

Impact of an EHR-based tool on COPD management in Primary Care

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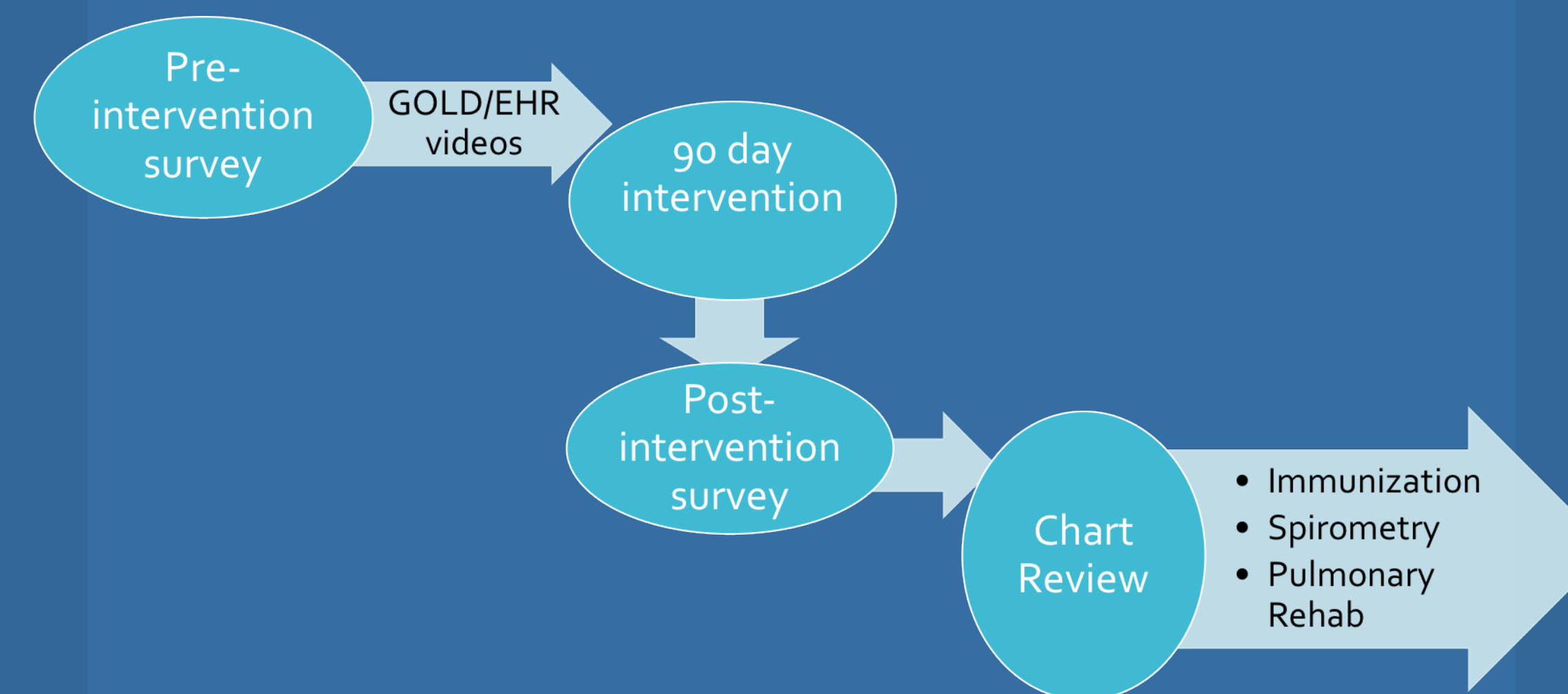
ABSTRACT

GOLD (2017) guidelines provide evidence based recommendations for treating COPD, although their employment in clinical practice is inconsistent. Lack of a standardized method to view COPD specific information within the EHR during patient encounters complicates visits and development of GOLD-guided treatment plans. Our goal is to determine the impact of an EHR-based tool on relevant COPD disease measurements (spirometry rates, pneumococcal vaccination rates and COPD Action plans)

INTRODUCTION

- COPD 3rd leading cause of death in the US in 2010 and 3rd leading cause of death worldwide by 2020
- Disease exacerbations impact quality of life and increase hospitalizations costing \$32.1 billion in 2010 and \$49 billion in 2020
- Preventative measures and disease management key to reducing number of exacerbations
- Barriers to GOLD guidelines use in Primary Care – lack of awareness, time constraints
- Primary Care Providers 1st line to diagnose/manage COPD symptoms

PROCESS



- Adult Primary Care office in Burlington Vermont
- 77 COPD patients identified, age > 18
- 9 participating providers

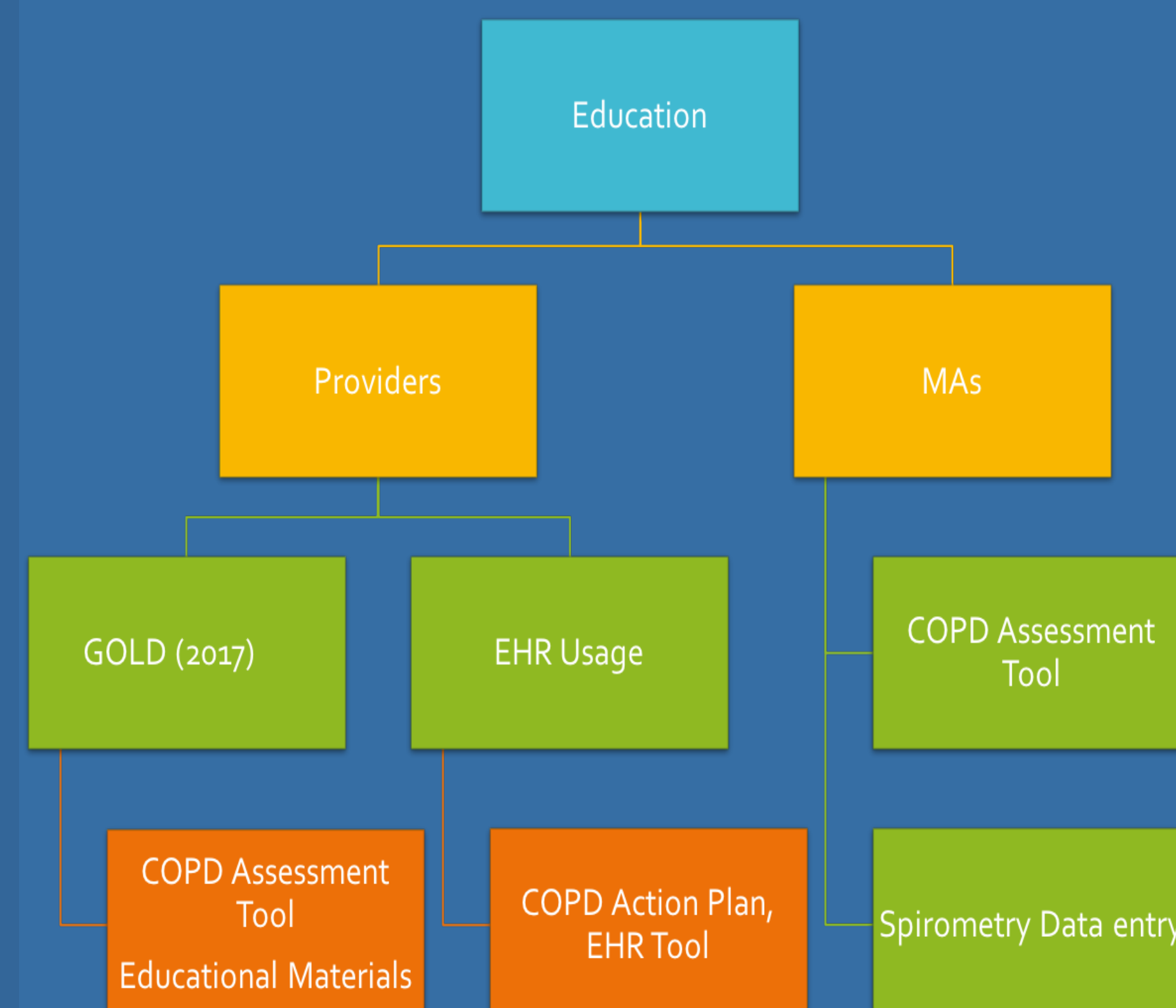
- **Primary Outcome:** Changes in Provider treatment practices Usability of EHR tool
- **Secondary Outcome:** Changes in immunization, spirometry rates, Pulmonary Rehab Referrals

DISCUSSION

- Providers felt EHR tool useful for documenting COPD visits; used exclusively during COPD acute visits, not Wellness
- Increased recognition of need to perform spirometry on more frequent basis
- No changes in COPD Action Plans use
- Patient resistance to Pulmonary Rehab despite provider referral
- Influenza vaccinations consistently provided to COPD patients in clinic; PNA vaccinations given offsite less followthru by patients
- Spirometry data previously scanned into EHR less accessible; now directly entered into flowsheet
- Spirometry time consuming and may limit provider ability to perform during COPD visit

METHODS

- Educational Intervention



- EHR Tool

Immunization History	
Administered	Date(s) Administered
• Tdap Vaccine =>7YO IM	03/02/2006
• Tetanus Vaccine IM, Adsorbed	06/17/2016

Spirometry results:	
Spirometry Smartform	4/12/2016
Spirometry Location	Adult Primary Care
FEV1 (pre-albuterol)	2.77
FEV1 % pred (pre-albuterol)	73
FVC (pre-albuterol)	4.92
FVC % pred (pre-albuterol)	97
FEV1/FVC (pre-albuterol) calculated	56.3
FEV1/FVC % predicted (pre-albuterol) calculated	75
FEV1 (post-albuterol)	2.55
FVC (post-albuterol)	5.18
FEV1/FVC (post-albuterol) calculated	49.23
FEV1 Change	-0.22
FEV1 % pred Change	-7.94
FVC Change	0.26
FVC % pred Change	5.28

GOLD Recommendations:
 Smoking cessation discussed? Yes
 Spirometry ordered? Comment: not today- will repeat with exacerbation or at one year
 Vaccinations up to date (influenza, PCV-13, PPSV23) No and Comment: will continue to discuss at ROV
 Screening required:
 Lung Cancer: Yes and Comment: CT chest in April and CT PE protocol in Aug 2018
 Osteoporosis: No and Comment: not at this time
 COPD Action Plan in place? Yes
 Pulmonary rehab referral made? No and Comment: discussed today, though pt declines at this time
 Referral to CHT (Smoking cessation, social worker) or Better Breathers? No and Comment: discussed today, though patient declines at this time

RESULTS

Provider Survey:

- Increase in need to order Spirometry annually and after exacerbation
- Increase in need to create COPD Action Plans and update after exacerbation
- No change in ordering Pulmonary Rehab referrals – resistance noted by patients

Chart Review:

51/77 Patients seen
 109 Office Visits (all cause)
 23 COPD visits (CC cough, URI, ED follow up)

Immunizations:

- Influenza: 37.2% (19)
- PCV13: 1.9% (1)
- PPSV23: 1.9% (1)

Spirometry:

- Increase 3.9% (2)

Pulmonary Rehab referrals:

- Increase 3.9% (2)

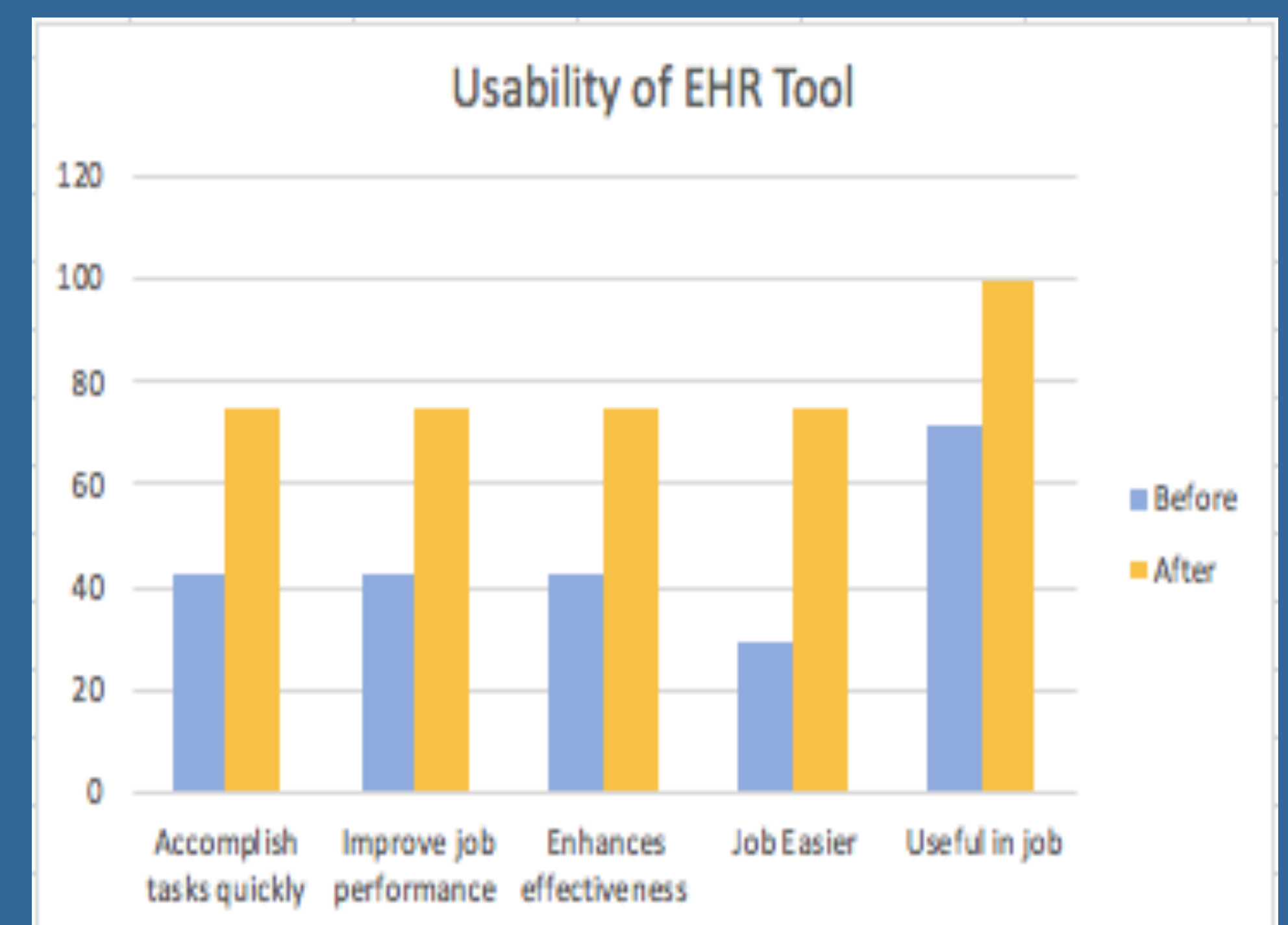


Chart 1. Provider Usability Results

CONCLUSIONS

- EHR tool useful to providers in documenting COPD encounters.
- COPD Annual Visits to perform COPD-specific care (spirometry, action plans, Immunization)
- Additional research to evaluate patient resistance/barriers to Pulmonary Rehab participation
- PNA Vaccination Program Initiative

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