# **Neascape** Education

Medscape Education, New York, NY

# PURPOSE

We sought to determine if an online, virtual patient simulation (VPS)based continuing medical education (CME) intervention could improve performance of cardiologists related to identification of patients with heart failure and hyperkalemia, and subsequent management of hyperkalemia.



# METHODS

- The intervention comprised 2 patients presenting in a VPS platform that allows learners to order lab tests, make diagnoses, and prescribe treatments, supported by an extensive database of diagnostic and treatment possibilities matching the scope and depth of actual practice
- Learner clinical decisions, entered using open field entries, were analyzed using a sophisticated decision engine
  - Tailored clinical guidance (CG), based on current evidence and expert recommendation, was provided following each decision
  - Learners were given the opportunity to modify their decisions after receiving CG
- Each user's decisions were collected post-CG and compared with that user's pre-CG data using a 2-tailed, paired t-test
- Data are reflective of learners who participated in the VPS from April 30, 2019 through July 25, 2019



### Patient Simulation Cases

Overall, significant improvements were demonstrated by cardiologists related to management of patients with hyperkalemia.



Roger is a 58-year-old man with a history of ischemic heart disease, hypertension, heart failure, dyslipidemia, and prediabetes. He takes multiple prescription medications to manage his conditions, and also takes over-thecounter nonsteroidal anti-inflammatory drugs (NSAIDs) for joint pain that remains despite hip replacement surgery. He returns today to follow up on asymptomatic hyperkalemia that was discovered at his last visit and addressed by lowering his spironolactone dosage and monitoring his dietary intake of potassium.

Age: 58 years BMI: 29

# Effect of Virtual Patient Simulation at Improving Management of Chronic Hyperkalemia AMY LARKIN, PHARMD; DAVID ANDERSON; MARTIN WARTERS, CHSE; GWEN LITTMAN, MD; JAVED BUTLER, MD, MBA, MPH; MIKHAIL KOSIBOROD, MD,

## RESULTS

CASE 1:



#### ROGER W. CASE SUMMARY

Gender: Male Weight: 99.80 kg Height: 185.4 cm Allergies: None





hyperkalemia Helene is a 68-year-old woman with a history of type 2 diabetes (T2D) and hypertension. She also has non-ischemic heart failure (HF) with reduced left ventricular ejection fraction (HFrEF) of 35%, and chronic kidney disease Order nutritional (CKD) Stage 3a with an estimated glomerular counseling filtration rate (eGFR) of 50 mL/min/1.73 m<sup>2</sup>. The patient was stable on all fronts until her last visit 1 month ago, when her potassium level was found to be elevated at 5.5 mEq/L and she was noticed to have trace pedal edema. She Initiate newer was asked to hold off taking spironolactone, potassium binder to increase furosemide to 40 mg daily, and to therapy temporarily cut back on her consumption of potassium-rich fruits until her follow-up visit today. Gender: Female Age: 68 years Continue a Weight: 84.00 kg Height: 162.6 cm loop diuretic BMI: 31.8 Allergies: None

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# < .001 < .001 < .001

# CONCLUSIONS

- VPS that immerses and engages specialists in an authentic and practical learning experience can improve evidence-based clinical decisions related to patient identification and management of hyperkalemia
- Persistent educational gaps were uncovered related to:
  - Diagnosis of chronic/sustained hyperkalemia
  - Use of newer potassium binders
  - Nutritional counseling and patient education

#### DISCLOSURE

The author has nothing to disclose.

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For more information, contact Amy Larkin, PharmD, Senior Director, Clinical Strategy, Medscape, LLC, at alarkin@medscape.net.



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