Impact of Industry Payments on Volume and Distribution of Robot-Assisted Surgery

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Introduction

- Despite evidence questioning its clinical benefit, the use of robot-assisted surgery (RAS) is increasing rapidly.
- In the US, almost a million RASs are performed annually.
- Robotics was introduced by specialty starting with Genito-urinary (GU), then Gynecology (GYN) and finally General Surgery.
- Evidence for impact of financial incentives provided by pharmaceutical industry on clinician's prescribing patterns is well documented. Policies and regulations were enacted to mitigate this effect.
- However, limited evidence exists linking surgical device industry incentives to use and dissemination of surgical technology.

Objective

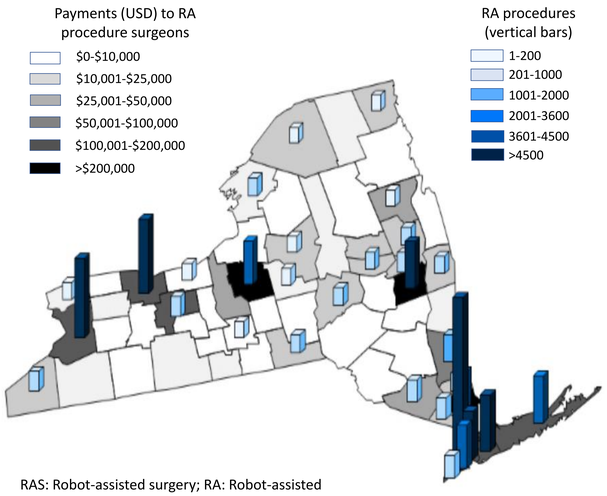
We examined the relationship between publicly reported device industry payments to providers and the current use of RAS in the US.

Methods

- We used 2014-2018 data from CMS's "Sunshine" OpenPayments Database and New York State's (NYS) Statewide Planning and Research Cooperative System (SPARCS).
- We examined temporal and geographic relationships between payments made by the surgical device industry and volumes of trunk robotically assisted laparoscopic surgery.
- Surgeries identified using CPT and ICD codes.
- 31 out of 62 NYS counties were classified as "metro" (>50% of population living in urban regions) and the rest as "rural" using U.S. Census Bureau's definition.

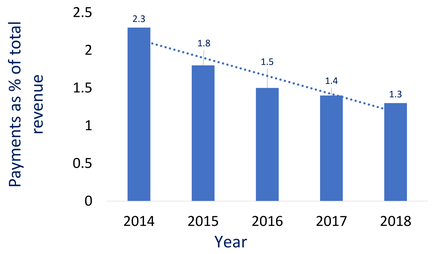
Results

RASs are concentrated in urban centers of NYS

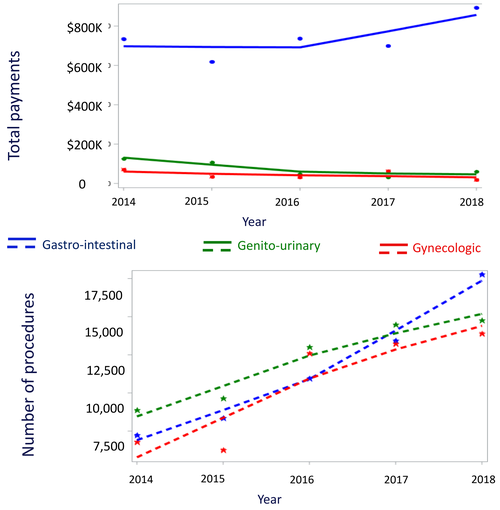


RAS: Robot-assisted surgery; RA: Robot-assisted

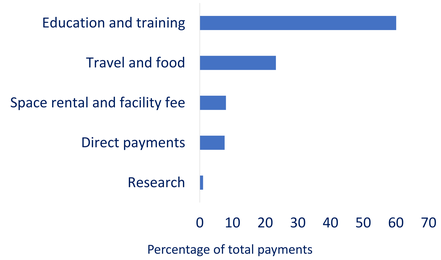
Proportion US device makers' revenue spent on providers decreased steadily



RA procedures and provider payments in General Surgery increased steadily



Payments toward research were less than 1% of total payments



Conclusions

- The number of general surgical robotically assisted surgeries is growing rapidly and now represents largest market.
- Robotic Surgery in NYS is concentrated to major urban areas.
- For General Surgery, while there is an increase in the amount of industry money spent, it still shows a decreasing trend in proportion to annual revenues.
- Research and outcome assessment is the least funded category of expenditure.

Implications/Next Steps

- The increase in surgical device industry payments was followed by the growth in RAS volumes.
- Geographic distribution of hospitals RAS availability may be related to health disparities.
- Surgical device industries should invest greater proportions of their net revenue towards research.

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Please send questions and comments to abh2@buffalo.edu

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SPARCS data was used following guidelines delineated in the data use agreement from New York State Department of Health