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Pregnancy: A Window into Future Cardiovascular Risk

What Do We Know and What Can We Do at LVHN?

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Background

- In 2011, the American Heart Association (AHA) recognized adverse pregnancy outcomes (APO) such as preeclampsia (PEC) and gestational hypertension as non-traditional cardiovascular risk factors for women¹
- PEC leads to a four-fold increased risk of heart failure, and a twofold increased risk of coronary heart disease (CAD), stroke, and death later on in life²
- A 2017 Capstone study at Lehigh Valley Health Network (LVHN) indicated that providers were not comfortable addressing patients on APO and future CVD risk
- Results indicated a desire for education through grand rounds, and electronic medical record (EMR) tools to better counsel patients³

Problem Statement

- Can grand rounds and EPIC smart tools increase providers' comfort level in counseling patients on adverse pregnancy outcomes serving as a risk factor for future cardiovascular disease?

Methods

- A grand rounds presentation was created and presented to providers in family medicine, obstetrics and gynecology, and internal medicine
- An EPIC smart tool template was created to facilitate outpatient cardiovascular screening for women
- A voluntary, anonymous, multiple choice paper survey was administered immediately before and after the presentation to assess providers' knowledge, current behaviors, and opinions
- Survey responses were analyzed using descriptive and inferential statistics
- Study was deemed non human subjects research by IRB

Results

Field of Medicine	Number of Participants	Percentage
Obstetrics and Gynecology	22	25.9%
Family Medicine	21	24.7%
Internal Medicine	18	21.2%
Other	24	28.2%

Table 1. Demographics of survey responders (N= 85)
 "Other" includes: Cardiology, maternal fetal medicine, Infectious disease, gastroenterology

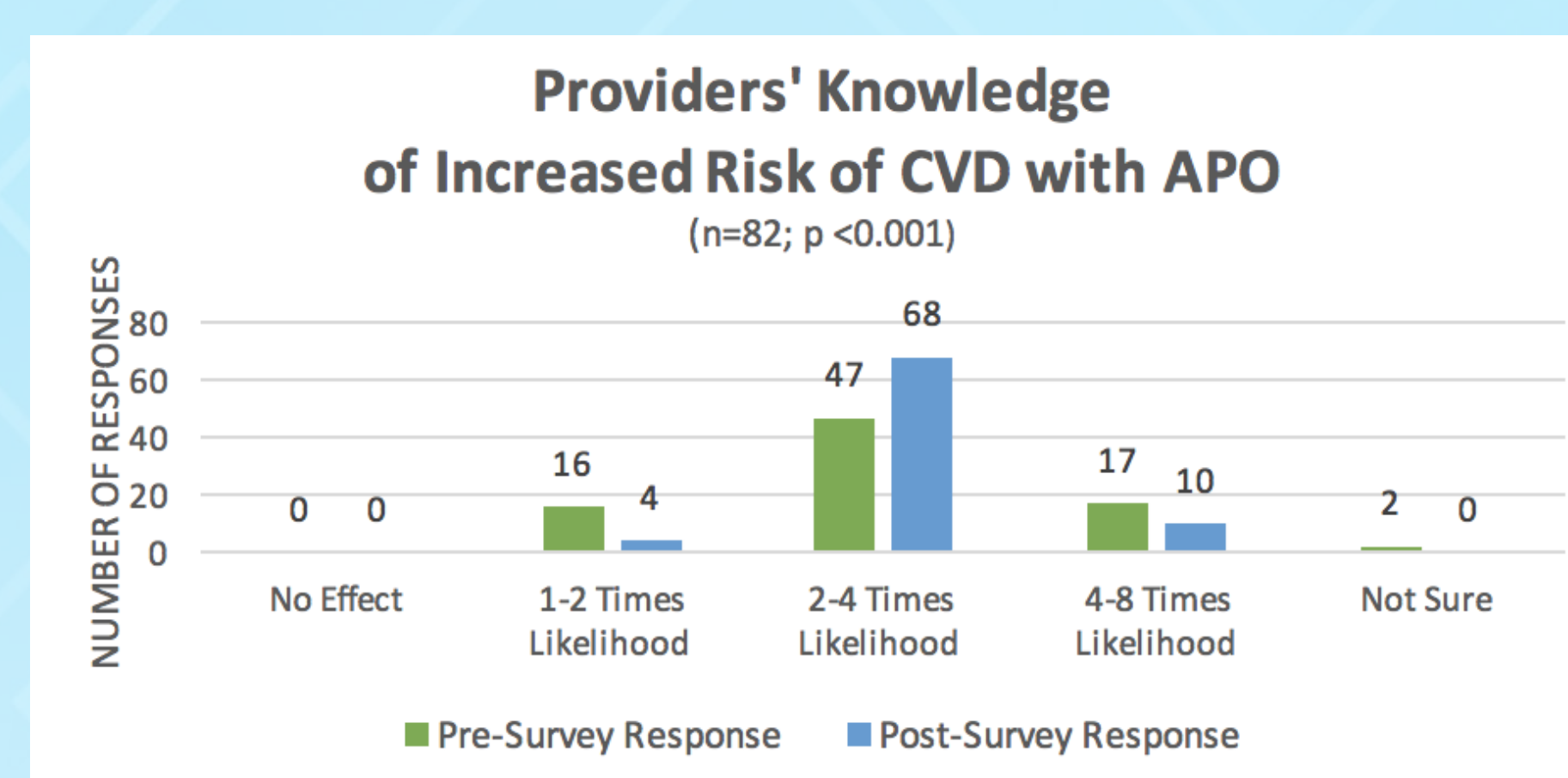


Figure 1. Providers' knowledge of risk of CVD after APO increased following grand rounds from 57.3% to 82.9% (p<0.001)

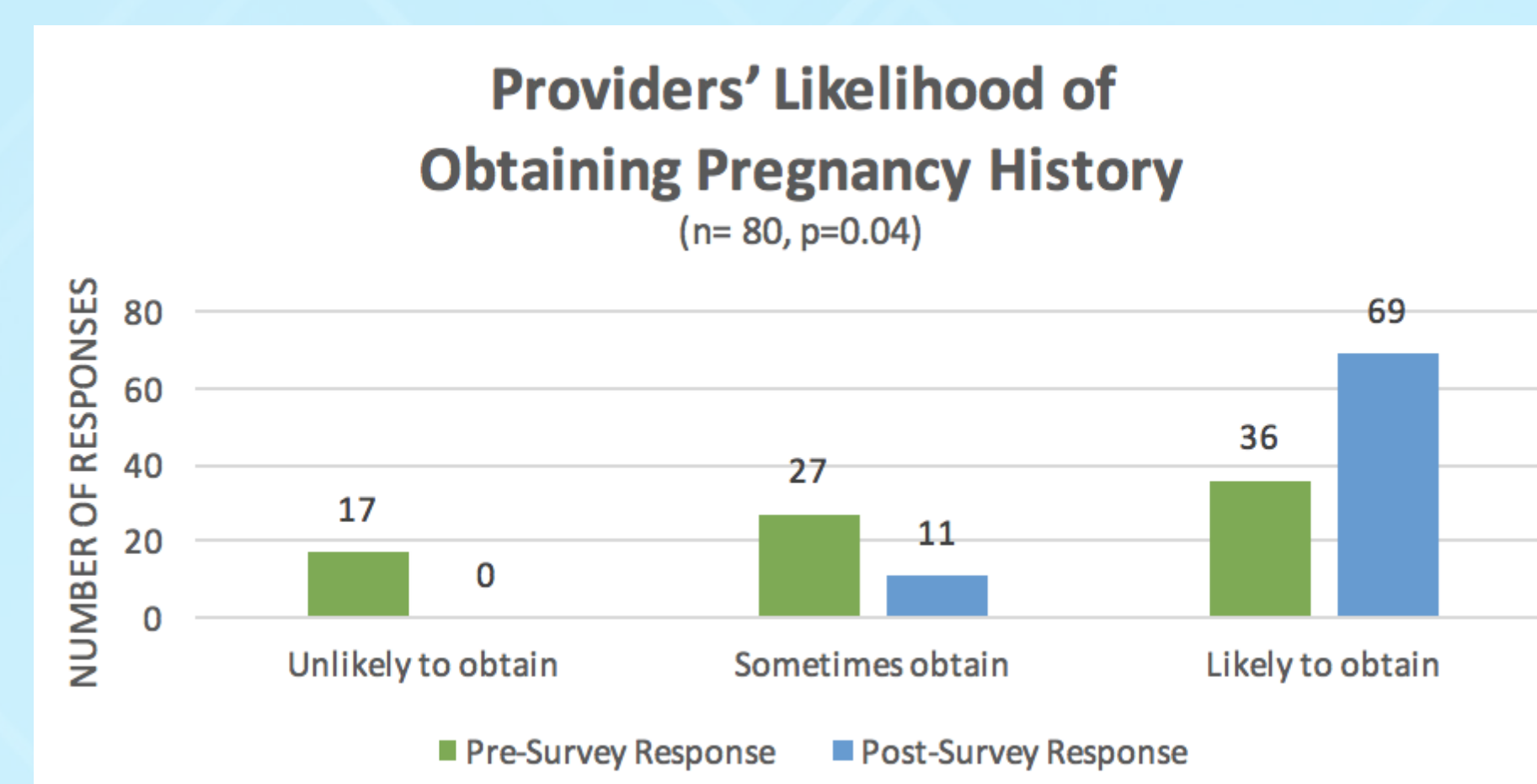


Figure 2. Providers' likelihood of obtaining pregnancy history increased following grand rounds from 45.0% to 86.3% (p=0.04)

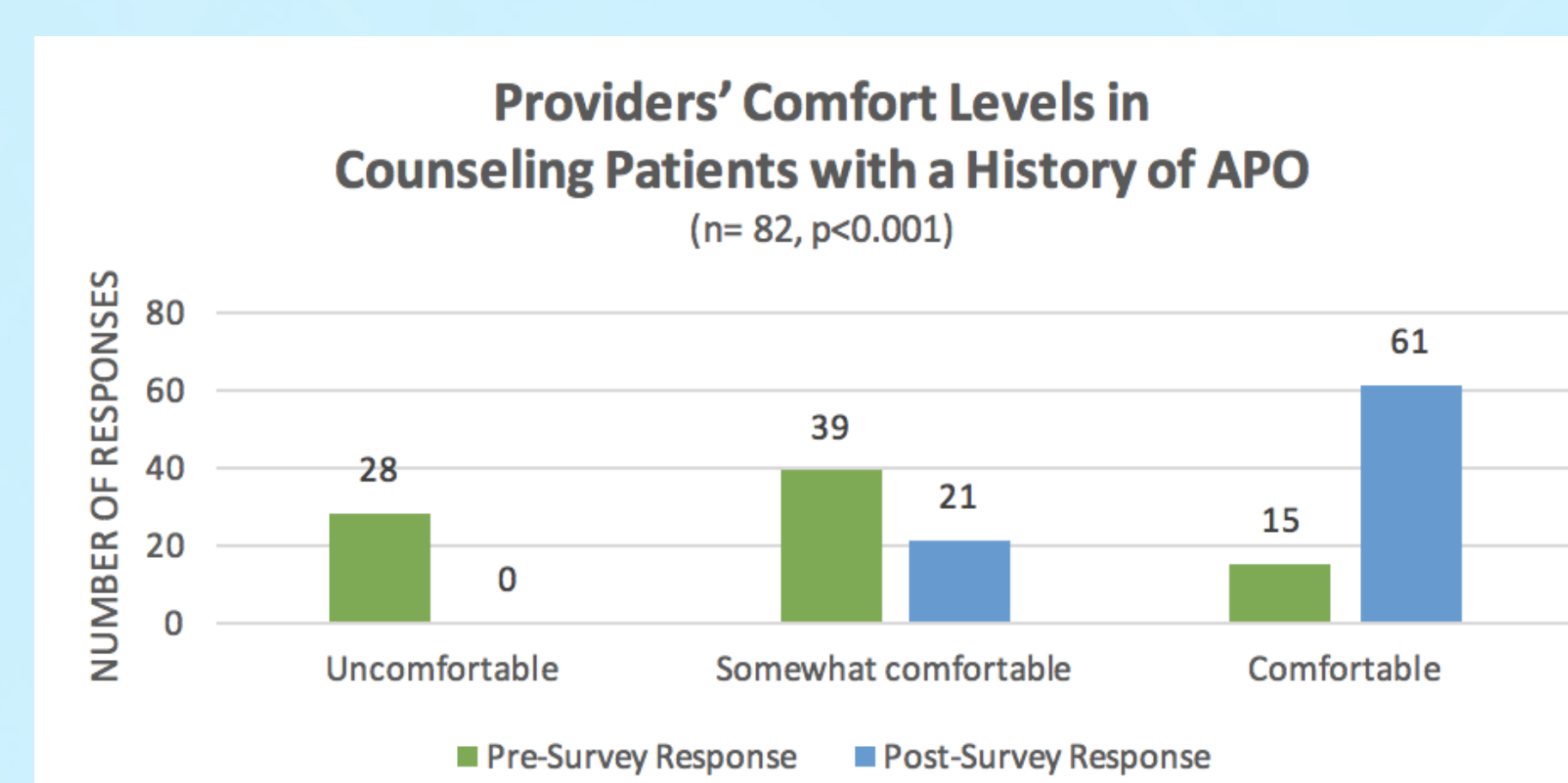


Figure 3. Providers' comfort levels in counseling patients on APO leading to risk of CVD increased following grand rounds from 18.3% being comfortable to 74.4% (p<0.001)

- Majority of responders across all specialties:
 - 76.9%** would utilize the EPIC tools described in the grand rounds
 - 74.6%** believed the EPIC tools could save time in the outpatient setting
 - 65.8%** believed more education and more EMR tools could be desired in the future

Discussion

- Primary goal:** Grand Rounds improved provider knowledge, likelihood, and comfort in counseling patients about APO and the risk of CVD
- Secondary goal:** Majority of providers believed EPIC tools could be utilized, and would save time when counseling patients
- Study limitations:** Survey only assesses provider perspectives immediately following grand rounds. Future studies should reassess perspectives and behaviors over time, with opportunity for providers to trial EPIC smart tools
- SELECT principles:** This disease phenomena connects cardiology and Ob/Gyn, and encourages interdisciplinary collaboration. EPIC tool encourages patient centered care

Conclusions

- The 2017 Capstone study assessing providers' perceptions of APO and future CVD risk cited lack of knowledge and time as barriers to care³
- Results of this study suggest that medical providers' knowledge and comfort level surrounding APO and future CVD risk increased following educational grand rounds
- This suggests that education and clinical tools can increase provider comfort and preparedness in addressing the cardiovascular health of patients with a history of APO

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