

San Francisco Health Network

Background¹

“San Francisco Health Network (SFHN) is an integrated health network for the city and county of San Francisco, providing primary, urgent, behavioral health, pregnancy, dental, diagnostic and specialty and wellness care services throughout 16 clinics and hospitals.”

Problem

SFHN leaders, including Lauren Goldman, MD, MCR, UCSF Professor of Medicine, implemented an overuse reduction initiative of diagnostic imaging such as CT scans, MRIs and ultrasounds for outpatient ordering.² Choosing Wisely recommendations from various medical societies propose reducing diagnostic imaging.³



Lauren Goldman, MD, MCR

Solution

SFHN leaders implemented a network-driven intervention through collaboration with stakeholders including radiology, primary care, and specialty care. Beginning in November 2012, they began “displaying the relative costs and radiation exposure for selected imaging studies at the point of clinician electronic order entry to help raise clinician awareness about the radiation exposure risks and costs associated with these tests.”²

Goldman explained that the project was piloted with the radiology department to help develop the intervention. Measures of cost estimates and radiation exposure were then developed. As the leaders of the effort explained in the 2016 BMJ Quality & Safety article, “A team of researchers and clinicians, including a radiologist, primary care clinician and radiologist nurse practitioner, developed relative scales for radiation exposure and cost information for CT, MRI and ultrasound. We used average Medicare reimbursement rates for groups of images by type of imaging and anatomical location to develop a scale of relative costs of CT, MRI and ultrasound.”²

Imaging data, including the number of studies performed in relation to the radiation exposure scale, was collected over a 24-month period. Sources included the Radiology Information System (Siemens Medical Solutions USA, Malvern, Pennsylvania, USA) and the Picture Archive and Communications Systems (Agfa Healthcare, Greenville, South Carolina, USA). To determine if the intervention reduced clinician ordering, SFHN leaders evaluated the change in test requests before and after radiation and cost information was displayed. Subsequently, primary care clinicians who utilized the electronic order entry system completed anonymous, web-based surveys to submit intervention feedback.²

Results²

- Ratio of CTs to ultrasounds decreased by 15%
- Ratio of MRIs to ultrasounds declined by 13%
- Surveys indicated most clinicians reported the radiation information was more influential to their clinical decision making than cost data

Challenges

- **Setting.** “Our study took place in an urban safety-net health system and may not be generalizable to clinicians practicing in other systems.”²

Keys to Success

- **Partnership.** Dr. Goldman stressed the importance of partnering early both within the health care system and with stakeholders interested in intervention. “Establishing partnerships within the health system, collaboration across disciplines and ongoing feedback from key stakeholders since the beginning of the project were key to successfully launching our project,” said Goldman.
- **Viewing the Project as an Ongoing Initiative.** “See your project as long-term and ongoing, as opposed to a one-time intervention. Our project had information continuously displayed when piloted on the existing EHR,” said Goldman.
- **Varied Data Evaluation.** “Be open to different types of data to evaluate. We used both quantitative and qualitative components in our study,” said Goldman.

Core Interventions²

- Collaboration across disciplines
- Ongoing feedback and information gathering from key stakeholders
- Anonymous survey responses from 300 primary care clinicians
- EHR triggers providing cost and radiation data
- Varied data evaluation

References

1. San Francisco Health Network. <https://www.sfhealthnetwork.org/>
2. Kruger JF, Chen AH, Rybkin A, Leeds K, Guzman D, Vittinghoff E, Goldman EL. Displaying radiation exposure and cost information at order entry for outpatient diagnostic imaging: a strategy to inform clinician ordering. *BMJ Quality & Safety*. January 2016.
3. List of Recommendations. <http://www.choosingwisely.org/getting-started/lists/>.
4. Goldman L Interview. ABIM Foundation. July 2019.



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