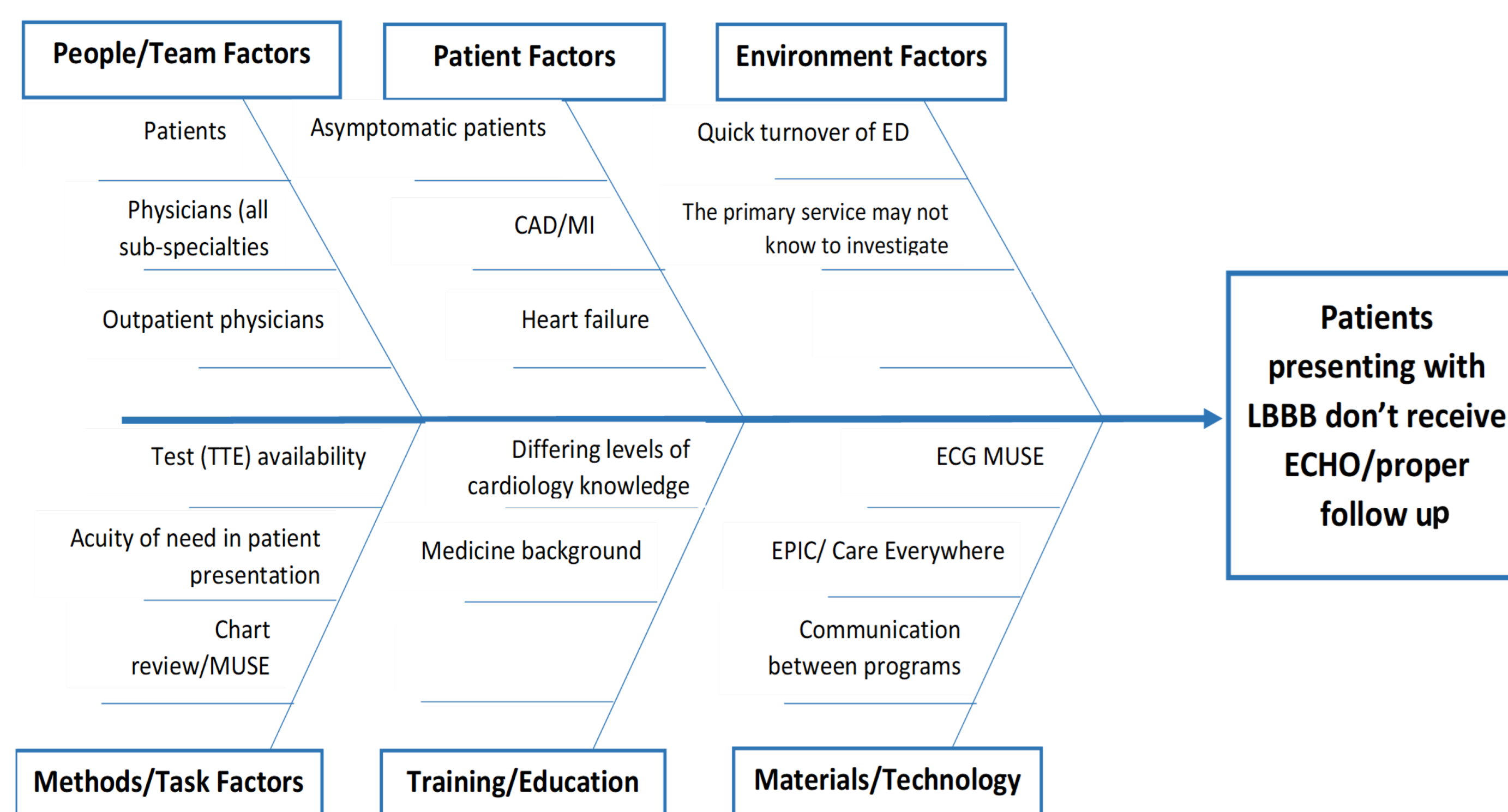


Problem Definition

Left bundle branch block (LBBB) is a pathologic finding on electrocardiogram (ECG).

- Most commonly present in patients with antecedent hypertension, cardiac enlargement, coronary artery disease or a combination of these¹.
- Class 1B recommendation: Those with findings of LBBB on ECG should undergo transthoracic echocardiography for evaluation of underlying heart disease².
- LBBB is prevalent (33%) in patients with heart failure³.
- Cardiac resynchronization therapy can improve left ventricular mechanical function in patients with LBBB (QRS >150 msec)⁴.

This study aims to understand how effectively we are evaluating and following up these patients at Thomas Jefferson University Hospital.



Aims For Improvement

- S** 1. Determining the percentage of patients over the course of two years diagnosed with a LBBB on ECG without follow up echocardiogram or cardiology referral.
- M** • Improvement in number of patients with proper diagnostic evaluation and follow up
- A** • Collaboration with the cardiology department we can promote education on the topic
• Discussing EPIC alert for patients with LBBB on their chart
- R** • Change would mean more patients receiving guideline directed therapy and possibly improving symptoms
- T** • Yearly assessment and improvement

Measurement and Results

Retrospective Chart Review

ECG MUSE queried for ECGs with "LBBB" or "Left Bundle Branch Block" in interpretation section = 7,288 Patients (2017/2018)

Excluded: 6,866 patients, most of these patients had "not LBBB/Left Bundle Branch Block" written as an interpretation

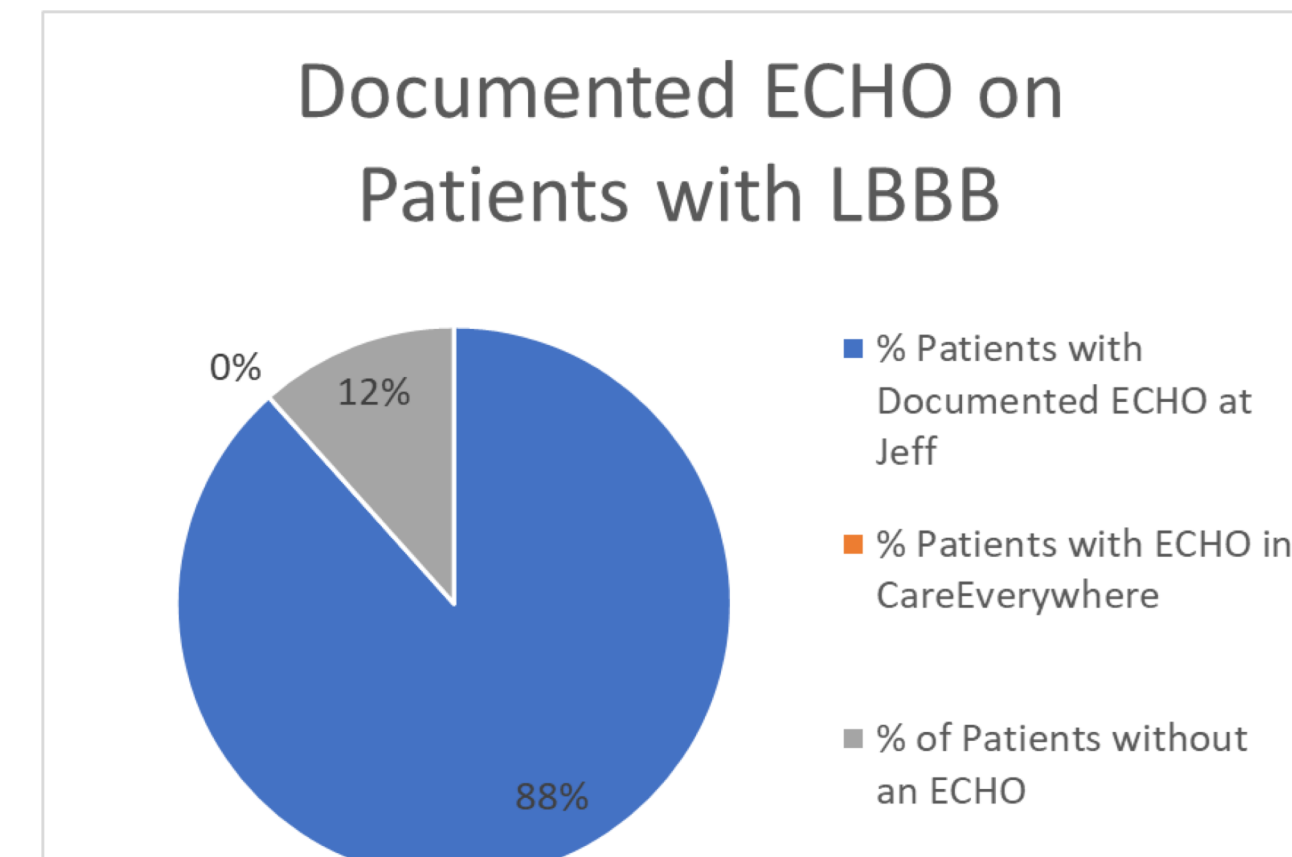
422 Patients (2017/2018) with "LBBB/Left Bundle Branch Block" or "Atypical LBBB" as an interpretation

2017 2018

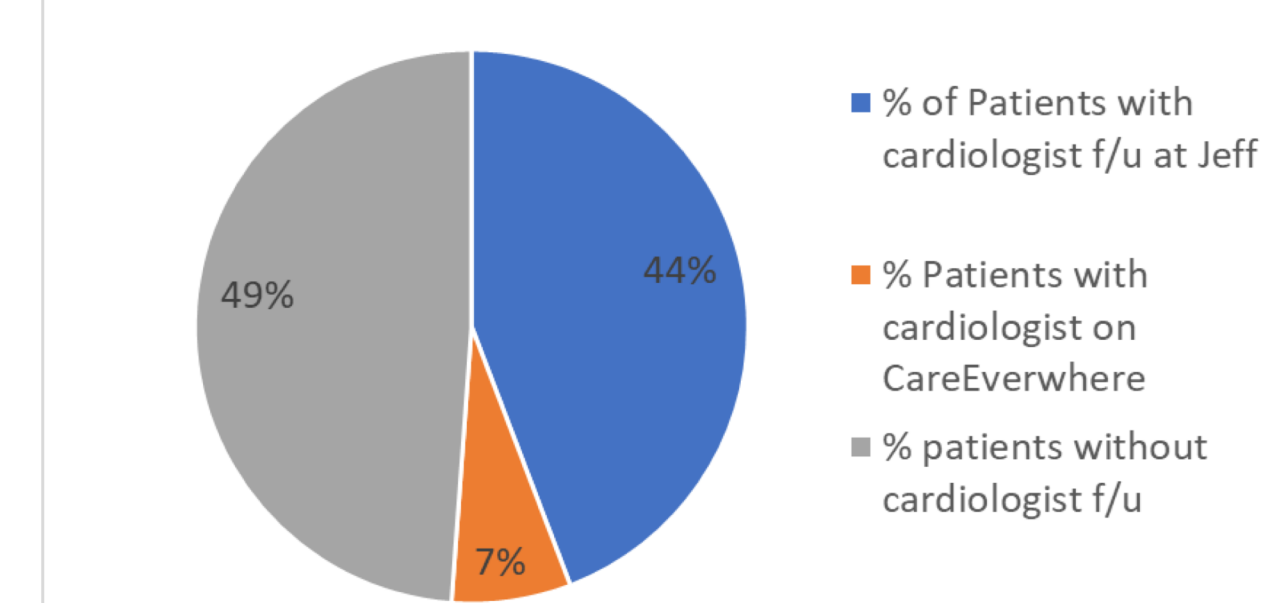
160 patients chart reviewed

Excluded: 74 patients
• Duplicate patient
• Paced Rhythm
• NSIVCD
• Poor tracing

86 patients confirmed with LBBB



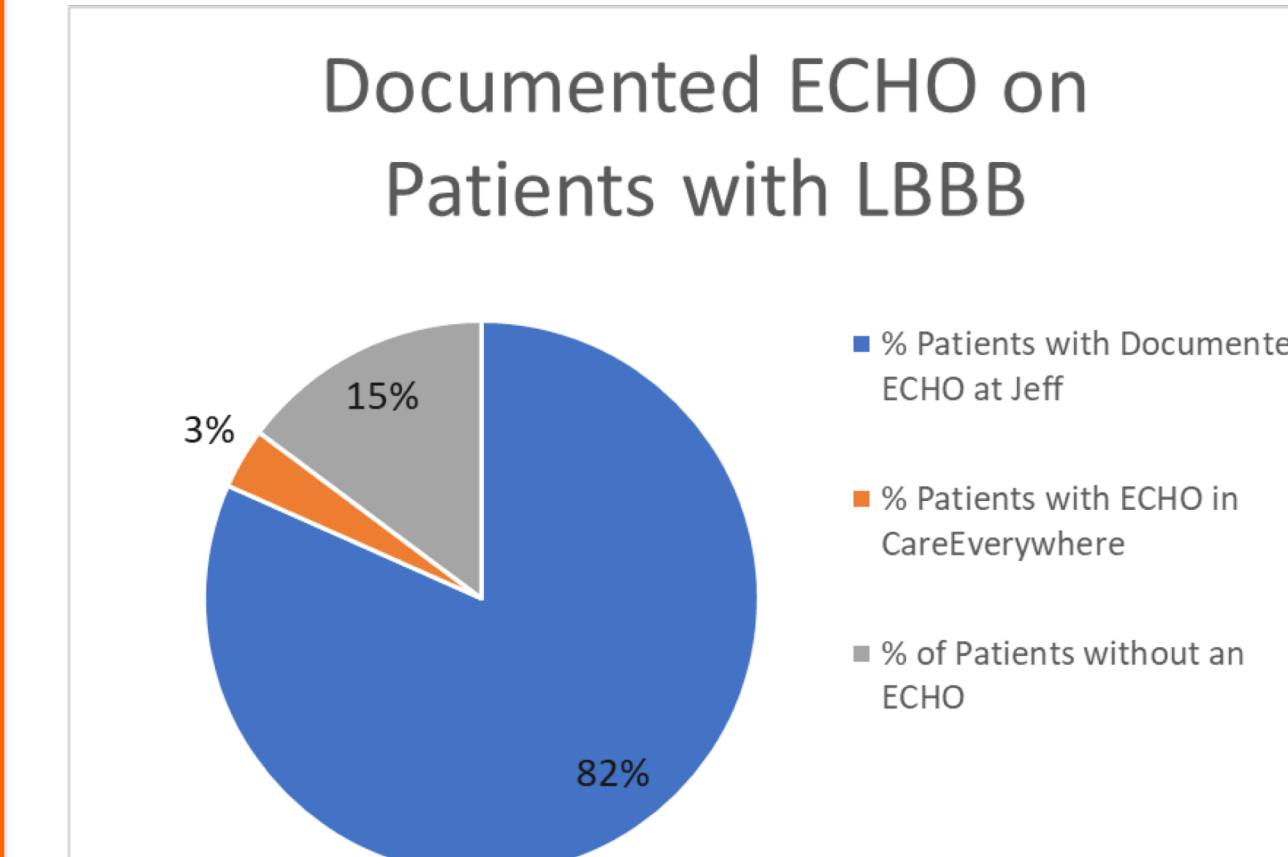
Cardiology Follow up Among Patients with LBBB



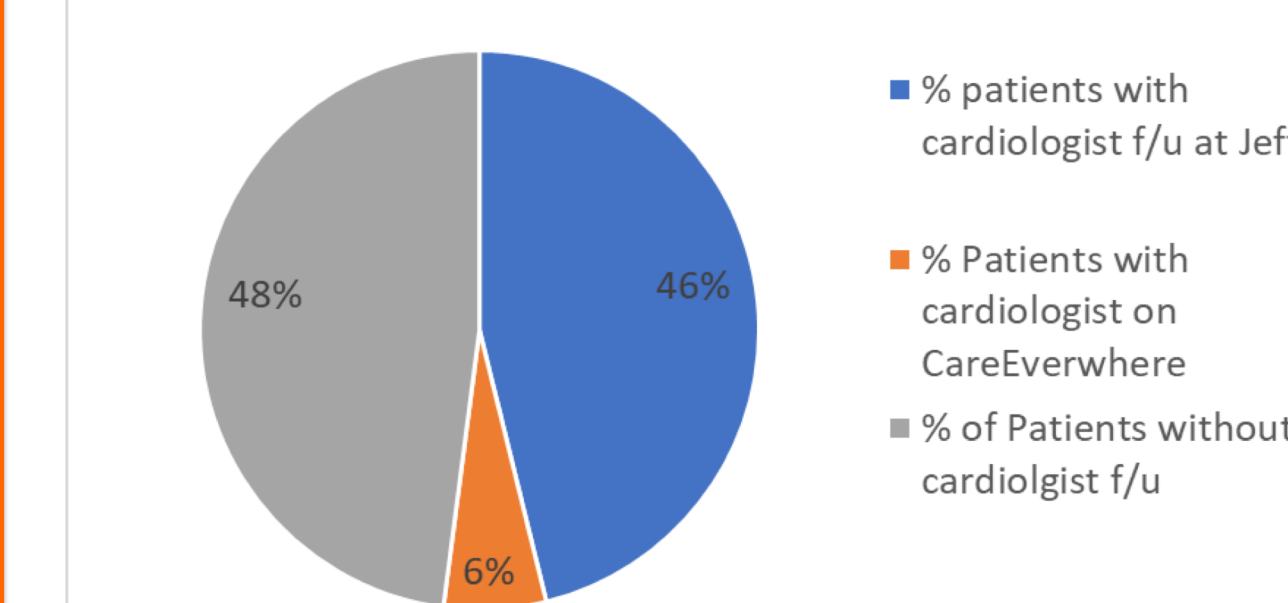
260 patients chart reviewed

Excluded: 91 patients
• Duplicate patient
• Paced Rhythm
• NSIVCD
• Poor tracing

169 patients confirmed with LBBB

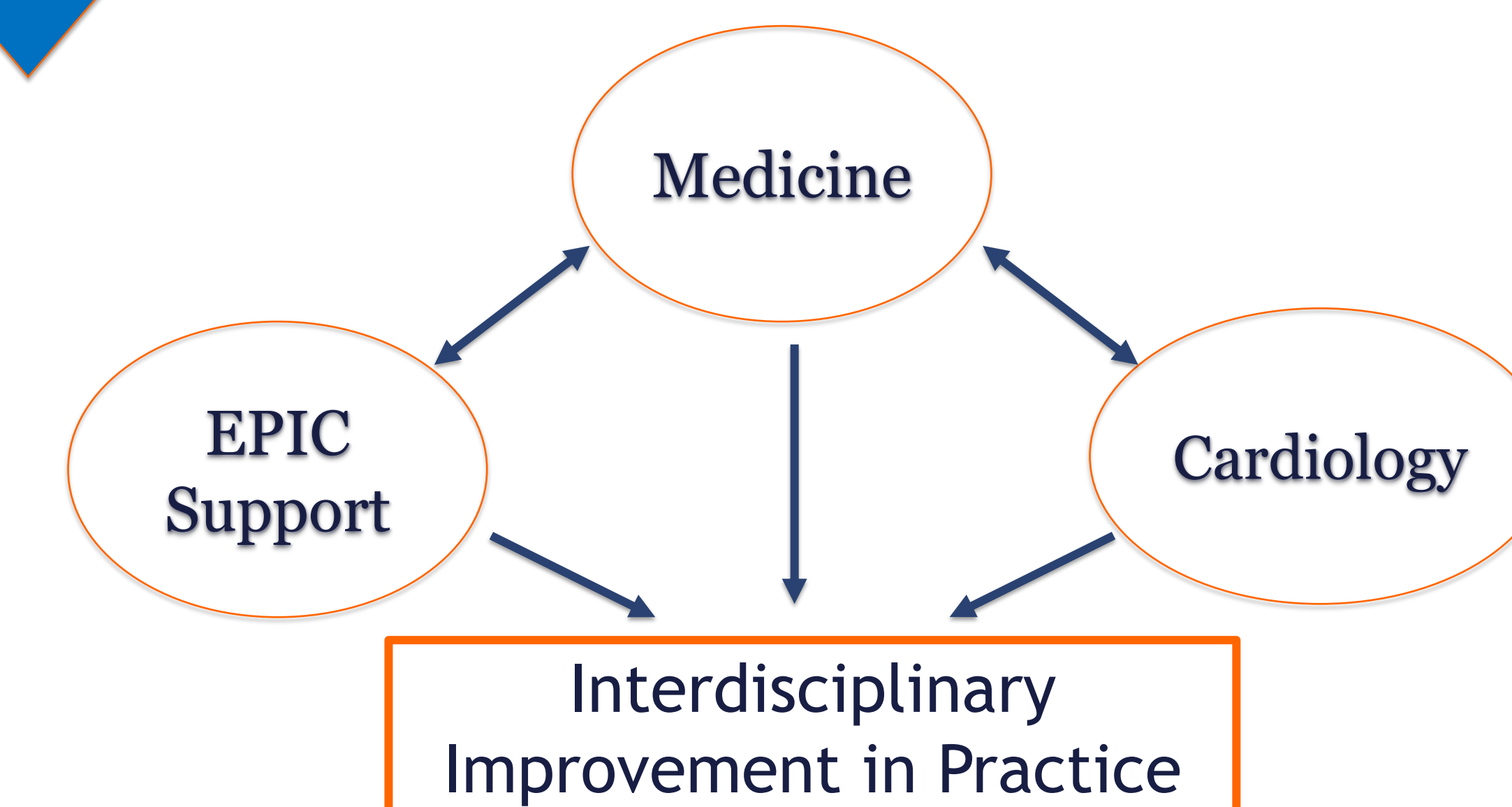


Cardiology Follow up Among Patients with LBBB



Proposed Intervention / Next Steps

1. Gauge interdisciplinary understanding through survey that a LBBB should be further evaluated
2. Target weaker responders for education and reminders
3. Discuss with EPIC support about adding LBBB as an indication when ordering an ECHO
4. Once LBBB identified, create best practice advisory that suggests referral to cardiology, ECHO, and to add the diagnosis to the patient's problem list.
5. Analyze data from 2019
6. Expand data analysis to determine whether patients diagnosed with LBBB and with an EF <40% were properly referred to an electrophysiologist to determine candidacy for cardiac resynchronization therapy or whether they underwent ischemic evaluation.



Limitations of Study

1. Initial ECG review and exclusion relied upon the computer generated impression and were not manually read by the team.
2. The computer program may not have read the conduction delay correctly, therefore missing a left bundle branch, instead labeling it a non-specific IVCD.
3. Varying levels of ECG reading experience
4. Patients may follow up with a cardiologist not in the Jefferson or Care Everywhere system

References

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