Based on Martha Alvarez's most recent clinical data (May–June 2025), her major issues remain chronic kidney disease (CKD) stage 3a with proteinuria, heart failure with reduced ejection fraction (HFrEF), ischemic heart disease, and type 2 diabetes. Below are several interrelated "next steps" to optimize her care:

---

1. Optimize Renal-Protective and Heart-Failure Therapies

1. **Initiate or add an SGLT2 inhibitor**
    - **Rationale:** Agents such as empagliflozin or dapagliflozin have been shown to slow CKD progression (even in non-diabetic patients) and reduce heart-failure hospitalizations in HFrEF.
    - **Action:**
        - Verify that her eGFR remains ≥ 30 mL/min/1.73 m² (latest = 45 mL/min/1.73 m²), potassium is acceptable (4.7 mEq/L), and there are no contraindications (e.g., recurrent urinary tract infections).
        - Start empagliflozin 10 mg once daily (renal dose adjustments are required only if eGFR < 45, but at 45 it's still appropriate; monitor eGFR closely).
        - Educate on "sick-day rules" (stop SGLT2 inhibitor if she develops volume depletion, hypotension, or acute illness).
        - Monitor renal function and electrolytes (potassium, sodium) in 2–4 weeks after initiation.
2. **Review RAAS inhibition dosing**
    - **Current:** Lisinopril 20 mg daily.
    - **Consideration:** If tolerating blood pressure and creatinine/K^+ stability, consider uptitrating (e.g., to 30 mg daily) to maximize renoprotection and HFrEF benefit, provided serum potassium stays < 5.0 mEq/L.
    - **Action:** Check recent BP and labs; if BP ≥ 120/80 and K^+ ≤ 4.8, increase lisinopril to 30 mg daily. Recheck BMP (basic metabolic panel) in 1–2 weeks to ensure stable creatinine (< 30 % rise) and K^+ < 5.5.

3. **Assess for mineralocorticoid receptor antagonist (MRA)**
    - **Rationale:** In HFrEF (LVEF 45 % with NYHA II–III symptoms), an MRA such as spironolactone can reduce morbidity.
    - **Action:**
        - Confirm $K^+ \leq 4.8$ mEq/L and eGFR ≥ 30 mL/min/1.73 m² (she meets these).
        - Start spironolactone 12.5 mg daily (low dose) with close monitoring of K^+ and creatinine in 1 week, then at 4 weeks.
        - Educate regarding hyperkalemia signs and dietary potassium restrictions.
4. **Diuretic regimen adjustment for volume control**
    - **Current:** Furosemide 40 mg daily.
    - **Findings:** Persistent mild bibasilar crackles and 1+ pitting edema at ankles.
    - **Action:**
        - Increase furosemide to 40 mg twice daily (morning + early afternoon) or consider switching to torsemide (e.g., 20 mg daily) for more consistent diuresis in CKD.
        - Monitor weight and daily logs; reassess edema every 1–2 weeks.
        - Check orthostatic blood pressures if higher diuretic doses are used.

---

2. Address Anemia of CKD

- **Current:** Hemoglobin 10.8 g/dL, ESA therapy ongoing.
- **Next Steps:**
    1. **Obtain iron studies (ferritin, transferrin saturation)** to ensure adequate iron stores before further ESA dose increases.

2. If iron deficiency (TSAT < 20 % or ferritin < 100 ng/mL), initiate oral or IV iron repletion.

3. Continue monthly ESA, adjusting dose to target hemoglobin ~11–11.5 g/dL (avoid > 12 g/dL).

4. Recheck CBC and iron studies in 1 month.

---

3. Tighten Glycemic Control

- **Current:** A1C 7.4 %.

- **Goal:** For most patients with CKD and HFrEF, target A1C ~ 7 % (some guidelines allow up to 7.5 % if comorbidities).

- **Action:**

    1. **Add or intensify a GLP-1 receptor agonist** (e.g., dulaglutide or semaglutide) if BMI > 30 or if additional cardiovascular protection is desired.

        - Advantages: CV risk reduction, additional weight benefit, renal safety.

        - Start dulaglutide 0.75 mg SC once weekly; monitor for GI side effects.

    2. **Alternatively**, if already on maximally tolerated metformin dose (1000 mg BID) and if not starting GLP-1, consider adding a DPP-4 inhibitor (e.g., linagliptin, which has no renal dose adjustment).

    3. Instruct her on home glucose monitoring: check fasting and post-prandial glucose logs to guide adjustments.

    4. Reassess A1C in 3 months.

---

4. Monitor and Slow CKD Progression

1. **Proteinuria management**

- **Current:** Urine albumin-creatinine ratio 350 mg/g (moderately increased).
- **Action:**
  - Ensure maximally tolerated ACE-I/ARB (see RAAS uptitration above).
  - After adding an SGLT2 inhibitor, repeat urine ACR in 3 months—expect a 30 %–40 % reduction.
  - Counsel strict sodium restriction (< 2 g/day), encourage protein intake of 0.8 g/kg/day (to avoid excessive protein burden).

2. **Nephrology referral**
   - **Rationale:** CKD stage 3a with proteinuria > 300 mg/g: guideline-driven referral to nephrology for co-management, especially before eGFR drops to < 30 mL/min/1.73 m².
   - **Action:** Arrange nephrology appointment within 4–6 weeks. Provide recent labs, medication list, and echo results.
3. **Cardiorenal coordination**
   - Schedule a joint consult (if available) with cardiology and nephrology to synchronize diuretic strategy, RAAS blockade, and advance care planning for potential renal replacement therapy.

---

5. Reassess Cardiovascular Status

1. **Repeat Echocardiogram**
   - **Reason:** Last echo (July 2023) showed LVEF 45 %.
   - **Plan:** Obtain new echo within the next 2 months to assess LVEF and diastolic function—especially if symptomatic worsening.
   - If LVEF drops < 35 % or remains 35 %–40 % with NYHA II–III symptoms, evaluate need for an implantable cardioverter-defibrillator (ICD) or CRT (cardiac resynchronization therapy) as per guidelines.

2. **Lipid Management**
    - **Current:** LDL 92 mg/dL (on atorvastatin 40 mg).
    - **Goal:** In established ischemic heart disease, target LDL < 70 mg/dL.
    - **Action:**
        - Increase atorvastatin to 80 mg daily if tolerated (monitor LFTs at 6 weeks).
        - Alternatively, add ezetimibe 10 mg daily to achieve LDL < 70 mg/dL if high-dose statin not tolerated.
        - Recheck fasting lipid panel in 6–8 weeks.

---

6. Lifestyle and Preventive Measures

1. **Diet and Fluid Recommendations**
    - Reinforce low-sodium diet (< 2 g/day) and fluid restriction (~1.5 L/day).
    - Referral to a renal dietitian for individualized meal planning, focusing on moderate protein intake (0.8 g/kg/day) and potassium control.
2. **Exercise**
    - She is currently sedentary.
    - Recommend supervised, low-intensity aerobic exercise (e.g., 15–20 minutes of walking 3–5×/week) with gradual progression as tolerated, to improve functional capacity in HFrEF.
3. **Smoking Cessation & Vaccines**
    - She quit smoking in 2015, but reinforce avoidance and counsel on avoiding secondhand smoke.
    - Ensure influenza vaccine (for 2025–2026 season), pneumococcal vaccines (PCV13 and PPSV23 per CKD guidelines), and COVID-19 boosters (if due).

---

7. Schedule Close Follow-Up and Monitoring

1. **Labs**
    - **In 2–4 weeks:** BMP (creatinine, electrolytes), CBC, potassium (after starting spironolactone/SGLT2i).
    - **In 3 months:** A1C, lipid panel, urine ACR.
    - **Monthly:** Hemoglobin, ferritin, TSAT (for anemia management).
2. **Outpatient Visits**
    - **Cardiology:** Appointment in 4–6 weeks to review echo results and adjust HF medications.
    - **Nephrology:** Appointment within 4–6 weeks for CKD co-management.
    - **Primary Care / Endocrine:** Follow-up in 3 months for diabetic control and general assessment.
3. **Patient Education**
    - Provide a printed “Heart Failure and CKD” action plan:
        - Daily weight log with thresholds for “call physician” (e.g., gain > 2 lb in 24 hours).
        - Signs of volume overload (e.g., increased shortness of breath, orthopnea).
        - Hypoglycemia/hyperglycemia guidelines if adjusting diabetes meds.
    - Teach proper technique for home BP measurement and when to seek urgent care (e.g., SBP < 90 or symptomatic hypotension).

Summary of Priorities

1. Add **SGLT2 inhibitor** for dual renal and cardiac protection.
2. Uptitrate **ACE-inhibitor** (lisinopril) and add low-dose **spironolactone** for HFrEF.
3. Intensify **lipid-lowering** to reach LDL < 70 mg/dL.
4. Optimize **diabetes regimen** by adding a GLP-1 agonist or DPP-4 inhibitor.
5. Adjust **diuretic dosing** to relieve residual volume overload.
6. Refer for **nephrology** and repeat **echocardiogram** to reassess LVEF.
7. Continue aggressive **anemia management**, iron repletion, and ESA monitoring.
8. Reinforce **low-sodium diet**, moderate exercise, vaccination, and self-monitoring rules.

By tackling each of these areas in a stepwise fashion—starting with foundational pharmacotherapy (SGLT2i, RAAS maximization, MRA) and close multispecialty follow-up—Martha's progression of CKD and heart failure can be slowed, her anemia better controlled, and her overall cardiovascular risk reduced.