Hemodialysis – PDCA Cycle).

Note:

- (1) Kt/V and URR have limitations. Do not use these as the only measures to define optimal standard HD.
 - (a) Kt/V is a complicated formula and may not reflect the true picture of optimal

dialysis.

(b) Frequency of treatment decreases the accuracy of Kt/V and URR.

(2) Assessment for, and avoidance of loss of, residual renal function are necessary.

(3) Dry weight has recognized limitations for assessing volume.

b) Outcomes

i) Patient maintains euvolemia while attempting to minimize episodes of symptomatic hypotension.

ii) Blood pressure is controlled by minimizing volume overload (reduce interdialytic fluid gains and maximize ultrafiltration to achieve estimated dry weight) and reducing the use of anti-hypertensives in the majority of dialysis patients.

iii) Although patient experience and physical and mental state are predictive of mortality outcomes, interventions to improve patients' sense of well being have not yet been established to reduce first-year incident mortality. Nevertheless, improving how patients feel could translate to the quality of adherence to their treatment plan, consequently affecting mortality outcomes.

(1) Hemodialysis patients have post-dialysis recovery time of 30 minutes or less.

(2) The case-mix adjusted population has an average or above average physical and mental component summary score on the KDQOL-36, excluding patients who:

(a) have been under the clinic's care for less than three months,

(b) are <18 years of age,

(c) have cognitive impairment, dementia, and/or active psychosis,

(d) are non-English speaking/reading and no language translation or interpreter available,

(e) are unable to read the survey tool, or

(f) refuse to complete the questionnaire.

(3) The patients' ability to perform ADLs is appropriate for their age and physical condition.

(4) Patients maintain their preferred lifestyle.

(5) Patients can continue education and vocational training; maintain employment, and/or rejoin the workforce, if desired.

(6) Dialysis patients have minimal intrusion into their preferred lifestyle.

2) Develop strategies to improve patient ability to follow the treatment plan regarding dialysis schedule and prescription.

TECHNICAL/CLINICAL BEST PRACTICE #5: OPTIMIZE DIALYSIS

Printed Tools and Resources	
Barthel Index Activities of Daily Living (ADL) Scale	http://www.strokecenter.org/trials/scales/barthel_reprint.pdf
Instrumental Activities of Daily Living (ADL) Scale	The Gerontological Society of America http://www.medicine.uiowa.edu/igec/tools/function/lawtonBrody.pdf
KDQOL-COMPLETE™ This secure site scores the KDQOL-36 in English, Spanish, Korean, Chinese, Tagalog, and French-Creole (more to come). Case-mix adjusts for age, gender, and diabetes. Provides patient and chart report summaries for a small, annual licensing fee based on clinic size.	Medical Education Institute http://www.kdqol-complete.org/pdfs/KDQOL-Complete-Brochure.pdf
KDQOL-36 Scoring Spreadsheet A free Excel spreadsheet. (NOTE: This does not case-mix adjust for diabetes and provides no patient report.)	UCLA/RAND Register at http://gim.med.ucla.edu/kdqol/ Download the tool at http://gim.med.ucla.edu/kdqol/downloads/download.html
Hemodialysis Adequacy Tools for Standard In-Center Hemodialysis	<ul style="list-style-type: none"> • Fishbone Diagram Adequacy of Dialysis • Root Cause Documentation Tool Adequacy of Dialysis • Hemodialysis Adequacy Flow Chart Tool • Protocol SAMPLE for Adequacy of Hemodialysis • Unit Wide Action Plan: SAMPLE Adequacy of Hemodialysis Tool • Patient POC Action Plan: SAMPLE Adequacy of Hemodialysis Tool • Adequacy of Hemodialysis PDCA Module • Hemodialysis Adequacy Patient Education Tool
Kt/V Calculator	DaVita, Inc. www.davita.com/tools/ktvcalculator
Good Dialysis Index	www.nocturnaldialysis.org/good_dialysis_index.htm
Clinical Practice Guidelines for Hemodialysis Adequacy	NKF/KDOQI http://www.kidney.org/professionals/KDOQI/guideline_upHD_PD_VA/index.htm

Supporting Literature

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