## **ADQI 22 Figures**

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Figure 1: Seven steps need to be taken for a successful quality improvement project.

Abbreviations: PDSA, Plan, Do, Study, Act; DMAIC, Define, Measure, Analyze, Implement, Control. Appendix A provides definitions, templates, and examples.



Figure 2: AKI quality care in a continuity



## Figure 3: Kidney Health Assessment and Response

Kidney Health Assessment includes <u>A</u>KI history, <u>B</u>lood pressure, <u>C</u>KD, serum <u>C</u>reatinine level, <u>D</u>rug list, and urine <u>Di</u>pstick (ABCD). Exposures (MISS) include Nephrotoxic <u>M</u>edications, <u>Imaging, Surgery, Sickness</u>. Kidney Health Response (4Ms) that encompasses <u>M</u>edication review to withhold unnecessary medications [e.g., non-steroidal anti-inflammatory drugs(45, 46)], the <u>M</u>inimization of nephrotoxic exposures [e.g., intravenous contrast(47)], <u>M</u>essaging the healthcare team and patient to alert the high-risk of AKI, and <u>M</u>onitoring for AKI and its consequences.



Figure 4: Factors related to quality indicators and reporting

Factors related to quality indicators and reporting can be divided in structure, process and outcome in community, hospital and following initiation of KRT. Clearly, different levels exist depending on resource possibilities. For example, resource-sufficient areas may have access electronic medical records, allowing system-driven identification and prevention and more detailed outcome reporting of patients with AKI. Embedded in these is a basic level of quality measures and level of reporting that should be feasible in both resource limited and research sufficient areas (white boxes).

![](_page_3_Figure_2.jpeg)

## Figure 5: Schematic for AKI/AKD follow-up.

The figure displays a potential paradigm for the care of patients who experience AKI/ AKD. The degree of nephrology based follow up increases as the duration and severity of AKI /AKID increases. The timing and nature of follow up are suggestions as there is limited data to inform this process. Future research effort should work to clarify the timing and health care providers who should be providing AKI/AKD follow-up. The items in each bucket follow the "OR" rule, therefore, each patient should follow the most severe bucket if even meet one criteria of that bucket (e.g., patient with CKD IV regardless of severity of AKI should be followed by nephrologist in one week).

Stage 1 AKI of Short Duration (1 day) SCr normal or returns to baseline Hospital Limited Event in healthy pt Consider RAMPS/ bundle within 1 year	Duration of Stage 1 AKI (1-2 days) Limited Co-morbidities No prior CKD SCr not returning to baseline Consider RAMPS in 6months	Prolonged Stage 1 AKI (3-6 days) or Stage 2 AKI for shorter duration (1-3 days) Increasing co- morbidities (advancing age,) SCr persistently elevated < 25% of pre-existing baseline Labs in the next 3-6 weeks with long term RAMPS/neph appt (next several months)	Prolonged Stage 2 AKI with UA showing injury (duration ≥ 7 days) Multiple co- morbidities (cancer, prior AKIs, mild CKD at baseline ) SCr persistently elevated >25% above prior baseline in some but some recovery Labs in 1-2 weeks w/ neph appt / RAMPS in weeks	Stage 3 AKI and Persistent other forms of AKI or kidney disease History of Prior AKI, significant CV dx, hypertension, diabetes mellitus and advanced CKD Labs within days of discharge and follow up with Nephrology- RAMPS within 1 week	AKI –D recovered and non-recovered Prior CKD 4 Recurrent AKI/AKD RAMPS or WATCH ME – Labs within days of discharge and follow up with Nephrology within 1 week	
Nephrology-Based Care Providers Non-Nephrology Care Providers						

**AKI/AKD Severity** 

Supplementary Figure 2: Quality measures of care for AKI primary prevention

![](_page_5_Figure_1.jpeg)

Supplementary Figure 3: Control-run chart for finding outliers and the need for policy changes.

![](_page_6_Figure_1.jpeg)

Supplementary Figure 4: Root-cause analysis

STEP 1	STEP 2	STEP 3	STEP 4
Define the problem	<ul> <li>Determine the causal relationship</li> </ul>	<ul> <li>Identify effective solutions</li> </ul>	<ul> <li>Implement and track solutions</li> </ul>