

COVID-19: Acute Kidney Injury Response

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April 24, 2020

Patient Volume

- Hospital Systems in New York have doubled ICU bed capacity since March 26.
- At baseline, 5-10% of patients in ICUs receive dialysis (personal observation).
- Acute kidney injury complicates at least half of cases of COVID-19 requiring ICU care.
- Estimates indicate that 25-90% of patients in ICUs are receiving renal replacement therapy: most are receiving continuous dialysis.
- The volume of patients receiving continuous dialysis has increased by roughly 5X since the end of March.

Continuous Dialysis Therapies

- Due to the expansion, concerns of fluid and machine shortages arose.
- To ensure that all patients received sufficient dialysis to provide metabolic and volume control, physicians turned to innovative solutions.
 - Reduced dialysate flow rates
 - Standard CRRT uses 50 mL/min (72 L/day)
 - Reduced flow CRRT uses 15 mL/min (21.6 L/day)
 - Prolonged Intermittent Renal Replacement Therapy (PIRRT)
 - Depending on individual needs, patients receive 8-12 hours of dialysis daily
 - Machines can be used to treat two patients daily

Addressing Fluid Shortages

- Around April 11, many hospital systems in New York expressed concerns that they would not have sufficient dialysate fluid to treat patients the following week.
- The American Society of Nephrology's COVID-19 Response Team convened a meeting of clinical directors from Northwell, NYC HHC, NYU, New York-Presbyterian, Mount Sinai, Einstein and New York Med.
- Responses went in three directions:
 - Greater New York Hospital Association to Governor Cuomo
 - Manufacturers (Baxter and NxStage/Fresenius)
 - Federal Government (ASPR, FDA, CMS)

