Here is a **text-based decision tree** to help optimize clinical workflow in a **nephrology clinic**, focusing on the **safe prescribing and monitoring of methotrexate (MTX)**—a potentially **dangerous medication for patients on dialysis**. This includes **clinical decision support (CDS)** principles and integrates **PMI (Patient Medication Information)** into workflow steps.

**🌳 Clinical Decision Tree: Methotrexate Safety in Dialysis Patients (Nephrology Clinic)**

**Start: Methotrexate (MTX) Considered for Patient**

1. **Is the patient on dialysis?**
   * **Yes** → ⚠️ **High Risk** – Methotrexate is contraindicated.  
     → Trigger **alert**: *“Patient on dialysis. Methotrexate is nephrotoxic and may accumulate to toxic levels. Alternative medication required.”*  
     → Route to:
     + **Pharmacist review**
     + **Prescriber re-evaluation of therapy**
     + **Nephrologist notification**  
       → ❌ *Do NOT proceed with methotrexate order.*
   * **No** → Proceed to Step 2
2. **Does the patient have reduced kidney function (eGFR < 30)?**
   * **Yes** → ⚠️ *Use with caution or avoid. Dosage adjustment or alternative recommended.*  
     → Alert: *“Severely reduced renal function. Consider alternative or adjust dose. Monitor renal function closely.”*  
     → Route to nephrologist and pharmacy for approval  
     → Proceed with adjusted order only if approved
   * **No** → Proceed to Step 3
3. **Is the methotrexate dose and frequency appropriate (e.g., weekly not daily)?**
   * **Yes** → Proceed to Step 4
   * **No or Unclear** → ⚠️ Alert: *“Check MTX frequency. Weekly dosing is standard for most indications. Daily dosing may result in toxicity.”*  
     → Require prescriber confirmation  
     → Flag for pharmacist review
4. **Is folic acid supplementation prescribed?**
   * **Yes** → ✅ Proceed
   * **No** → ⚠️ Alert: *“Folic acid not prescribed with methotrexate. Risk of hematologic and gastrointestinal toxicity.”*  
     → Recommend adding folic acid to prescription
5. **Patient Education and Monitoring Setup**
   * Provide **Patient Medication Information (PMI)**:  
     *Explain risks, signs of toxicity (e.g., mouth sores, fatigue, infections), importance of lab monitoring.*
   * Confirm **baseline labs ordered**: CBC, LFTs, creatinine, eGFR
   * Schedule **follow-up labs** in 1–2 weeks
   * Add to **clinical dashboard** for monitoring
6. **Final Verification**
   * Review by:
     + 🧑‍⚕️ Nephrologist
     + 💊 Pharmacist
     + 🖥️ EHR Clinical Decision Support (CDS) system
   * If all safety checks passed → ✅ **MTX prescription allowed**
   * If any check fails → ❌ **Reject order / hold for review**

**✅ Outcome: Optimized Workflow**

* Prevents harm by avoiding methotrexate in dialysis patients
* Improves interprofessional collaboration
* Integrates alerts, education, monitoring, and documentation into EHR
* Enhances patient safety and quality of care