

ABSTRACT: 2015 ELAM Institutional Action Project Poster Symposium

Title: *Characterize the financial impact of the academic mission on the Health Care System*

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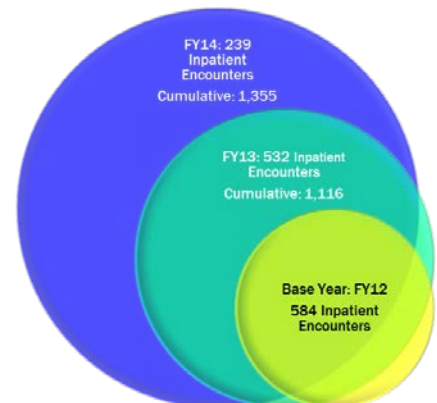
Collaborators: Sabrina Olsen, Associate VP Finance & Divisional CFO Duke University Hospital at Duke University Health System; Katina Williams, Director of Finance, Duke University Hospital and Josh Worrell, Finance Manager

Background: Sustainability of academic medicine requires alignment of the missions of the entities within individual institutions. At Duke, the School of Medicine is financially dependent on academic transfer of dollars from the Health System. It is therefore imperative that Duke Health System leadership have a clear and accurate understanding of the financial impact of the academic mission for the Health System. With the support of Sabrina Olsen, and in collaboration with Katina Williams and Josh Worrell in Corporate Finance, we have developed a strategy designed to better understand the downstream revenue generated by research patients in Ob-Gyn. This same strategy may be applied to other areas throughout the health system and will be an important framework.

Objectives: To develop a financial analysis model that will allow for accurate and detailed overview of the financial impact of research on the Duke Health System. Additionally, I sought to evaluate the impact of the academic mission on patient choice for health care in Ob-Gyn by surveying Ob-Gyn patients.

Approach: To accomplish this objective I obtained detailed lists of all Ob-Gyn patients enrolled in billing and non-billing risk research studies in FY12, 13 and 14. With the assistance of Corporate Finance the detailed health system financial records were merged with research subjects list, and analyses performed including comparison of average length of stay (ALOS), net revenue, direct cost per case and the direct contribution margin (DCM) per case. Health system inpatient encounters in FY13 and FY14 were also calculated for research subjects enrolled in research in FY12. In addition, a survey was designed to evaluate the impact of the academic mission on patient choice for Ob-Gyn care and is being distributed to patients via EPIC MyChart.

Outcomes and Evaluation Strategy: Preliminary analyses suggest that research subjects in obstetrics generate a DCM which is not significantly different compared to non-research patients (table). Of note, patients enrolled in research in FY12 generated an additional 532 inpatient encounters in FY13 and 239 in FY14 (figure). Additional planned analyses are ongoing. The methods used for the analysis will be applied to other clinical research areas in the health system. While the analysis does not suggest an increase in DCM for obstetric research patients the analysis strategy can be used to evaluate areas across the institution. Additional planned analyses include DCM and inpatient encounters for infants born to



	FY12		FY13		FY14	
	Research	Non Research	Research	Non Research	Research	Non Research
Cases	584	2,761	1,110	2,313	1,190	2,377
ALOS	3.32	3.29	3.32	3.44	3	3.32
Direct Cost/Case	\$3,927	\$3,800	\$3,705	\$4,526	\$3,793	\$3,873
Direct Contribution Margin/Case	\$243	\$73	\$193	\$462	\$328	\$442

obstetric research patients. Survey results will supplement the financial analysis and will also be used as a demonstration project first to use the Epic MyChart for distribution of a survey at Duke. Once finalized, the results of the analysis and survey will be presented to senior Health System leadership and School of Medicine leadership.



Characterize the Impact of Ob-Gyn Research on Health Care Finances and Patient Choice



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BACKGROUND

- Sustainability of academic medicine requires alignment of the missions of the various entities within individual institutions.
- At Duke, the School of Medicine is financially dependent on academic transfer of dollars from the Health System.
- It is imperative that Duke Health System leadership have a clear and accurate understanding of the financial impact of the academic mission for the Health System.
- Development of an approach for accurately calculating health system revenue generated by research patients will be an important first step in an attempt to objectively quantify the impact of research
- Development of a patient survey designed to better estimate the impact of the academic mission on patient choice will also provide important insights

OBJECTIVES

1. To develop a financial analysis model that will allow for accurate and detailed overview of the financial impact of research on the Duke Health System.
2. To develop a survey tool using the Duke Epic MyChart system to specifically evaluate the impact of the academic mission on patient choice for health care in Ob-Gyn..

APPROACH

Objective 1

- Obtained detailed lists of all Ob-Gyn patients enrolled in billing and non-billing risk research studies in FY12, FY13 and FY14.
- Detailed health system financial records merged with research subjects list, and analyses performed:
 - average length of stay (ALOS), net revenue, direct cost per case and the direct contribution margin (DCM) per case.
- Health system inpatient encounters in FY13 and FY14 were also calculated for research subjects enrolled in research in FY12.
- Percent of research subjects with inpatient encounter in FY12 that returned for inpatient encounter in FY13 and FY14 was compared to non-research patients

Objective 2

- Survey was designed to evaluate the impact of the academic mission on patient choice for Ob-Gyn care
- Survey is being distributed to patients via EPIC MyChart when an Ob-Gyn Provider closes a patient encounter

OUTCOMES

Objective 1 (Table 1, Figure 1 and 2)

- Ob-Gyn research patients generate a positive direct contribution margin
- Average length of stay, direct cost per case or direct contribution margin was not different when research patients are compared to non-research patients.
- Obstetric research patients are more likely to generate future inpatient hospital encounters than non-research patients

Objective 2 (Table 2)

- Duke and Duke Ob-Gyn's reputation as a leader in research influences patient choice
- Opportunities to participate in clinical research appear to be less important

Table 1. Duke Health System Financial Metrics

	FY12		FY13		FY14	
	Research	Non Research	Research	Non Research	Research	Non Research
Cases	584	2,761	1,110	2,313	1,190	2,377
ALOS	3.32	3.29	3.32	3.44	3	3.32
Direct Cost/Case	\$3,927	\$3,800	\$3,705	\$4,526	\$3,793	\$3,873
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Figure 1. Inpatient encounters generated by research

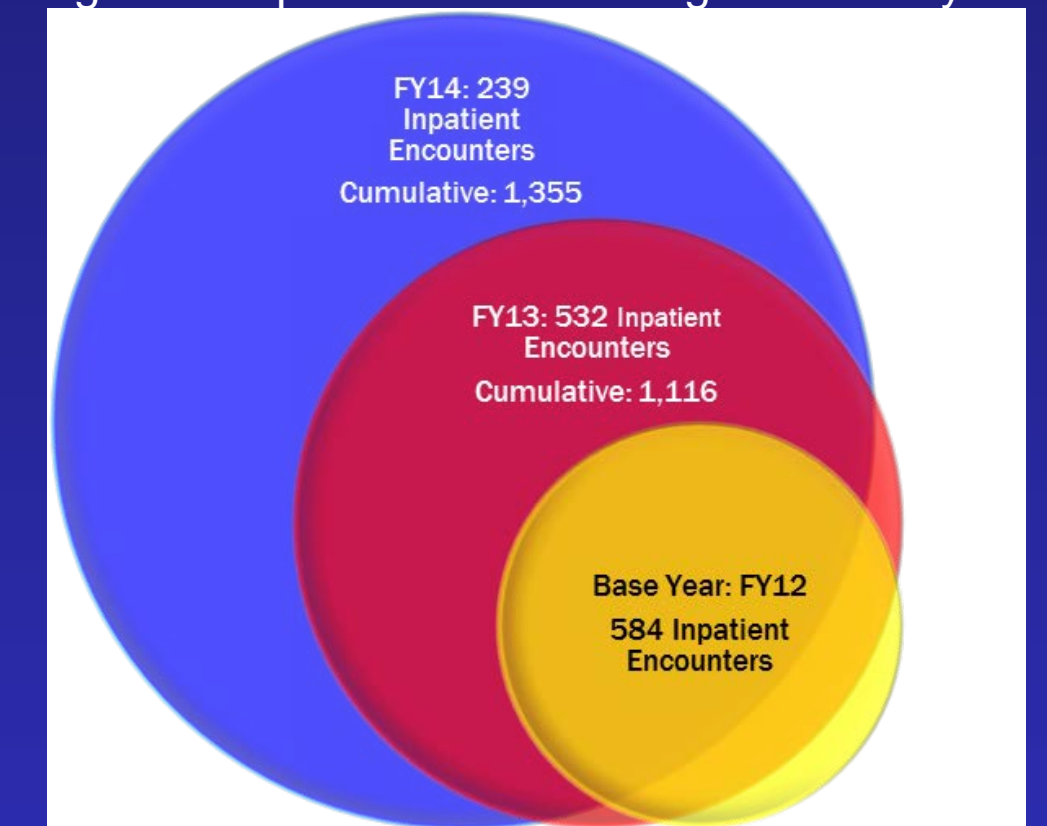


Figure 2. FY12 Patients that Return for Care in FY13/14

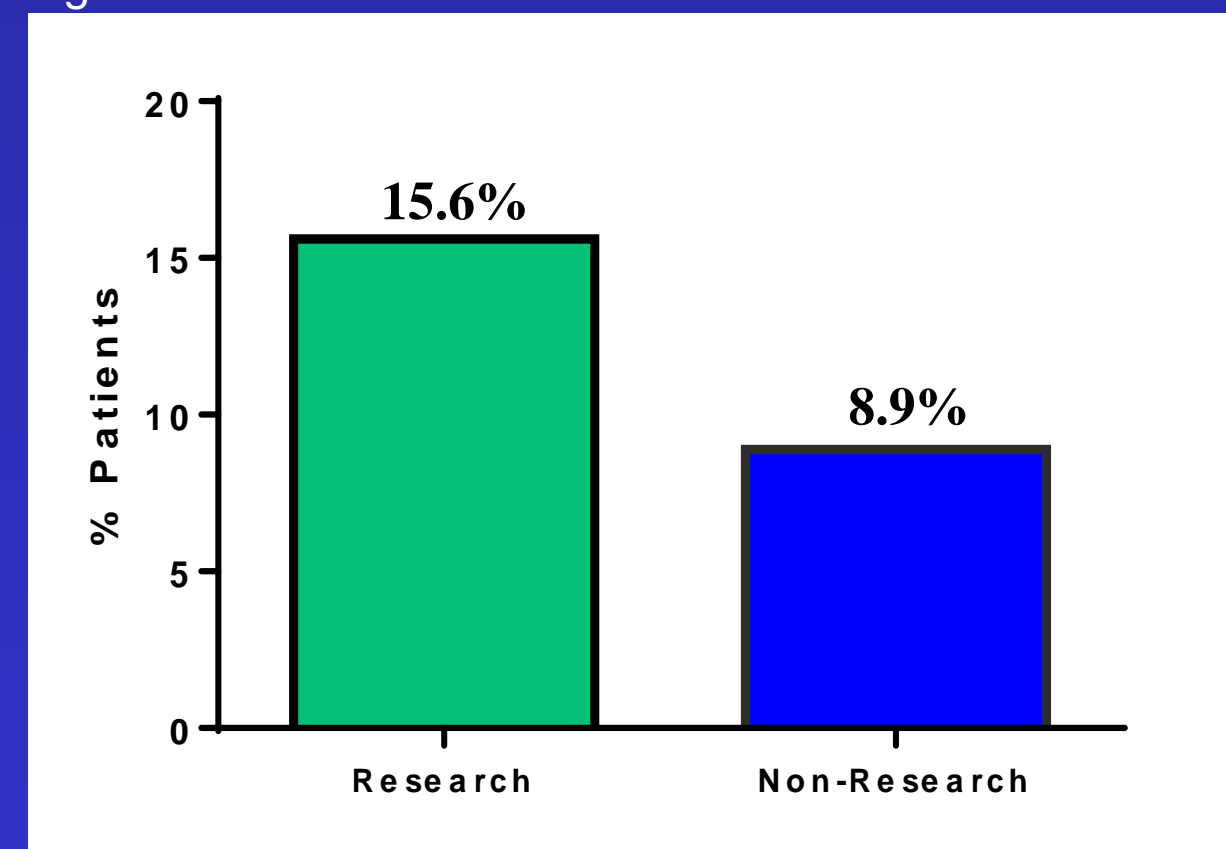


Table 2. Summary of survey responses

Survey Question	Agree/Strongly Agree
Duke's research reputation is important	90%
Duke Ob-Gyn research reputation is important	90%
Duke Ob-Gyn's reputation for health care	100%
Chose Duke Ob-Gyn based on recommendation or personal experience	65%
Opportunities to Participate in clinical research are important	35%
Future healthcare choices for family influenced by my Ob-Gyn experience	85%

CONCLUSION

- In obstetrics, clinical research does not consistently generate an increased direct contribution margin compared to non-research patients
- Research patients are more likely to return for inpatient care in future years compared to non-research patients
- Duke and Duke Ob-Gyn's reputation in research is an important determinant of patient choice for care
- Opportunities to participate in clinical research are less important to Ob-Gyn patients
- A model designed to evaluate the financial impact of research on the Health System can be employed to evaluate departmental research efforts