

Mind the Gap: Divergent Perspectives on Artificial Intelligence in Urology

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Background

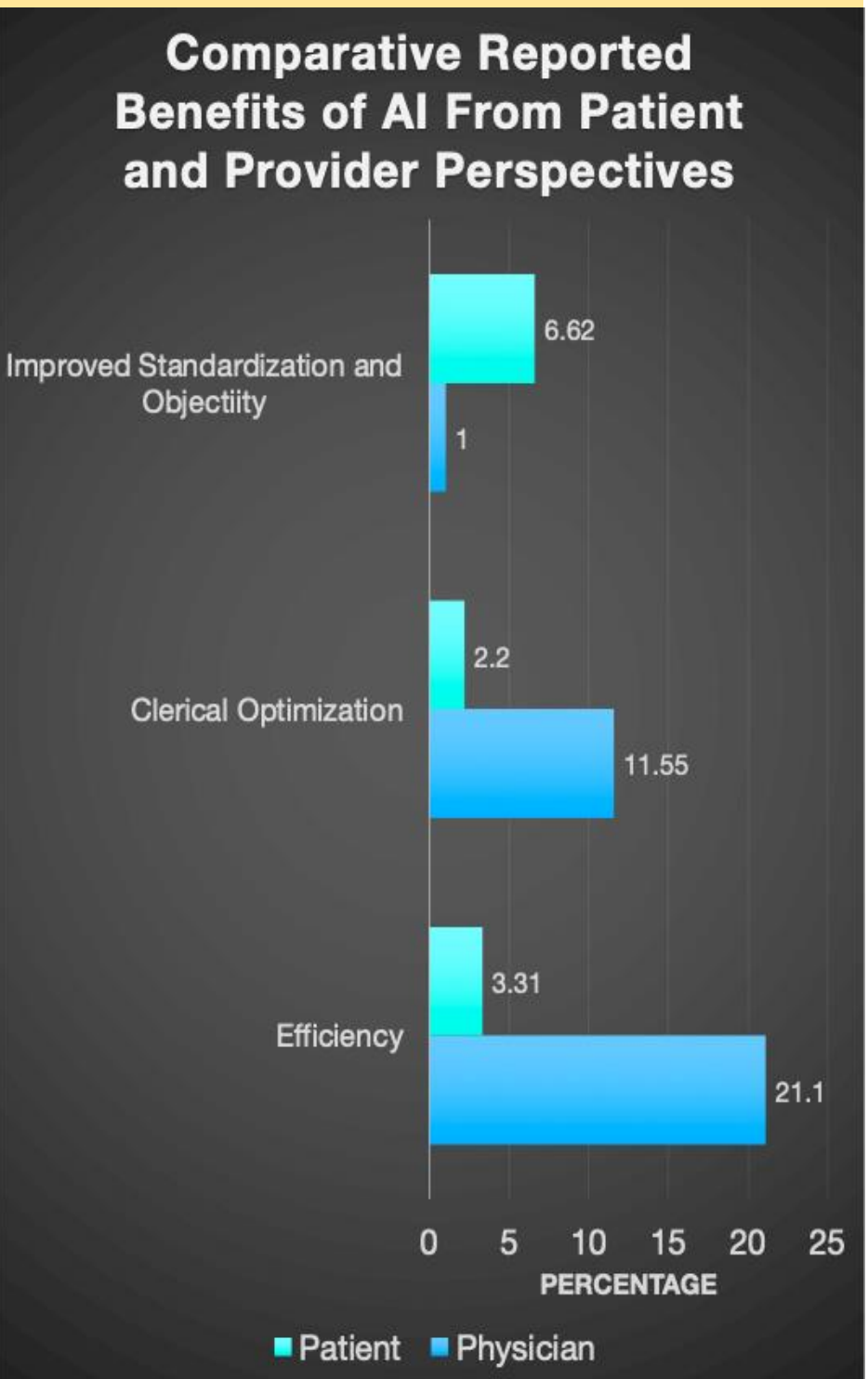
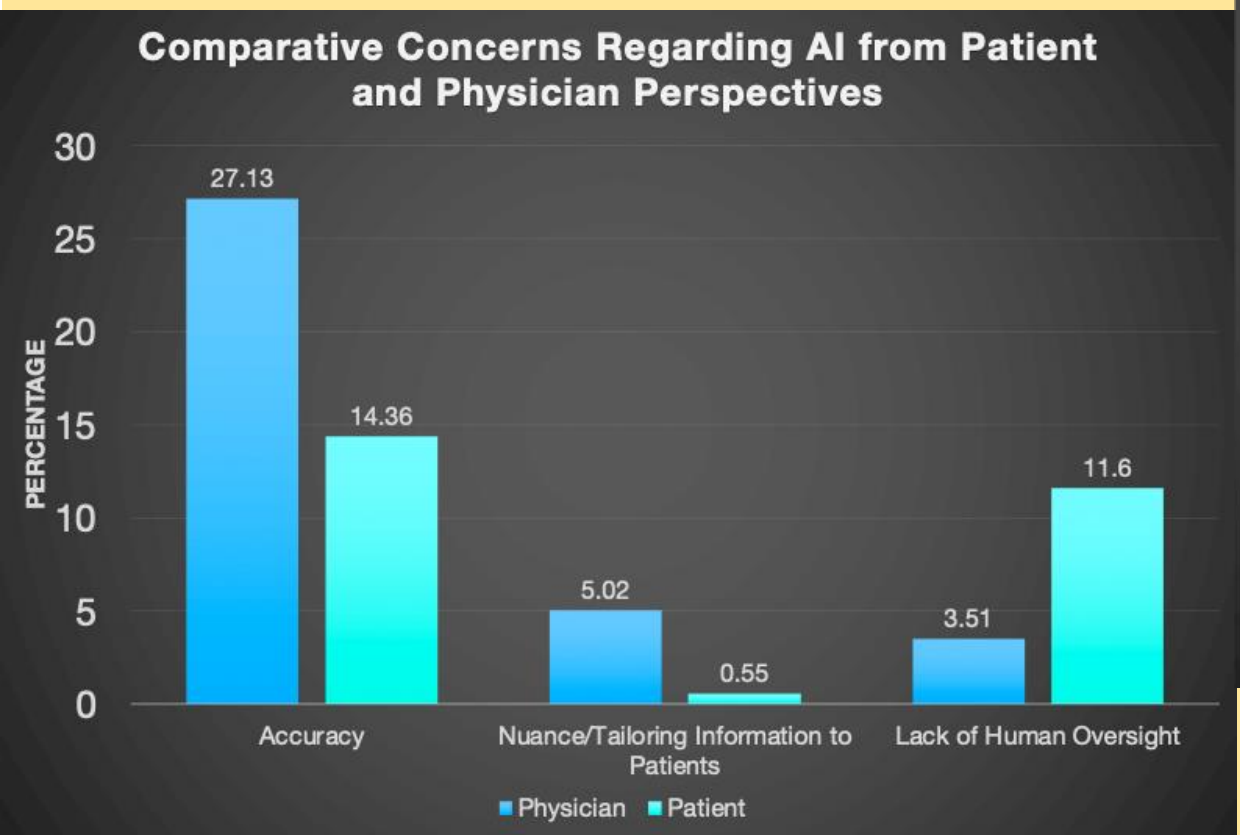
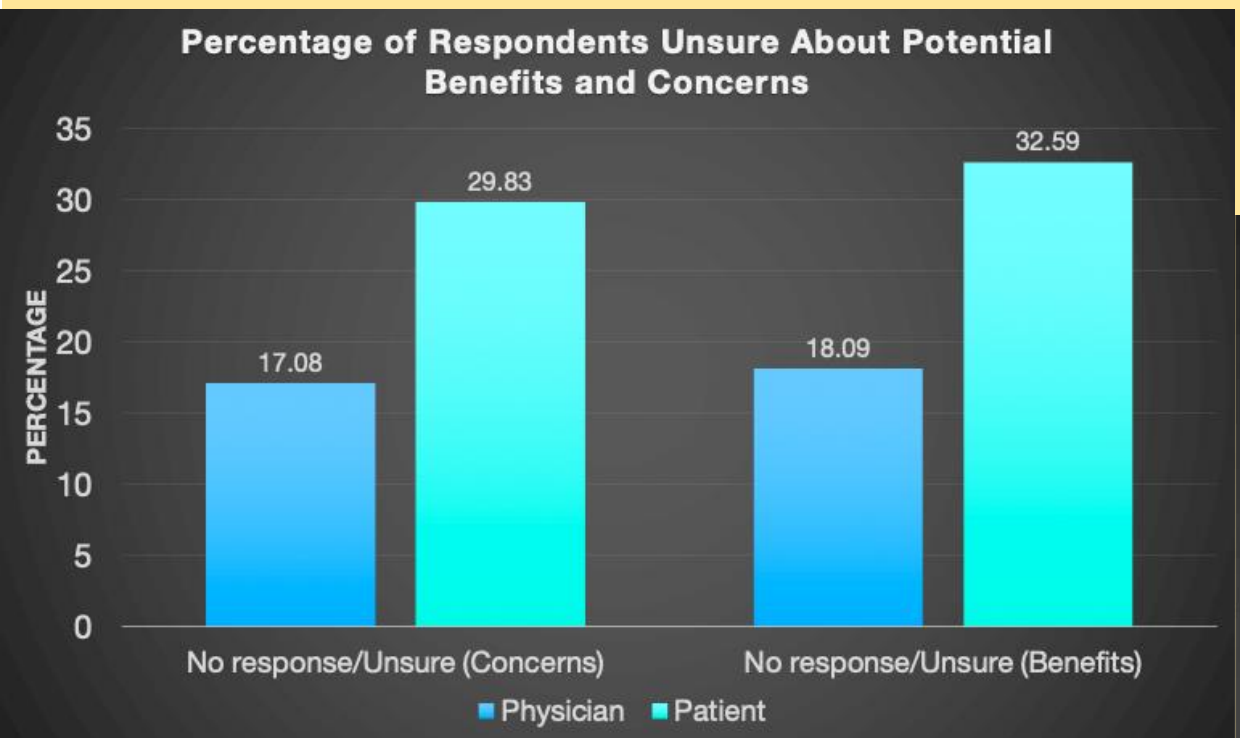
- The integration of artificial intelligence (AI) into urologic practice has emerged as a promising frontier, offering innovative solutions for diagnostic, prognostic, and therapeutic decision-making.
- AI is increasingly seen as having strong potential in urology: over 75% of respondents in one 2025 survey believed AI could improve patient outcomes, satisfaction, efficiency, and urology research.
- Despite enthusiasm, confidence in AI's accuracy is mixed—only about half (~54%) of participants in that same survey reported feeling confident in AI's accuracy, with a substantial proportion expressing neutrality.
- Physicians' ethical concerns about AI frequently include issues like confidentiality, non-maleficence (avoiding harm), transparency, and accountability.
- Key barriers to wider AI adoption identified in the literature include concerns about bias, explainability, loss of human control, regulatory oversight, and the need for clinical evidence / validation.

Methods

- A comprehensive literature review was conducted to assess AI's current and potential contributions to urological practice, including diagnostic accuracy, treatment planning, and patient outcomes.
- A survey was distributed through REDCap to members of the urology community to assess their awareness and understanding of the ethical and regulatory implications of AI adoption.
- In-depth interviews were conducted via videoconferencing with key stakeholders in urology, including practicing urologists, researchers, and policymakers, to gain qualitative insights into their perceptions and experiences with AI regulation.

Results

- Physicians more frequently reported concerns related to accuracy (27.1% vs. 14.4%, $p < 0.007$) and inability to tailor information to individual situations (5.0% vs. 0.6%, $p < 0.01$), while patients more frequently cited lack of human oversight (11.6% vs. 3.5%, $p < 0.004$).
- Patients were more unsure than physicians when reporting concerns (29.8% vs. 17.1%, $p < 0.01$) and benefits (32.6% vs. 18.1%, $p < 0.005$) of AI in healthcare.
- Physicians more frequently identified benefits in efficiency (21.1% vs. 3.3%, $p < 0.0001$) and clerical support (11.6% vs. 2.2%, $p < 0.0007$), while patients more frequently selected standardization (6.6% vs. 1.0%, $p < 0.005$) and general unspecified benefit (13.8% vs. 5.0%, $p < 0.005$).



Results

Table 1 – Respondent Demographics

	Physicians	Patients
Total	199 (52.4)	181 (47.6)
Gender		
Cisgender Male	175 (87.9)	179 (99.0)
Cisgender Female	22 (11.1)	0 (0)
Agender	1 (0.5)	0 (0)
Genderqueer	0 (0)	1 (0.5)
No response	1 (0.5)	1 (0.5)
Race		
American Indian/Alaskan Native	0 (0)	1 (0.55)
Asian	20 (10.1)	1 (0.55)
Black	6 (3.0)	1 (0.55)
Native Hawaiian/Pacific Islander	0 (0)	0 (0)
White	155 (77.9)	172 (95.0)
Other	17 (8.5)	0 (0)
Asian & White	0 (0)	1 (0.55)
White & Other	0 (0)	3 (1.7)
No response	1 (0.5)	2 (1.1)

Conclusion

- Physicians were more likely to endorse concerns about accuracy and loss of nuance, while patients more frequently noted lack of human oversight.
- Physicians more often perceived benefits related to efficiency and clerical support, while patients emphasized standardization and general benefits.
- Together, these findings demonstrate a perception gap between physicians and patients regarding AI in urology, which has implications for adoption, communication, and policy.