

The Future of Urology: Results of the AUA Residents and Fellows Committee Essay Contest

INTRODUCTION

The history of urology has been characterized by an innovative spirit through which our relatively small specialty has long been at the cutting edge of medicine and surgery. Indeed, from hormone therapy for metastatic cancer to complex urinary diversion to minimally invasive and robotic surgery, resourceful and inventive urologists have created a present where we have the opportunity to positively impact the lives of millions of patients.

Here, with the theme “The Future of Urology,” we asked urology trainees to look into the future of our specialty and paint their vision of what is to come.

The Residents and Fellows Committee received dozens of submissions with versions of the future ranging from aspirational to pessimistic, with concepts including bioengineered organs, augmented reality and artificial intelligence.

Many exceptional essays from trainees from across the nation and around the world were reviewed, with 3 receiving honorable mention meriting their publication on the AUA website. One essay in particular, authored by Avi Baskin, MD, MPhil, a fifth-year urology resident at the University of California, San Francisco, stood out and earned publication here in *The Journal of Urology*®.

Dr. Baskin presents a vision of the future of urology that is not entirely optimistic, with advances in data science and technology leading to improvements in patient care at the expense of the art of medicine and physician autonomy and discretion. The essay is also quite humorous, with the all-too-believable SmartToilet™ taking the world by storm after being lambasted on Twitter.

Critically, he highlights that while data and technology may play increasingly important roles in the practice of our specialty and medicine in general, the humanistic component of urology can never be erased.

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The notification flashed in the top corner of Dr. Mohamad’s right contact lens as he wheeled the last case of the day to the recovery unit: “ED consult—Mr. Smith, 70-year-old man 2 weeks post-prostatectomy.”

Dr. Mohamad, a fourth-year urology resident at Big HealthCare, sighed.

Two weeks ago, the hospital’s Artificial Intelligence Unit reported to Dr. Mohamad that Mr. Smith had only a 2% chance of readmission, but he remembered feeling his return was inevitable. However, since the Data in Healthcare Act, Big HealthCare no longer believed “gut feelings” were a good use of hospital resources. To be fair, there was a reason—the machine-learning model revolutionized medicine. Every day, millions of data points predict which patients will have strokes, alert physicians of missed diagnoses and even suggest what ice-breakers would best build rapport in clinic. At Big HealthCare, it seemed the intuition and reasoning of a doctor took a back seat.

As he rode the elevator down to the emergency department, Dr. Mohamad found his thoughts focusing on the toilet...specifically the SmartToilet™ and its meteoric rise. One day, these nifty little gadgets were the laughingstock of Twitter. The next, they were a multibillion-dollar industry. All it took was the discovery that trending urine quality after surgery perfectly predicted readmission and mortality. He chuckled and said to himself, “No algorithm could’ve predicted the success of those bad boys.”

His good mood soured as he saw his contact lens flash with patient information as he approached the room. He noticed it immediately: “positive surgical margin.” Dr. Mohamad specifically remembered that the Artificial Intelligence Unit indicated an “average fourth-year surgical-urology track resident has less than a 5% chance of a positive surgical margin on this case.”

Selfishly, Dr. Mohamad’s thoughts turned to his career. The 3 residents in his starting cohort opted for the “office-based urology track” and had finished training 2 years ago. He had hoped to demonstrate

proficiency and reach his needed metrics for independent practice faster. This poor outcome wouldn't help.

As he spiraled deeper and deeper, a flash yanked him out of his existential vortex. His trusty, omnipresent right contact lens had more news: "STAT—please come see Ms. Lopez, urology patient, 3-East."

"My medications are ALL WRONG," Ms. Lopez's immediately recognizable voice called down the third floor corridor.

"Our award-winning system is optimized for patient outcomes," reassured the nurse. "And it is almost certainly the correc—"

"I DON'T CARE about your *award*. Do any of you actually know what you're doing?"

Dr. Mohamad stood outside for an extra second and centered himself. He prepared himself for the walk he had made thousands of times. He would listen to the patient. Gather the facts.



Work together to find the best path forward. Human to human. He would help her feel heard.

He got ready to step through the door, but right before he did, he thought to himself, "Maybe *I* am the future of medicine."

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Bio: Avi Baskin is a PGY5 Urology Resident at the University of California, San Francisco. He graduated from the David Geffen School of Medicine at the University of California, Los Angeles. He is currently completing a research year focusing on prostate cancer genomics and transcriptomics. He is interested in oncology and is currently applying to a Society of Urologic Oncology fellowship.

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