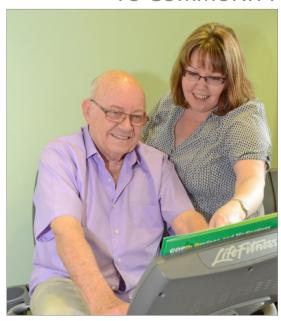
AECOPD TRANSITIONS IN CARE PROJECT

South Okanagan Similkameen Shared Care COPD Working Group

FROM ACUTE



TO COMMUNITY



FINAL REPORT



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EXECUTIVE SUMMARY

AIM

The aim of this Shared Care project was to improve the health and quality of life of patients who experience Acute Exacerbations of Chronic Obstructive Pulmonary Disease (AECOPD), and to reduce the burden of Chronic Obstructive Pulmonary Disease (COPD) on the healthcare system. This was achieved by bringing together an interdisciplinary team focused on patients and their optimal transition back to the community.

INTENDED OUTCOMES

- Reduce emergency room visits
- Reduce hospital readmissions
- Reduce hospital admissions
- Improve experience patients, physicians, health care providers
- Reduce length of stay
- Optimize best practice standards

SOLUTIONS

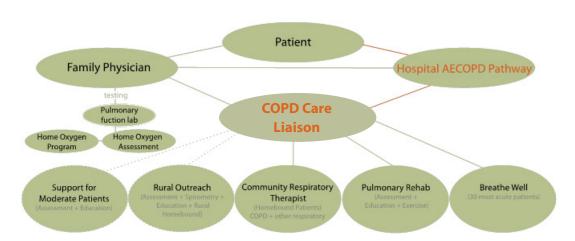
An AECOPD pathway was developed to standardize best practices in the hospital and to connect patients to support and education in the community. The pathway optimizes potential patient health outcomes by ensuring the patient receives the full spectrum of services needed:

- AECOPD case finding by a COPD Care Liaison (daily "look ups" for emergency and admissions)
- COPD in-hospital education (bedside inhaler and COPD education)
- Standardized medical treatment (care provider in-service and use of pre-printed orders)
- In-home patient follow-up (phone call or home visit within 2 weeks)
- Family physician follow-up (appointment within 2 weeks)
- Involvement in community respiratory programs (by referral)

The AECOPD pathway is based on an optimal COPD model of care as illustrated on page 2.

EXECUTIVE SUMMARY

COPD CARE MODEL



MOST SIGNIFICANT RESULTS

- 32% reduction in re-admissions for COPD within the South Okanagan over 3 years
- Cultural shift around COPD care for healthcare providers in the South Okanagan
- Increased awareness around the disproportionate vulnerability of rural patients and the need for more rural supports
- Optimal COPD care model and AECOPD pathway to guide resource allocations

SUMMARY

The AECOPD Shared Care project is an example of how physicians and the health authority can work together to improve patient outcomes and implement innovation in the healthcare system. The project demonstrates the value of collaboration to find the best solutions and change culture and practice. It is consistent with the Ministry's priorities and the Institute for Healthcare Improvement's (IHI) Triple Aim Framework.

Full implementation of the model through the addition of a respiratory therapist (RT) in the South Okanagan Similkameen (SOS) and further evaluation are required to know the full impact of the system improvements. But the literature, anecdotal evidence and Interior Health readmission statistics indicate that the AECOPD pathway and optimal COPD care model will significantly improve COPD care for patients.

The practice improvements can be replicated. The project team is optimistic that the AECOPD pathway and COPD care model can become the new standard of care throughout the province.

INTRODUCTION

BURDEN OF DISEASE

When this project began, COPD consistently accounted for the highest number of readmissions to hospital in the Interior Health Authority region (213 in 2011/12). The prevalence of COPD in the South Okanagan (12%) was double the provincial average. Moreover, the prevalence of COPD for Interior Health residents continues to grow at a faster pace than the provincial rate.

At Penticton Regional Hospital (PRH), COPD was the third major cause of admission in 2008/09. Care for COPD patients accounted for 19% of the total hospital days that year. This is similar to the impact of Chronic Heart Failure. ⁴ COPD was the second highest reason for admission to South Okanagan General Hospital (SOGH) in Oliver in 2008/09 but COPD accounted for the longest lengths of stay (except palliative). The provincial government has taken the burden of COPD seriously, providing family physician incentives and practice support to optimize the management of COPD patients in the province.

PROJECT OVERVIEW

The Shared Care AECOPD Transitions in Care project was funded by the Shared Care Committee, a joint collaborative committee of the Doctors of BC and the Ministry of Health. The project's target population was inclusive of all COPD patients, from mild to severe. The first project funding was received in June 2012. Between September 2012 and September 2013, a Shared Care working group developed an optimal model of COPD care and an AECOPD transitions pathway. From September 2013 to September 2014, the group focused on implementation and spread.

PATHWAY DEVELOPMENT

During the first phase of the project, the working group conducted a jurisdictional scan of best practices to align with similar activities in other communities provincially and nationally (such as at Vancouver General Hospital) to review guidelines as advocated by the Canadian Thoracic Society (CTS) guidelines, and to conduct a literature review of articles. From this research, the working group adopted best practices to create a pathway of key indicators of patients' success in managing their COPD including:

- use of antibiotics and/or prednisone ⁵
- COPD education and self-management ⁶
- community respiratory therapy program involvement ⁷

The team also mapped the existing patient journey and conducted four in-depth chart reviews to inform operationalization of an AECOPD pathway and optimal model of COPD care.

- 1 IHA Strategic Information Management, 2012
- 2 IHA Local Health Area Profile South Okanagan, 2013
- 3 IHA Chronic Disease Workloads, 2010
- 4 PRH Statistics
- 5 Canadian Thoracic Guidelines. J 2008 SupllA
- 6 Bourbeau J, Saad N. Integrated care model with self-management in chronic obstructive pulmonary disease: from family physicians to specialists. Chron Respir Dis 2013 May;10(2):99-105, and Bischoff E, Hamd DH, Benedetti A, Sedeno MF, Bernard S, Maltais F, Bourbeau J. Effects of written action plan adherence on COPD exacerbation recovery. Thorax 2011 Jan;66(1):26-31
- 7 Canadian Thoracic Guidelines. J 2008 SupllA

INTRODUCTION

INTERDISCIPLINARY PARTNERSHIPS

The project was a joint initiative of Interior Health and SOS physicians. The SOS Collaborative Services Committee (CSC) started as the steering committee for this project. However, by the fall of 2012 a SOS Shared Care Steering Committee and COPD Working Group had been established and the CSC agreed that it was more appropriate for those groups to direct the project. Both the steering committee and the working group have strong physician and Interior Health representation. The CSC continued to receive regular reports from the COPD Working Group and to address challenges and opportunities as they arose. Members of the steering committee included family physicians, specialists, Interior Health Authority administrative staff, the SOS Division of Family Practice Executive Lead and Shared Care staff. An interdisciplinary COPD Working Group of key stakeholders was also formed.



Working group members (back row, from left): Scott Frymire, Dana Thomas, Wendy Boyer, Sharry Hodgson, Dr. Glen Burgoyne, Patricia Rattée, Tracy St. Claire, Dr. Brent Harrold, (front row, from left) Anne Morgenstern, Jack Swoboda, Dr. Shannon Walker

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WORKING GROOT MEMBERS				
Physicians	Respirologist Emergency Physician Family Physician		CIHS Manager Nurse Manager ED	
Practice Support	Program Coordinator	Interior Health Authority	Nurse Manager Respiratory Education Coordinator	
Patient Voices Network	Patient Representative		Clinical Coordinator for Respiratory	
SOS DoFP	Executive Lead		Services	
Shared Care	Project Manager Project Assistant Evaluator		Breathe Well Respiratory Therapist Breathe Well COPD Care Liaison Clinical Pharmacist	

INTRODUCTION

ALIGNMENT

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From the beginning, the AECOPD project team sought opportunities for alignment with other COPD initiatives within Interior Health and the province. At the time the AECOPD Transitions in Care project was starting, the Practice Support Program (PSP) was developing a provincial module to support family physicians to care for COPD patients in their offices. The local PSP Coordinator was a member of the project working group and the PSP COPD module served as a means to share information from the project and to gather feedback on physician experience.

In 2013, the Physician Information Technology Office (PITO), PSP and the SOS and Kamloops Divisions of Family Practice collaborated on an Integrated Practice Support Initiative (IPSI). This group, with considerable Shared Care involvement, built on the COPD care model. Together they developed a COPD patient handout, a simplified COPD patient services referral form, and a MedAccess COPD template. An additional COPD module was delivered, which incorporated the Shared Care and IPSI project work.

Members of the COPD working group made attempts to align with the Breathe Well initiative that started around the same time as the AECOPD Shared Care Project. Breathe Well funding was provided by the Ministry of Health to support and further develop a model of integrated care for COPD patients. The Breathe Well program was to affect the clinical outcomes and change in the very sickest of COPD patients. Interior Health also started an AECOPD Acute Benchmarking initiative during the course of this project. Its mandate overlapped with that of the Shared Care project. Unfortunately, no formal linkages were successfully created with either of these initiatives.

Additional detail on project alignment, design and implementation is included in a separate report.8

Early evidence in the following areas demonstrates the initiative's success:

DECREASE IN READMISSIONS

A key indicator of successful COPD management was determined to be a decrease in the number of readmissions to hospital after 28 days. A readmission may indicate that patients are severely struggling with their COPD when they return to their homes. This information is recorded and reported in the Discharge Abstract Database (DAD) by IHA as clients are discharged from hospital. Given the early work of the committee in culture and awareness of COPD in early 2012, it was determined to use COPD readmission rates 2011/12 as a baseline for analysis.

It was noted that:

For all of Interior Health:

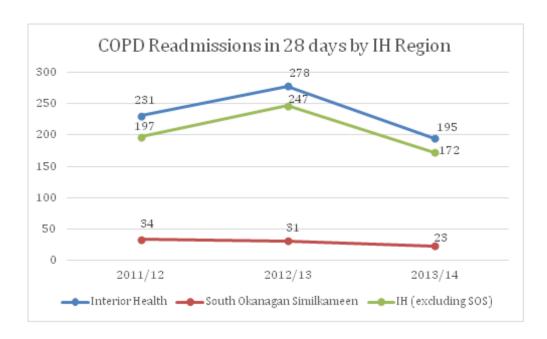
• 26% reduction in COPD readmissions from 2011/12 to 2013/14

In the South Okanagan:

• 32% reduction in COPD readmissions from 2011/12 to 2013/14

In Interior Health excluding the South Okanagan:

• 16% reduction in COPD readmissions from 2011/12 to 2013/14



It should be noted that given a number of external factors that could contribute to rates of COPD and AECOPD (including several concurrent initiatives aimed at these patients throughout IHA), it is difficult to isolate the key reasons for the reductions in the South Okanagan.

The concentrated efforts on COPD in the South Okanagan during this time may have contributed to the 9% decrease from 2011/12 to 2012/13 for the South Okanagan, where IHA as a whole experienced a 20% increase in the number of COPD readmissions from 2011/12 to 2012/13.

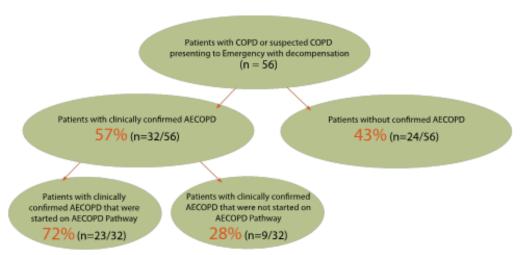
In the process of compiling this report, updated readmission rates have been made available, and it is noted that the readmission rates for the South Okanagan have increased since the end of the project. This data has not yet been explored by the project team.

It should also be noted that COPD is a progressive disease, and over time even with best practices the trajectory of COPD patients can be one of decline, which might introduce limits to possible long-term improvements or reductions in readmission avoidance.

EMBEDDED CULTURE SHIFT

To assess the culture shift, all patients with COPD or suspected COPD who presented to the emergency department with decompensation between March and May of 2013 were tracked. Of these 56 suspected cases, 32 were clinically confirmed AECOPD patients (Cohort 32). Of the 32, 23 were started on the pathway. ⁹

RESULTS OF AECOPD PATHWAY TRIAL



The initial trial period (March to May 2013) shows that once initiated, pathway elements were completed with an excellent rate of success:

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received COPD education in hospital (n=23/23)
received antibiotics and/or prednisone (n=23/23)
had AECOPD pre-printed orders (PPOs) initiated (n=19/23)
received an RT phone call within 72 hours of discharge (n=19/23)
visited a family physician within 2 weeks of discharge (n=19/23)
received an RT visit within 2 weeks of discharge (n=12/23)
had community respiratory program involvement (n=23/23)
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The chart review of the readmission experience of the 32 patients identified with a clinically confirmed case of AECOPD during the trial (March to May 2013) shows that most elements of the pathway were still being used 17 months after the trial:

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90% received COPD additional education in hospital (n=18/26)<sup>10</sup>
100% received antibiotics and/or prednisone (n=23/23)
38% had AECOPD pre-printed orders (PPOs) initiated (n=10/26)
71% received an RT phone call or visit within 72 hours of discharge (n=15/21)
73% had community respiratory program involvement (n=19/26)
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Adapting to the implementation response of Pre-Printed Orders (PPOs):

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It should also be noted that during the course of the trial, compliance with the PPOs dropped as feedback from physicians indicated the high use of PPOs already in circulation did not encourage the introduction of new forms. One of the key findings of the work of this initiative is that primary care providers are overwhelmed with PPOs, and part of the key to creating a shift in culture is ensuring that there are multiple entry points into the pathway. In this model, any point of contact could trigger the pathway to optimize the possible health outcomes of the patients.

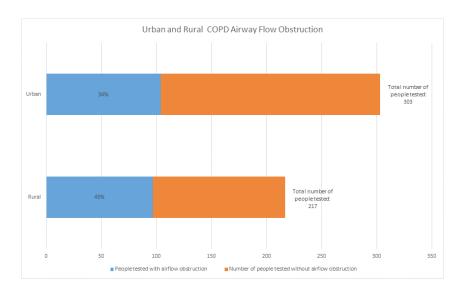
Limitations of data extracted from Cohort 32 data:

Additionally, the intent of the Cohort 32 was to determine if there had been a decrease in the rates of ED visits and hospital admissions using a pre/post comparison of clients on and off the pathway. Four overarching elements limited the utility of this comparison:

- The profiles of patients who had successfully engaged with the pathway differed from those who had not engaged with the pathway (e.g., patients not on the pathway tended to be younger and located in more rural areas). Furthermore, rural areas may tend to transfer the most severe patients from their local hospitals to PRH. Exploring the profiles of those clients that declined engagement with the pathway could be a useful direction for future study
- 2) The 17-month pre/post trial comparison periods differed seasonally, causing comparison between the two periods to be different: the pre-periods for most clients would include two winter seasons, where the post-periods for most clients would include two summer seasons
- 3) The natural trajectory of COPD clients is one of increasing severity
- 4) The small sample size limited ability to draw conclusions

AMPLIFIED THE NEED FOR MORE EDUCATIONAL AND RESPIRATORY THERAPY SUPPORT

Results of spirometry testing can provide an assessment of airflow obstruction, and can be a predictor for the severity of COPD. RTs involved in the project were able to capture the results of Pulmonary Function Testing (PFT) for 520 patients from June 30 to September 30 2014 for the South Okanagan region. While exact comparisons are not available, local RTs noted that this PFT Data was a significant increase in testing from the same period in 2013. The increase in testing may be an indicator of the heightened awareness and need for identification of COPD by the care continuum.



Another important element that emerged from this PFT Data was the increased severity of rural patients. In urban (Penticton and Summerland) patients, 34% were identified as having airflow obstruction, compared to 47% of rural patients (Osoyoos, Keremeos, Princeton, Cawston, OK Falls, Naramata, Kaleden, Hedley, Oliver and other rural communities). It may be assumed that urban patients have better access to diagnostic testing and may be captured at an earlier stage of disease, however, there may be other demographic factors at play.

In Cohort 32, more clients not on the pathway lived in rural communities, highlighting the need to better understand patient profiles and specific challenges of those rural patients with COPD.

INFLUENCE ON DECISION MAKING AROUND IHA RESOURCE ALLOCATION

The estimated prevalence of COPD in the South Okanagan is approximately 7,000 patients. It was estimated in the respiratory program review that 200-300 of these patients were involved with a respiratory program in 2013/14. Respiratory support for rural patients was extremely limited (22 rural COPD patients seen in 2013/14).

Since the start of the project, Interior Health has added and reallocated RT resources to better support the COPD care model:

- Early in 2013 a 1.0 FTE RT position was added to address waitlists in the pulmonary function lab
- In September 2013 Breathe Well funding was used to support a .8 FTE COPD Care Liaison position, a primary function in the care model, ensuring patients are connected with follow up support
- Since early 2014, RT services have been re-organized to provide more diagnostic services and education to rural communities

All of these changes are consistent with the optimal care model.

ACCOMPLISHMENTS

EFFECTED CULTURE CHANGE THROUGH THE POWER OF TRUE MULTIDISCIPLINARY PARTNERSHIP

"Instead of being just in charge of the respiratory health of the hospital patients, you're in charge of the respiratory health of the entire community."

— IHA Respiratory Therapist

During focus groups conducted in the evaluation at the end of the project, the project lead, respirologist, emergency physician and IHA RTs all noted high levels of collaboration and felt that the working group had been very effective. They frequently mentioned the benefits of being able to discuss a clinical issue together from the multiple perspectives of RT, respirology, emergency medicine and pharmacy. The energy the group was able to generate was also a key theme.

Other group comments that indicated a strong collaborative partnership were:

- the ability to contribute to the conversation
- to have their voices heard
- to stay easily informed
- to be a part of a well-organized project
- to have all the right people involved in the process

The project magnified the role of the RT in team-based care in diagnosis and patient self-management, with RTs being more regularly called to the ED to assist with AECOPD diagnosis, and more physicians referring for testing, assessment, education sessions, and community respiratory programs.

DEMONSTRATED HOW TO CONDUCT A PROJECT THAT INCLUDED PHYSICIANS AND MULTIPLE IHA PORTFOLIOS

This project successfully incorporated physicians as well as staff from three portfolios in Interior Health (acute, community and allied health services), demonstrating the power of an interdisciplinary team to integrate broad systems-level cultural change.

ADOPTED BEST PRACTICES WITH EVIDENCE-INFORMED RESOURCE ALLOCATION

The pathway and care model were research-based, which guided the restructuring of resource allocation and redefined roles in the RT department. This allowed the community to implement and operationalize best practices.

DEMONSTRATED NEW WAYS OF ENGAGING WITH MULTIPLE CARE PROVIDERS FROM DIFFERENT DISCIPLINES

- Champions from each discipline regularly reported back to their teams on working group progress and solicited feedback, which was incorporated into PDSAs
- The working group produced a report card during the initial trial phase that showed compliance of each group of healthcare professionals with the elements of the pathway

ACCOMPLISHMENTS

- Physician champions distributed a COPD information folder in the doctors' lounge at PRH for 3 days while physicians conducted morning rounds
- Team members reported on the project to the IHA Board, and the IHA Senior Executive Team (SET), raising awareness of the issue and the potential for collaborative projects to improve care

SUSTAINED IMPROVEMENTS

The project team implemented, regularly tested and refined tools and processes for an extended period to ensure that the improvements were embedded in workflow and were being sustained. Despite IHA RT staffing changes, excellent adherence to the pathway was observed over 17 months. Implementation of the pathway has spread beyond this cohort group, such that in the ED and in family physician offices COPD management and contact with an RT is standard process.

DEVELOPED REPLICABLE PATHWAY

"We did COPD, but it could be anything. And I think that's a huge value for moving forward. That should be considered one of our outcomes – the actual systematic process we used."

— Penticton Physician

The AECOPD Pathway and COPD care model can be adapted to any community and to any chronic disease.

CHALLENGES

LACK OF COMPREHENSIVE COPD STRATEGY

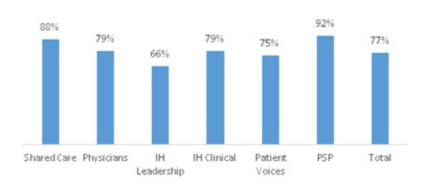
Concurrent IHA initiatives were disconnected, yet involved similar goals, and similar target groups of patients, physicians and clinicians. This overlap caused confusion regarding the roles of the RTs, as well as creating conflicts around access to data (survey burden, decision support), and some redundancy in activities. RTs lacked clear direction, and at times didn't know how to best integrate the different projects into their delivery of care. An overall coordination/alignment of vision, strategy and activities (including data collection), would have likely enhanced overall results. A clear overall strategy of COPD care could have aligned and integrated all COPD initiatives (for example, using a common comprehensive COPD checklist in MediTech) and optimized the alignment with Breathe Well.

LACK OF RESOURCES FOR FRONT-LINE STAFF TO PARTICIPATE IN QUALITY IMPROVEMENT PROCESSES

There were difficulties surrounding time needed for front-line clinicians and staff to participate in most aspects of the initiative, including time needed to complete PPOs, and to participate in working groups and various committees. For IHA staff, much of this time was uncompensated, so quality improvement work needed to be added "off the side of the desk" which added stress to pre-existing work requirements.

LACK OF CLARITY SURROUNDING DECISION MAKING WITHIN INTERIOR HEALTH

Average attendance of stakeholders at Working Group meetings:



At times the project experienced difficulty connecting with appropriate leadership within Interior Health. Clarity around communication mechanisms and process earlier on in the project would have been of benefit. Although attendance and involvement with the initiative also had the lowest organizational rates of participation from Interior Health (as noted in the meeting attendance records), the central issue to Interior Health's involvement with the initiative was the ambiguity surrounding appropriate access to leadership. It is postulated that had the appropriate people been involved in the initiative from the outset, and the appropriate decision-making mechanisms been active, it could have expedited the processes for engagement and maximized results.

Working as an organization external to Interior Health, the organizational hierarchy is difficult to navigate. Leadership tends to have wide portfolios and it becomes difficult to ascertain the activities of all

CHALLENGES

the initiatives. The project was under duress to demonstrate results documented through data and a stringency that Interior Health does not require from other initiatives or programs. Furthermore, the impact was limited, stunting the ability to fully align with existing programs and to access comparative data.

LIMITED ACCESS TO IHA DATA AND DECISION SUPPORT

The project team wanted to collected baseline data, working with Interior Health data and Decision Support. However, despite ongoing efforts to engage with Interior Health (e.g., IMIT), the project faced extensive difficulties surrounding protocols for system navigation and data requests. No data was made available. Only at the culmination of the project, did IHA provide limited summary data from DAD.

LIMITED ACCESS TO CLINICAL HEALTH OUTCOME DATA

In lieu of access to data from Interior Health, numerous attempts were made to establish a data collection mechanism from within the program – despite already limited clinical capacity to support data collection. No additional support was provided by IHA to create a standardized registry for additional administrative support for data collection. In spite of this, RTs were able to assist with data collection, although this caused great strain on their workload.

Despite the difficulties surrounding receiving access to acute care data from IHA, high stakeholder engagement and a desire to capture the effects of the initiative led the team to develop alternate ways to capture metrics. This included:

- Four patient in-depth chart reviews and interviews to initially inform the project
- Development of a local client registry
- Statistics around 2013/14 RT program referrals
- Three-month snapshot of PFT data and pulmonary function lab referrals (including airflow obstruction results and patient residence)
- Cohort 32 pre- and post-trial admissions and ED visits
- Working group member interviews at year 1 and year 2

Unfortunately, this data was limited in usability given the small sample sizes, the multiplicity of variables impacting the rates (environmental factors, other COPD initiatives) and the absence of clear data collection protocols. In the future, developing a unified data collection strategy and embedding data collection into current systems may alleviate the data collection strain, as well as optimize the quality and usability of the data being collected.

Finally, given the broad nature of the initiative, and the length of time necessary to create a culture shift, the project may need ongoing data collection, with access and support from IHA for ongoing COPD related statistics.

LESSONS LEARNED

SYSTEM RE-DESIGN REQUIREMENTS

Involvement: have the right stakeholders at the right time

- Project success is helped by having expedited access to decision makers to maintain momentum of the project. Having representatives from across the continuum of care allows the model and pathway to be comprehensive, realistic and clear. Front-line champions ensure the care model is taken up and embedded as a culture shift
- All stakeholders are allotted time within their duties to participate in quality improvement initiatives

Adaptability: PDSAs

- Use the IHI Plan Do Study Act (PDSA) model to design and implement an approach to this initiative, which involves rigorous, rapid and responsive proactive case finding
 - Commit to shared responsibility to develop and implement models as a part of an interdisciplinary partnership
 - Improvements must be user-friendly for the patient and the care providers with a strong feedback loop built into the process
 - Awareness that physicians and front-line staff are already overburdened with forms and PPOs.

 This highlights the need for multiple entry points to connect to care
 - Use electronic management systems to be more user friendly and to standardize care
 - While it is difficult to project the full spectrum of impact of an initiative prior to its execution and difficult to understand what resources and data sources are needed, the team must constantly reassess and address data and resource requirements

Communication: *clarity and support*

- Clear responsibilities around communication (keeping the right people involved appropriately at the right time). This is especially a challenge within IHA. Frame communications accordingly, with an awareness of the political environment
- Align with other initiatives to avoid duplicating or wasting resources. Be transparent, and coordinate information and data sharing

RECOMMENDATIONS

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RECOMMENDATIONS MOVING FORWARD

- 1) IHA continues to support and operationalize the AECOPD acute pathway and embed the COPD care model, including the COPD Care Liaison role
- 2) Project team continues to advocate for a comprehensive COPD registry and strategy
- 3) The project team reassesses pathway compliance and COPD readmission rates annually, and responds to results as appropriate to ensure continued sustainability. This requires ongoing commitment of funding and resources from IHA and Shared Care:
 - To develop a core team consisting of a specialist; emergency and family phyksicians; IHA deci-
 - makers from acute, community and allied health; a nurse educator, RT and Shared Care project management and evaluation staff, that will collect and report on SOS and IHA DAD COPD data, chart reviews to determine pathway compliance, provider and patient experience interviews, and RT program participation rates
 - Core team to recommend future direction for consideration by each of their organizations

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CONTACT INFORMATION

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