

Nursing-led protocol to identify Semi-critical results for earlier intervention and reduce the risk of critical conditions

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Problem Statement

Chronic Kidney Disease (CKD) patients may suffer from acute derangements in laboratory indicators. Hence, **Early detection** is vital for initiating timely intervention.

- Renal semi-critical results are **not flagged** through the critical results notification system.
- The results were **only sent to the ordering doctor (For example, order upon discharge)**. The reviewing renal physician would not be aware their patients turn up for the tests
- No guidelines for semi-critical value for renal patients**

Project Aim

- Shorten time from reporting the semi-critical results to a decision on action required
- Evaluate the frequency in which semi-critical results require urgent actions
- Evaluate our current practices on identifying semi-critical results

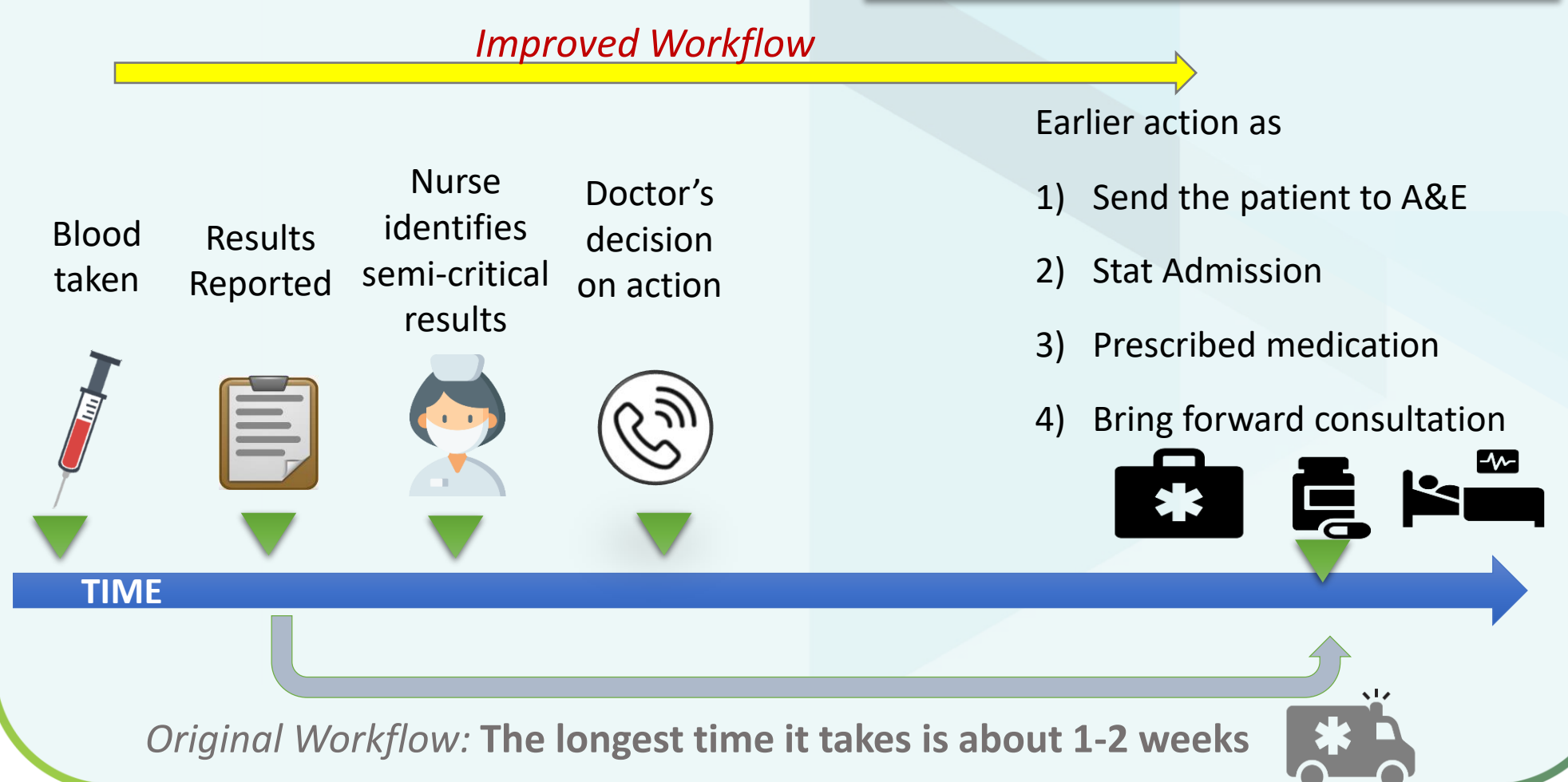
Lessons Learnt

Our top priority is patient safety and quality care. The team-based protocol helps us efficiently trace, communicate, and respond to these semi-critical results. When we reviewed our processes, we found limitations when working alone. So, doctors learned how we all fit into the process to close the loop on lab results, and nurses considered how to manage the additional workload in our daily routines. While each of us often operates in our respective silos, when we come together to address a problem, we become a stronger team.

Potential Solutions

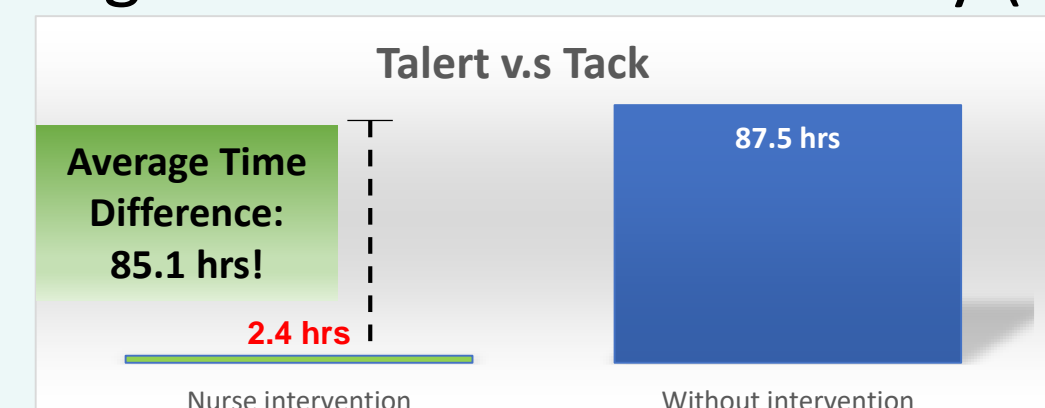
- A Semi-critical screening guideline was set up by renal consultant.
- Nurses trace the laboratory results electronically
- Semi-critical results will be highlighted to doctor for earlier actions
- Documentation will be done by nurses once action is completed

Ranges	Action	Usual Actions by Doctors (to be ordered by Dr)
Potassium		
>6.0 (critical lab)	1. Check if patient is on dialysis 2. Check BP / HR 3. Call Dr (within 1h of call from lab)	Do ECG KIV Admit KIV Resonium / usual dialysis
5.6 to 6.0	1. Check if patient is on dialysis 2. If not on dialysis: Inform Dr (within 24h) 3. If on dialysis: keep TCU	PO Resonium 15g TDS x 3 days Repeat K on arrival next visit
3.1 to 5.5	1. Keep TCU	NIL
2.5 to 3.0	1. Inform Dr (within 4h)	PO Potassium replacement Repeat K on arrival next visit
<2.5 (critical lab)	1. Call Dr (within 1h of call from lab)	Oral K or admit for IV K
Creatinine		
>500	1. Check if dialysis - no action if on dialysis 2. Check last creatinine within 6 months: if Cr ↑ ≥2X - Inform Dr (within 24h) 3. No creatinine within 6 months, if Urea ≥35.0 Inform Dr (within 24h)	Case by case basis
Haemoglobin		
7.1 to 8.5	1. Check last Hb within 6 months. 2. If 22.0g/dl drop, Inform Dr (within 24h)	Admit for transfusion and investigation if symptomatic
5.0 to 7.0	1. Inform Dr (within 4h)	Admit for transfusion
<5.0 (critical lab)	1. Call Dr (within 1h of call from lab)	Admit for transfusion
Calcium		
<1.75 or >3.25 (critical lab)	1. Call Dr (within 1h of call from lab)	Adjust oral calcium / admit

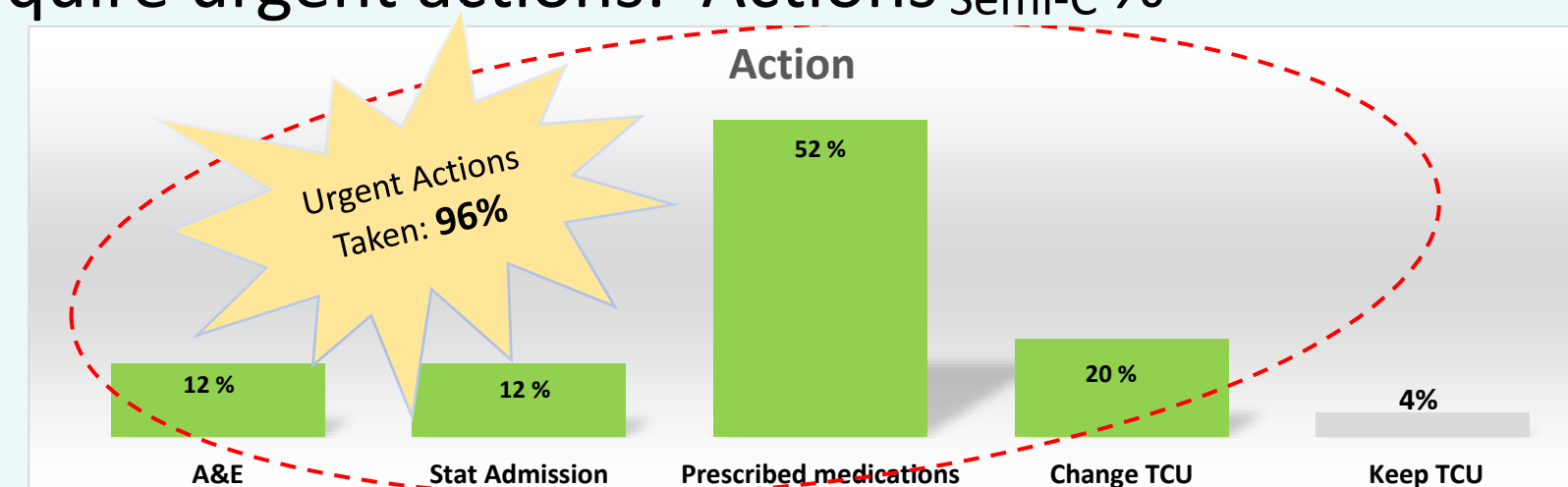


Outcomes & Impacts

- Average Time to Dr's action on semi-critical results with screening alert (T_{alert}) v.s. Average Time to Dr's acknowledgement of results routinely (T_{ack})



- Evaluate the frequency in which semi-critical results require urgent actions: Actions_{semi-C} %



The nursing intervention to trace semi-critical results has significantly shortened the time from reporting to a decision on action. It enhanced patient safety and reduced the chances of the condition becoming critical.