ACI NSW Agency for Clinical Innovation

LEADING BETTER VALUE CARE

REPORT

Reducing Unwarranted Clinical Variation in Chronic Obstructive Pulmonary Disease and Chronic Heart Failure

Monitoring and evaluation plan

Health Economics and Evaluation Team

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ACI Clinical Networks, Taskforces and Institutes provide a unique forum for people to collaborate across clinical specialties and regional and service boundaries to develop successful healthcare innovations.

A priority for the ACI is identifying unwarranted variation in clinical practice and working in partnership with healthcare providers to develop mechanisms to improve clinical practice and patient care.

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Abbreviations and Glossary

Term	Definition
ACI	Agency for Clinical Innovation
AIHW	Australian Institute of Health and Welfare
BHI	Bureau of Health Information
CHF	Chronic Heart Failure
COPD	Chronic Obstructive Pulmonary Disease
COPD-X	Australian and New Zealand online management guidelines for Chronic Obstructive Pulmonary Disease
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
IHI	Institute of Healthcare Improvement
LBVC	Leading Leading Better Value Care
LHD	Local Health District/s
LOS	Length of Stay
M&E	Monitoring and Evaluation
The Ministry	NSW Ministry of Health
NHMRC	National Health and Medical Research Council
NWAU	National Weighted Activity Unit
NSW	New South Wales
PREM	Patient reported experience measure
PROM	Patient reported outcome measure
PROMIS-29	Patient Reported Outcomes Measurement Information System
Roadmaps	A program management tool to oversee achievement of program milestones
(R)UCV	(Reducing) Unwarranted Clinical Variation
SAPHaRI	Secure Analytics for Population Health Research and Intelligence
SLA	Service Level Agreement

Glossary of evaluation terms

Baseline a pre-intervention assessment that is used to compare changes after implementation.

Dose response in this context is the examination of the link between dose and response as part of determining if a program caused the outcome and to what extent.

Economic evaluation is the process of systematic identification, measurement and valuation of inputs and outcomes of two alternative activities, and the subsequent comparative analysis of these. Economic evaluation methods provide a systematic way to identify, measure, value, and compare the costs and consequences of various programs, policies, or interventions.

Efficiency is a measure of how economic inputs (resources such as funds, expertise, time) are converted into results.

Evaluability is an assessment of the extent that an intervention can be evaluated in a reliable and credible fashion.

Evaluand is the subject of an evaluation, typically a program or system rather than a person.

Evaluation domains

> **Appropriateness** is the extent that program activities are appropriate for the outcomes in which it is to achieve.
>
> **Effectiveness** measures program effects in the target population/patient cohort by assessing the progress in the outcomes that the program is to achieve.
>
> **Impact** is the long-term, cumulative effect of programs/interventions over time on what they ultimately aim to change. It assesses program effectiveness in achieving its ultimate goals.
>
> **Sustainability i**s the extent that the benefits of a program are maintained after formal support has ended.
>
> **Access and reach** measures how accessible the program is to the target population (access) and how many of the target population have accessed the program (reach).

Focus group is a group of people, selected for their relevance to an evaluation. Focus groups are facilitated by a trained facilitator in a series of discussions designed to share insights, ideas, and observations on a topic of concern.

Formative and summative evaluation

> **Formative evaluation (monitoring)** in formative (early) evaluation, programs or projects are typically assessed during their development or early implementation to provide information about how to revise and modify for improvement. In terms of the Leading Better Value Care program, there are two realms of formative evaluation. The first is the formative evaluation of the statewide program to indicate if programs are progressing towards goals and to define what improvements can be made to the overall program. The second realm is the assessment of the program at a site level to determine what is needed for local improvements.
>
> **Summative evaluation (impact)** the purpose of summative evaluation is to make value judgements on the worth, merit and significance of a program. This is typically assessed at the end of an operating cycle or once a program has been settled. Findings are used to help decide whether a program should be adopted, continued, or modified.

Implementation fidelity is the degree that an intervention has been delivered as intended and is critical to the successful translation of evidence-based interventions into practice.

Implicit design is a design with no formal control group and where measurement is made before and after exposure to the program.

Indicator is a specific, observable, and measurable characteristic or change that shows the progress a program is making toward achieving a specific outcome.

Inferential statistical analysis is statistical analysis using models to confirm relationships

among variables of interest or to generalise findings to an overall population.

Interrupted time series analysis is a continuous sequence of observations on a population, taken repeatedly (normally at equal intervals) over time to measure changes and map trends.

Interview guide is a list of issues or questions that guide the discussion in an interview.

Linear mixed models are an extension to the linear model. It includes random effects in addition to the usual fixed effects.

Longitudinal data or **pre and post analysis** is collected over a period of time, sometimes involving a stream of data for particular persons or entities to show trends.

Macro-meso-micro evaluation approach refers to a three level approach to evaluation. In terms of Leading Better Value Care, this is:

- macro – statewide
- meso – LHD
- micro – local sites.

Measuring tools or instruments are devises used to collect data (such as questionnaires, interview guidelines, audits and observation record forms).

Monitoring and evaluation (M&E) is a process that helps improve performance and achieve results. Its goal is to improve current and future management of outputs, outcomes and impact.

Multiple lines of evidence is the use of several independent evaluation strategies to address the same evaluation issue, relying on different data sources, analytical methods, or both.

Primary data is collected by an evaluation team specifically for the evaluation study.

Program in terms of program evaluation, a program is a set of activities managed together over a sustained period of time that aims to achieve outcomes for a client or client group.

Program evaluation is a rigorous, systematic and objective process to assess a program's effectiveness, efficiency, appropriateness and sustainability.

Program theory and program logic

> **Program theory** explains how and why the program is intended to work and the causal links between activities and consequences.
>
> **Program logic** is a pictorial depiction of the program theory.

Qualitative data are observations that are categorical rather than numerical, and often involve knowledge, attitudes, perceptions, and intentions.

Quantitative data are observations that are numerical.

Secondary data is collected and recorded by another person or organisation, usually for different purposes than the current evaluation.

Stakeholders are people or organisations that are invested in a program or that are interested in the results or what will be done with the results of an evaluation.

Statistical analysis is the manipulation of numerical or categorical data to predict phenomena, to draw conclusions about relationships among variables or to generalise results.

Stratified sampling is a probability sampling technique that divides a population into relatively homogeneous layers called strata, and selects appropriate samples independently in each of those layers.

Surveys are a data collection method that involves a planned effort to collect needed data from a sample (or a complete census) of the relevant population. The relevant population consists of people or entities affected by the program.

Triangulation, in the context of Leading Better Value Care, facilitates validation of data through cross verification from more than two sources.

Utility is the extent that an evaluation produces and disseminates reports that informs relevant audiences and have beneficial impact on their work.

The following table shows the monitoring and evaluation cycle for Leading Better Value Care programs.

Table 1 Monitoring and evaluation cycle for Leading Better Value Care programs.

Evaluative perspectives	**Expected economic benefits** from the intervention – predicted	**Evidence foundations** of the intervention – program theory/logic model	**Implementation evaluation** – intervention coverage, fidelity of implementation and contributing factors	**Outcomes evaluation** – patient and provider experience and patient outcomes	**Economic evaluation** – benefits and return on investment
Planning	Quantitative	Qualitative/ quantitative			
Formative evaluation – early and ongoing alongside quarterly reporting			Qualitative/ quantitative	Quantitative	Quantitative
Summative evaluation – at 12 months and 2 years			Qualitative/ quantitative	Quantitative	Quantitative

Executive Summary

This document outlines the monitoring and evaluation framework for the Leading Better Value Care initiative to reduce unwarranted clinical variation in the management of people with chronic obstructive pulmonary disease and chronic heart failure admitted to NSW hospitals.

Two programs will be implemented across NSW local health districts in the 2017-18 financial year to improve in-hospital care for people with these two chronic conditions. For both programs, existing clinical guidelines will provide a benchmark of what quality care looks like to guide local improvements. The intended outcome of the program is to establish more systematic processes for detecting and addressing unwarranted clinical variation and as a result improve patient and system outcomes for people with chronic obstructive pulmonary disease and chronic heart failure.

The Leading Leading Better Value Care initiative provides an opportunity to align measurement systems to improve monitoring of program implementation or fidelity and support the achievement of program milestones. Ministry of Health roadmaps, service level agreements and the impact evaluation have been aligned within the monitoring and evaluation data and analysis plan to achieve this purpose.

The impact evaluation will be an observational mixed methods evaluation with pre and post implementation comparisons to answer key evaluation questions. It will assess the extent to which the programs achieve system changes and intended outcomes as outlined within the program logic. Importantly it will also assess sustainability and aim to provide useful information to guide future investment decisions related to the management of people with these two chronic conditions.

As the programs continue to be refined, this monitoring and evaluation framework will continue to develop including the design of evaluation tools to best answer the evaluation questions outlined.

ACI will lead the data collection, analyses and feedback process for the formative and summative evaluation components in collaboration with state-wide data custodians, local health districts implementation teams, other pillars and the Ministry.

Contents

Tables and figures

Introduction

Document outline

This document outlines the monitoring and evaluation (M&E) framework for the Leading Leading Better Value Care (LBVC) initiative to reduce unwarranted clinical variation (RUCV) in the management of people with chronic obstructive pulmonary disease (COPD) and chronic heart failure (CHF). It has been developed in consultation with the Agency for Clinical Innovation (ACI) Acute Care projects team and feedback from clinicians within the ACI Respiratory and Cardiac Clinical Networks.

The framework has been informed by key documents relevant to best practice care for COPD and CHF, meetings with the ACI COPD and CHF project teams, collaborative program logic development, and workshops with ACI staff and clinicians. It includes:

- an overview of the NSW LBVC initiative
- a background to the problem and RUCV program design
- the purpose, focus, limitations, and design for the evaluation
- a program logic that illustrates how the model of care is expected to achieve the desired outcomes
- key evaluation questions and sub-questions
- the methods, data sources and analysis that will be conducted to answer the key questions
- the governance, codes of behaviour and ethical framework that underpin the evaluation
- identification of relevant audiences and communication of findings.

Due to the large overlap in program design, clinical best practice principles, evaluation foci and methods, the M&E frameworks for both programs have been combined in this document. There are sections that detail the specific differences in data and measures between COPD and CHF.

Evaluation planning has been undertaken between February and May 2017 to meet timeframes for LBVC. Both programs continue to be refined. As such, this M&E framework reflects current understanding of program design and implementation at the time of writing. As the program is further defined, specific measures and tools will be developed to support monitoring and evaluation. This plan will be reviewed and updated as necessary to reflect any changes in the program over time.

Background

Leading Better Value Care

The NSW Ministry of Health (MoH) introduced the statewide LBVC initiative in late 2016. LBVC is a comprehensive approach to improve NSW Health system performance against the Institute of Healthcare Improvement (IHI) Triple Aim of improving patient and provider experience, population health outcomes, and system efficiency and effectiveness. The

initiative involves the implementation of eight selected clinical programs in the 2017-18 financial year, with a goal of delivering improved clinical outcomes, patient experience and system benefits. Two of these programs are focused on RUCV in chronic conditions: COPD and CHF.

Figure 1 Triple Aim of LBVC programs

Leading Better Value Care initiatives will be implemented by each Local Health District (LHD) and incorporated into LHD roadmaps and service level agreements (SLAs) for the purpose of monitoring and informing local quality improvements. A comprehensive impact evaluation will be undertaken after programs have been implemented within each LHD. The purpose of evaluation will be to assess the overall impact of each initiative on the NSW health system and guide decision making around the value (worth, merit and significance) of the LBVC initiative.

Reducing unwarranted clinical variation in chronic obstructive pulmonary disease

Background

COPD is a progressive and disabling condition that limits airflow in the lungs. People with COPD experience increasing shortness of breath, a persistent cough with phlegm or mucus most days and a limited ability to complete everyday activities due to poor exercise tolerance. The incidence of COPD increases with age. In Australia, the prevalence is estimated to be 7.5% for people aged 40 years and over and 30% for people aged 75 and over[1]. In Aboriginal people the prevalence of COPD is 2.3 times higher than the general population across all age groups[2]. The primary cause of COPD is active smoking or exposure to smoke. It is the second leading cause of avoidable hospital admissions[3] and a leading cause of death and disease burden in Australia after heart disease, stroke and cancer[4].

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[1] Australian Institute of Health and Welfare. COPD chronic obstructive pulmonary disease [internet]. Canberra: AIHW; 2016 [updated Dec 2016; cited 2017 Mar 20]. Available from: http://www.aihw.gov.au/copd/

[2] Poulos LM, Cooper SJ, Ampon R, Reddel HK & Marks GB. Australian Institute of Health and Welfare. Mortality from asthma and COPD in Australia [internet]. Canberra: AIHW. 2012. Available from: http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129548230

[3] Page A, Ambrose S, Glover J et al. Atlas of avoidable hospitalisations in Australia: ambulatory care sensitive conditions. Adelaide PHIDU. University of Adelaide. 2007.

[4] Australian Institute of Health and Welfare. Australia's health 2012 [Internet]. Australia's health no. 13.Canberra: AIHW:2012. Available from: http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737422169

COPD is an area of significant healthcare variation, with high associated healthcare costs. Across Australia the number of admissions for people with asthma and COPD combined was 19.4 times higher in the highest admission rate area compared to the lowest[5]. Possible reasons for variation include variable prevalence in populations based on age and Aboriginal and Torres Strait Islander status, smoking rates, pulmonary rehabilitation availability, the prevalence of geographic airborne allergens, and adherence to self-management and treatment[6].

There are a total of 75 hospitals in NSW that admit 50 or more people with COPD per year[7]. In 2014-15, there were 20,806 separations across the state, costing a total of $133 million[8]. In April 2017, the Bureau of Health Information (BHI) released a report exploring clinical variation in mortality in eight conditions including COPD[9].

In an effort to improve clinical best practice for people with COPD, the Australian Lung Foundation published *The COPD-X Plan: Australian and New Zealand guidelines for the management of chronic obstructive pulmonary disease* in 2016[10]. These best practice guidelines are based on the highest levels of available evidence and aim to broaden treatment of COPD from a pharmacological focus to an emphasis on patient education, chronic disease self-management and pulmonary rehabilitation. Underlying principles of COPD management, outlined in the guidelines include: **c**onfirming the diagnosis, **o**ptimising function, **p**reventing deterioration, **d**eveloping a plan of care and managing e**x**acerbation.

Several recommendations within the guidelines relate to optimal inpatient care and coordination between acute and primary care providers. These recommendations may be implemented to contribute to a reduction in unwarranted clinical variation by providing a baseline to benchmark appropriate care and a mechanism for ensuring local interventions are in line with best practice.

Reducing unwarranted clinical variation in chronic heart failure

Background

Chronic heart failure is a complex clinical syndrome caused by structural or functional abnormalities in the heart which result in shortness of breath, fatigue, and oedema. It is a severe, disabling condition, which negatively impacts on quality of life. CHF affects an

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[5] Australian Institute of Health and Welfare. 2016
[6] Australian Institute of Health and Welfare. 2016
[7] Bureau of Health Information. The insight series exploring clinical variation in mortality, mortality following hospitalisation, seven clinical conditions, NSW July 2012-June2015. NSW: BHI, 2017 April. [Cited 2017 21 April. available at: http://www.bhi.nsw.gov.au/__data/assets/pdf_file/0003/356529/report-insights-exploring-clinical-variation-in-mortality-2017.pdf]
[8] Agency for Clinical Innovation. Health Economics and Evaluation Team COPD data report. NSW; ACI. 2016. Source: *Admitted Patient, Emergency Department Attendance & Deaths Register, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence.*
[9] Bureau of Health Information. 2017
[10] Yang IA, Dabscheck E, George J, Jenkins S, McDonald CF, McDonald V, Smith B, Zwar N. The COPD-X Plan: Australian and New Zealand Guidelines for the management of Chronic Obstructive Pulmonary Disease. Australia: The lung Foundation 2014 [last updated 2016 Dec]. Available from: http://copdx.org.au/copd-x-plan/

estimated one million people in Australia, a third of which reside in NSW.[11] Incidence of CHF increases with age and is commonly co-morbid with other conditions including atrial fibrillation, diabetes and kidney disease. The two leading causes of CHF, ischaemic heart disease and hypertension, are potentially preventable. However, prevalence remains high and it is one of the leading causes of admission and readmission to hospital.

There are are total of 69 hospitals in NSW that admit 50 or more people with CHF per year.[12] In 2014-15, there were 15,000 separations for CHF in NSW, costing a total of $106 million.[13] Across Australia, the number of admissions for CHF was 7.3 times higher in the highest area compared to the area with the lowest rate.[14]

Effective management of heart failure is well understood. It is involves multidisciplinary coordination of care across acute and primary care providers in order to support self-management and prevent acute episodes. Principles of best practice include compliance with optimal pharmacotherapy, surgical procedures and supportive devices, as well as a range of non-pharmacological interventions, community heart failure management programs and supportive end of life care.

Best practice guidelines for the prevention, detection and management of CHF were developed by the National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand in 2011.[15] In addition, the ACI Cardiac Network published the *NSW Clinical service framework for chronic heart failure* in 2016,[16] which provides best practice guidance for CHF across nine key standards.

As with COPD, these guidelines can be used to provide a benchmark for optimal care delivery, reduce unwarranted clinical variation and improve outcomes for people with CHF across NSW.

Reducing unwarranted clinical variation in COPD and CHF

Background

The RUCV program for people with COPD and CHF aims to identify and address unwarranted clinical variation, through the statewide dissemination and implementation of best practice guidelines and redesign support. Although some variation is warranted and desirable, the weight of evidence in Australia and internationally suggests that unwarranted variation exists and may be attributable to clinical practice and the different ways healthcare

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[11] Chan YK , Gerber T, Tuttle C, Ball J, Teng TH, Ahamed Y, Carrington MJ, Stewart S. Rediscovering Heart Failure: The contemporary burden and profile of heart failure in Australia. Victoria, Australia:.Mary MacKillop Institute for Health Research, 2015.
[12] Bureau of Health Information, Exploring clinical variation in mortality - Mortality following hospitalisation, seven clinical conditions, NSW, July 2012 – June 2015
[13] Agency for Clinical Innovation. Health Economics and Evaluation Team CHF data report. NSW; ACI. 2016. Source: *Admitted Patient, Emergency Department Attendance & Deaths Register, NSW Ministry of Health Secure Analytics for Population Health Research and Intelligence. (Hospitalisations represent separations).*
[14] Australian Commission on Safety and Quality in HealthCare and National Health Performance Authority. 2015
[15] Heart Foundation. Guidelines for the prevention, detection, management of chronic heart failure in Australia. Australia: National heart foundation of Australia, 2011.
[16] Agency for Clinical Innovation. NSW Clinical service framework for chronic heart failure. NSW: ACI, 2016.

is organised[17]. Examining and reducing this unwarranted variation in the management of people with COPD and CHF is thought to be an important step to improving outcomes associated with the Triple Aim.

The objectives of the RUCV program for people with COPD and CHF are to:

- improve health outcomes and efficient service delivery through the consistent provision of best practice care for people with COPD and CHF across NSW hospitals
- reduce unwarranted clinical variation in the care of people with COPD and CHF
- optimise patient and carer experience within the NSW health system through enhanced delivery of patient-centred care
- increase the education, resources and support provided to people with COPD and CHF to increase capacity for chronic disease self-management.

The focus of these programs is on inpatient assessment and management of people with a new diagnosis or an exacerbation of COPD and/or CHF. The aim is to align current practice with existing best practice guidelines for both conditions. This includes appropriate acute management, transfer of care planning, end of life care and support for chronic disease self-management. There is an emphasis on shared decision making and individualised treatment goals to inform patient-centred care.

An integral component of all LBVC programs is the alignment of priorities between the MoH, ACI, and clinical and management staff within local health districts (LHD). With the support of statewide agencies and the MoH, local clinicians and service managers will review their own practice and identify and implement comprehensive strategies to align routine care with best practice for people with COPD and CHF.

It is acknowledged that each participating LHD may have a different focus and response to the RUCV program. A range of localised LHD responses is expected and encouraged in order to achieve improvements in standardised outcome measures. These localised improvement plans will be monitored through roadmaps between LHDs and MoH.

Systematisation of local processes to detect and address unwarranted clinical variation is considered an important aspect of this program. Ongoing monitoring systems for standardised measures related to best practice care, patient experience, clinician and patient reported outcomes are critical to enhance feedback and responsiveness of the health system to facilitate program sustainability and ongoing improvements to enhance the effectiveness and experience of care.

[17] Australian Commission on Safety and Quality in HealthCare and National Health Performance Authority. Australian atlas of healthcare variation. Sydney: ACSQHC, 2015.

The monitoring and evaluation framework

Purpose

The NSW Government is committed to evaluation to ensure a sound evidence base for program improvement and to contribute to decision making. The results of robust evaluations can significantly contribute to appropriate investment strategies and future policy and program directions to improve outcomes.

During implementation of the LBVC program to RUCV for COPD and CHF, monitoring will occur to track implementation and progress. The purpose of the monitoring is to enable improvement planning as the programs roll out.

After programs have been implemented and settled, an impact evaluation will be undertaken. Impact evaluation is used to determine the overall effect of a program, including intended and unintended outcomes and the impacts on the NSW health system.

The purpose of this plan is to guide monitoring and evaluation and:

- provide insight into the implementation of the RUCV program across NSW, including the key enablers and barriers to adoption
- determine whether the program has achieved its intended objectives and the impact of those on the health system
- define data sources and collection methods, both existing and required, to assess the program across the IHI triple aim including expected and unexpected outcomes, experience of care, efficiencies and effectiveness.

Parameters and limitations

This M&E plan is focussed on evaluating the reduction of unwarranted clinical variation for COPD and CHF at a statewide level. Local LHD data collection will be necessary to enable comparison across the state.

Specific implementation indicators will be collected as monitoring measures for roadmaps and SLAs to show that LHDs are progressing towards longer term program outcomes.

As part of the LBVC program, this M&E plan identified what should be measured to answer key evaluation questions, however, data may not be available at this time. Ongoing work is required to define and establish data requirements and collection methods as the program progresses.

Measurement alignment

This plan has been developed to inform data requirements and collection systems for implementation and outcome measures. It is consistent with the LBVC measurement alighnment framework, which focusses on creating shared priorities across the NSW health system. There are three measurement levels in the framework aligned to guide the RUCV programs through implementation to the achievement of end of program outcomes (Figure 2).

These three levels include:

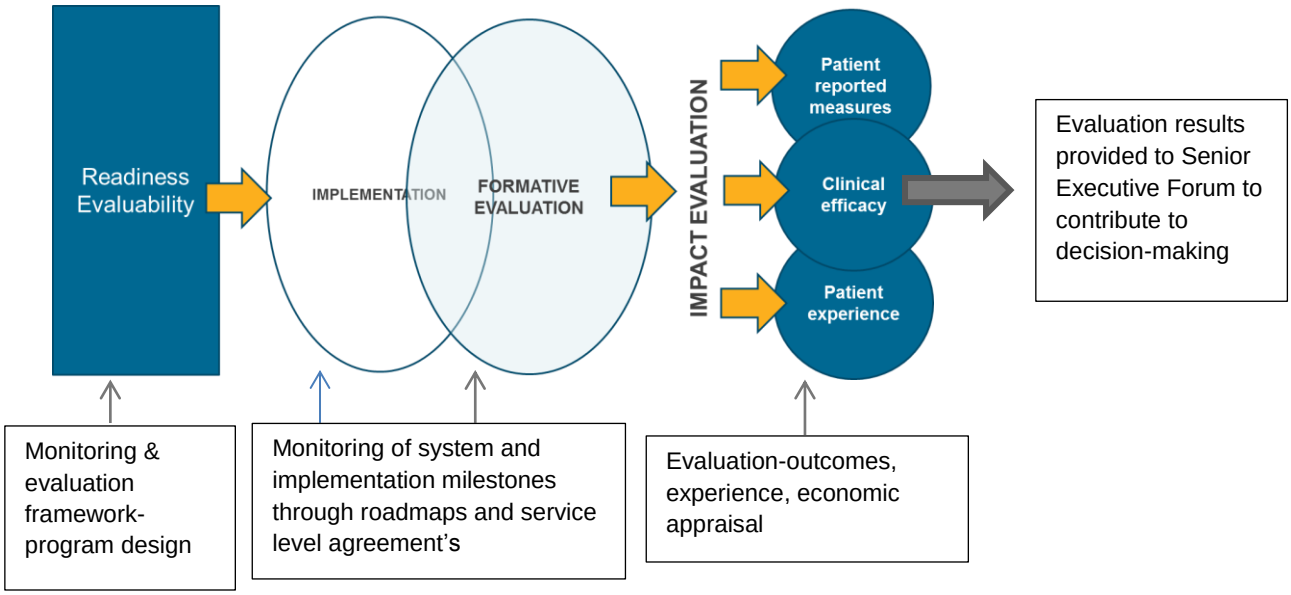
- program/project roadmaps
- service level agreements
- impact evaluation

For the first year of implementation, LBVC programs will have an additional monitoring process which involves LHD quarterly reporting to the ACI in order to indicate progress. After 12 months, ACI will use the results from the quarterly reporting data to assess outcomes achieved and apply these to a formative economic/fiscal analysis.

The measurement alignment within this M&E framework will enable:

- oversight of program delivery against anticipated milestones to identify and manage unexpected deviations (monitoring via roadmaps and service level agreements)
- a clear structure and methodology for the statewide end of program impact evaluation to guide investment, disinvestment and future improvements
- a consistent source of data collection that is integrated to avoid variations in data collection at many levels using different mechanisms.

Figure 2 Monitoring and evaluaion approach for LBVC programs



Methods

Design

The evaluation will use mixed methods with both qualitative and quantitative components. The evaluation will take an observational pre and post-implementation approach. Analysis will involve a linear mixed model to identify any observed differences in the expected outcomes as a result of the program.

The evaluation will use administrative data to identify the extent and variation of changes across LHDs pre and post implementation. Qualitative data will be collected and triangulated concurrently to provide context and complement the quantitative results. The impact on patients, staff and systems will be considered to provide a holistic evaluation of the RUCV COPD and CHF programs.

Data sources for the evaluation will include:

- administrative patient data
- roadmap and service level agreement reports and supporting data
- patient reported outcome and experience data
- staff interviews, surveys and focus groups
- patient and carer interviews or questionairres.

Pre-implementation data

The ACI Health Economics and Evaluation Team has undertaken a service utilisation and mortality analysis for people with COPD and CHF in NSW public hospitals using statewide linked administrative data. This analysis covers key characteristics of the patient cohort including examination of COPD or CHF as the primary diagnosis, readmissions, mode of separation, comorbidities, fact of death analysis and impact on resources for the five financial years from 2010-11 to 2014-15.

Pre-implementation status will be compared with post-implementation status against the intended outcomes and impacts, and will be an important component to guide the expected improvements within each LHD.

The linked datasets used for this analysis were:*

- NSW Admitted Patient Data Collection
- NSW Register of Births, Deaths and Marriages Death Registration Data
- Record linkage was performed by the Centre for Health Records Linkage

*Source- Secure Analytics for Population Health and Research Intelligence (SAPHaRI) from Centre for Epidemiology, NSW Ministry of Health

Evaluation scope and timing

The implementation of the RUCV COPD and CHF programs will occur throughout the 2017-18 financial year in two six-month phases: July to December 2017 and January to June 2018. It is anticipated that outcomes and impacts will be incrementally realised from July 2017 at phase one sites and from January 2018 at phase two sites. As the RUCV for COPD and CHF program is focused on hospital care, the scope of the evaluation will be limited to the inpatient setting. The availability of administrative data for the periods required will affect the timing of the evaluation.

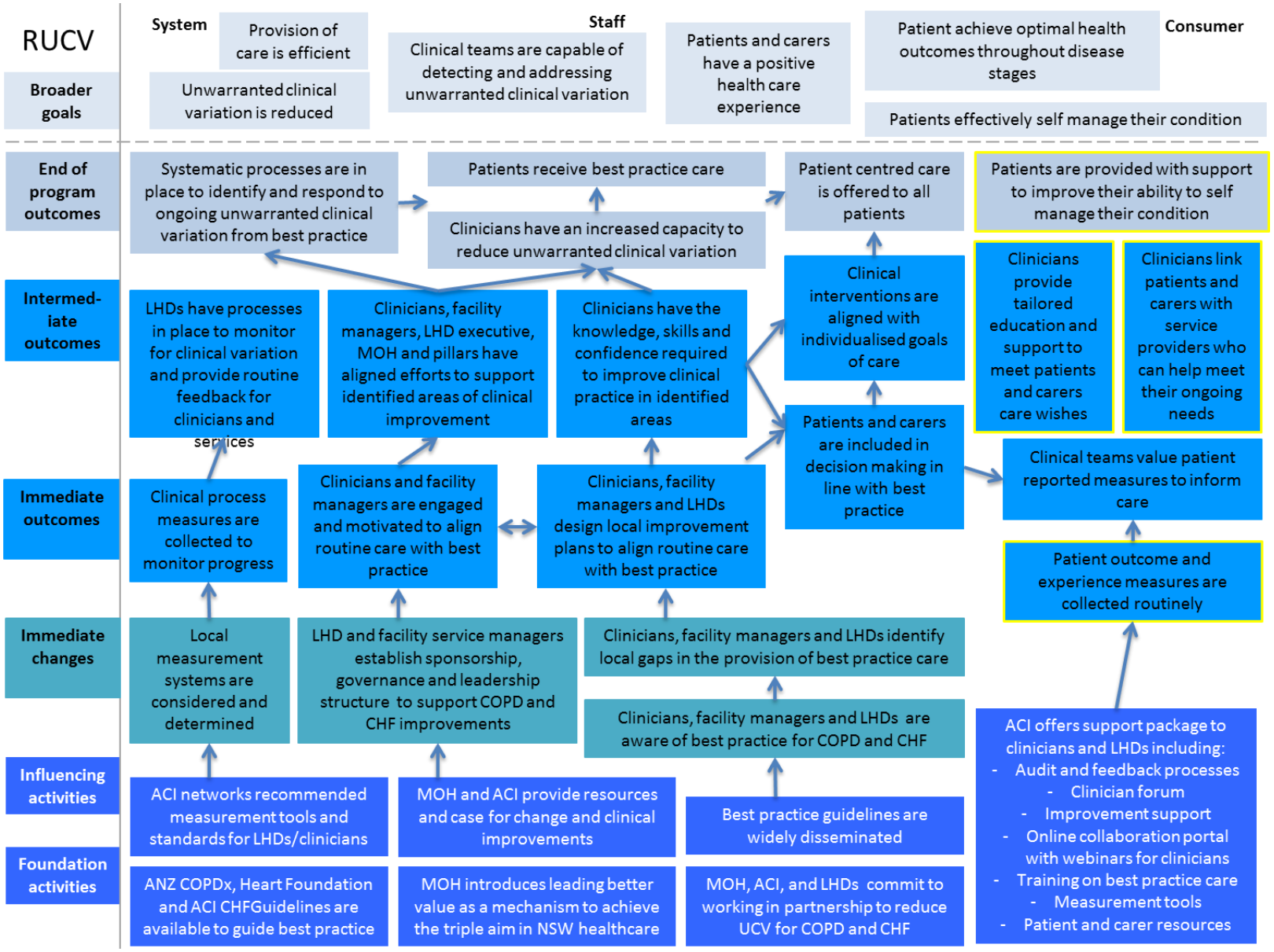
Program logic

A program logic has been developed to outline how the RUCV COPD and CHF programs will work to achieve their intended outcomes (Figure 3). It provides a foundation to guide M&E and track progress towards milestones.

There are three streams of change in the program logic: system, staff and consumers. The system component refers to how the program intends to impact the supporting and facilitating change factors within the environment. The staff component refers to mechanisms that the program will engage clinicians as the key change agents. The patient and carer component describes the actions that will contribute to optimising patient and carer experience and outcomes.

The logic should be viewed from bottom to top.

Figure 3 Program logic RUCV COPD and CHF



Assumptions

All programs (and program logics) have assumptions and/or risks that they are based on. These assumptions will be tested during the evaluation to understand the potential facilitators and barriers to change. The assumptions within the RUCV program include that:

- LHD executive, facility service managers and clinicians agree that there is a case for change and that improvements are required
- clinical teams are open to reflecting on current practice to identify gaps and are motivated to address these gaps
- LHD and facilities will establish governance and leadership of the initiatives at a local level
- systematic factors external to the program do not pose barriers to provision of best practice care
- LHD and facilities will use standardised measures of clinical effectiveness according to overarching recommendations to guide improvements
- clinical teams have an understanding of local service providers for the patient populations.

COPD cohort

The COPD cohort includes acute admitted patients aged 40 years and over with the following ICD codes (Table 2):

Table 2 Patient cohort for COPD

COPD Patient Cohort	
ICD-10AM Codes	***Description***
J40	Bronchitis, not specified as acute or chronic
J41	Simple and mucopurulent chronic bronchitis
J42	Unspecified chronic bronchitis
J43	Emphysema
J44	Other chronic obstructive pulmonary disease

Key evaluation questions

The following key evaluation questions will guide the focus of COPD monitoring and evaluation. The key questions are determined based on the program logic and in particular, the immediate, intermediate and end of program outcomes (Table 3). The focus of the RUCV in COPD evaluation is to:

- evaluate the impact of the RUCV in COPD program against the IHI Triple Aim
- identify the facilitators and constraints to the RUCV in COPD program achieving its intended outcomes
- understand how the system is equipped to sustain improvements in the future

- identify if there are areas for further improvement in the management of people with COPD.

Table 3 COPD key evaluation questions

Evaluation domains	Measurement alignment domains	Key Evaluation Questions
Appropriateness	Implementation fidelity	To what extent was the program implemented as intended?
Effectiveness	Improving experience of care	To what extent and what areas of unwarranted clinical variation were identified and reduced? What were the facilitators and constraints to the program achieving its end of program outcomes? To what extent did the program impact staff knowledge and capacity? To what extent did the program impact patient and carer experience?
Impact	Improving healthcare of the public	To what extent did the program impact patient outcomes? Are there any unexpected impacts of the program?
Sustainability	Providing efficient and appropriate care	What systems or mechanisms are in place to continue to improve care for people with COPD? Are there further elements of care for people with COPD that could be improved and is ongoing investment required? To what extent did the program impact service utilisation and cost?
Access and reach	Improving healthcare of the public	Did the program reach its intended cohort? For whom did the program work and in what context?

More detail about how these questions will be examined are contained in the data and analysis matrix. ACI will lead the data collection, analyses and feedback process for the formative and summative evaluation components in collaboration with state-wide data custodians, local health districts implementation teams, other pillars and the Ministry.

Data and analysis matrix COPD

Table 4 Data and analysis matrix for COPD

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
To what extent was the program implemented as intended?	Roadmap SLA	→ Interdisciplinary/team skill profile and structure described → Executive sponsor and governance structure in place → Collection of clinical audit data and total no. of services that participate in audit* → Improvement plan documented including articulated issue to be addressed, case for change and solution.* → Linkage, triangulation and analysis of audit, administrative, fact of death and other relevant data → Measurement systems established → Routine COPD outcome data collection in place → Evidence of systematic pathway → Provision of COPD best practice elements of care.	Descriptive analysis	Roadmap	Contrast roadmap and interview data with program logic to test the theory of change and identify similarities and deviances from intended program theory. Sample LHD interview data to assess in greater depth alignment and variation from intended program responses.
	Evaluation	→ Emerging LHD responses	Semi-structured interviews from sample LHD, ACI and Ministry staff	Primary data collection	
To what extent and	Roadmap	→ Progress made in identified clinical	Descriptive	Roadmaps	Contrast state-wide roadmap data with self-

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
what areas of unwarranted clinical variation were identified and reduced?	Quarterly Monitoring*	processes in local improvement plans*	analysis		report to verify clinical practice changes and in what areas. Evidence of magnitude of change assessed via audit or other mechanisms. Administrative data will be analysed for signs of changes in variation in specified areas.
	Evaluation	→ Self-reported clinical changes	Semi-structured interviews from sample LHDs	Primary data collection	
	SLA Impact /BHI reporting	→ Readmission and multiple admissions → In hospital deaths and 30 day mortality rates → Length of stay → Clinical variation in mortality, readmission rates, LOS, SSR, hospitalisation in last year of life will be investigated. → Total number of inpatient services that have participated in a clinical audit, reported by tragetted condition	Quantitative data extraction and analysis Pre and post comparisons	Admitted patient data collection COPD cohort admitted to a NSW public hospital with identified ICD-10-AM codes	
What were the facilitators and constraints to the program achieving its end of program **outcomes?**	Evaluation	→ Facilitators and barriers to achieving end of program outcomes from system and staff perspective	Semi-structured interviews from sample LHD, ACI and Ministry staff.	Primary data collection	Contrast key success factors and key barriers across sites with higher and lower program achievement to identify themes. Contrast patient and staff feedback on facilitators and barriers to improving the triple aim components of patient experience and outcomes.
	Evaluation	→ Patient experience of care including involvement in decision making, education and confidence in self-management	Patient focus groups/interviews /surveys	Primary data collection	
To what extent did	Roadmap	→ Knowledge and attitude change	Descriptive	Roadmaps	Contrast uptake and post education evaluation

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
the program impact staff knowledge and capacity?		→ Assessment of transfer to practice changes	analysis		with staff feedback on knowledge and capacity changes, and the transfer to practice.
	Evaluation	→ Changes in staff understanding of systematic process to reduce unwarranted clinical variation using best practice	Semi-structured interviews from sample LHD	Primary data collection	
To what extent did the program impact patient outcomes?	Evaluation	→ Readmission and multiple admissions → In hospital deaths and 30 day mortality rates → Length of stay	Quantitative data extraction and analysis Pre and post comparisons	Admitted patient data collection COPD cohort admitted to a NSW public hospital with identified ICD-10-AM codes	Post implementation data will be compared with pre-implementation on outcome data available.
	Evaluation	→ Patient reported outcome measure (PROM) → Change in disease health status and quality of life	PRM data collection method under development.	Patient reported outcome measure PROMIS-29	
To what extent did the program impact patient and carer experience?	Evaluation	→ Patient reported experience measure (PREM) to be identified → Extent of patient/carer involvement in care planning and decisions → Change in patient/carer disease literacy, self-management actions	BHI patient survey pre and post comparisons	BHI survey.	ACI will work in collaboration with BHI to link data to patient cohort in for baseline patient experience and thereinafter, oversample to gain adequate sample size where required
To what extent did the program impact service utilisation and	Quarterly monitoring*	→ Inpatient separations, bedday, NWAUs and LOS	Quantitative data extraction and analysis	Admitted patient data collection	Five year pre-implementation data used to determine status quo for economic analysis.

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
cost?		→ Unplanned and planned admissions (NWAUs and separations) → Process made in identified clinical processes in local improvement plans → Movement in readmissions, readmission rates and multiple admissions → Standardised separation rate* → Comorbidities → Hospital in the home (or equivalent) utilisation → Admissions (including unplanned) in the last year of life → Economic comparison of BaU base case with post implementation results (fiscal and utilisation)Summative economic evaluation (comparative economic analysis of pre and post implementation utilisation and fiscal results) → NSW Return on Investment for project	Pre and post comparisons Economic appraisal	COPD cohort admitted to a NSW public hospital with identified ICD-10-AM codes Analysis of benefits realised after 12 months. Benefits realised will be applied to economic/fiscal analysis through separations, beddays, NWAUs avoided Economic/fiscal benefits applied to BaU to determine indicative benefits	Review pre and post implementation changes and observed effects regarding program responses/ improvements. Stratify patient groups to test for population subgroup differences. The decision to implement will primarily depend on return on investment, net present value and utilisation analysis results. Pre-implementation Business as Usual base case to be used to as baseline for comparative economic analysis with post implementation results. Summative assessment of net impact through comparison of quantifiable costs and benefits of the base case with the quantifiable costs and benefits of implementation of the model of care The summative evaluation including economic analysis identifying return on investment, net present value and utilisation analysis results will inform decisions regarding ongoing investment
Are there any unexpected impacts	Evaluation	→ Unexpected impacts	Semi-structured interviews from	Primary data collection	Contrast interview data with administrative data results

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
of the program?			sample LHD, ACI and Ministry staff		
	Evaluation	→ Length of stay → NWAU → Readmission rates → Comorbidities	Quantitative data extraction and analysis	Admitted patient data collection COPD cohort admitted to a NSW public hospital with identified ICD-10-AM codes	
What systems or mechanisms are in place to continue to improve care for people with COPD?	Evaluation	→ Systems for data collection, feedback and ongoing improvement → Governance → Partnerships	Semi-structured interviews from sample LHD, ACI and Ministry staff	Primary data collection	Combine sample LHD interview data on sustainability mechanisms and roadmap deliverables for key elements of program sustainability
Are there further elements of care for people with COPD that could be improved and is ongoing investment required?	Evaluation	→ Ongoing areas for improvement identified by clinical and service manager experts	Semi-structured interviews from sample LHD, ACI and Ministry staff	Primary data collection	Current care processes and outcomes will be documented and contrasted with ideal patient pathway and comparisons identified in the literature.
	Evaluation	→ Patient experience of care	Patient/carer focus groups/interviews /surveys	People from defined COPD cohort	Degree that current systems support best practice chronic disease management as relates to COPD
Did the program reach its intended cohort?	Evaluation	Total number of patients cared referred to COPD multidisciplinary care as proportion of total patient cohort	Pre and post comparison of sub groups (location)	People from defined COPD cohort	Pre and post comparison to determine any differences in access and reach

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
		Comparison of metro and rural LHDs with standards in place			
For whom did the program work and in what context?	Evaluation	Outcomes achieved by sub group	Linear mixed model analysis of sub groups by outcomes	People from defined COPD cohort	Determination of any differences to assist in localising programs for specific locations

CHF cohort

The CHF cohort includes acute admitted patients aged 18 year and over with the following ICD codes:

Table 5 CHF patient cohort

CHF Patient Cohort	
ICD-10AM Codes	***Description***
I50.0	Congestive heart failure
I50.1	Left ventricular failure
I50.9	Heart failure, unspecified
I11.0	Hypertensive heart disease with (congestive) heart failure
I13.0	Hypertensive heart and kidney disease with (congestive) heart failure
I13.2	Hypertensive heart and kidney disease w/ (congestive) heart failure and kidney failure

Key evaluation questions

The key evaluation questions for the RUCV in CHF program are outlined in Table 6. Each is related to the overall focus of the evaluation, which is to:

- evaluate the impact of the RUCV in CHF program against the IHI Triple Aim
- identify the facilitators and constraints to the RUCV in CHF program achieving its intended outcomes
- understand how the system is equipped to sustain improvements in the future
- identify if there are areas for further improvement in the management of people with CHF.

Table 6 Key evaluation questions CHF

Evaluation domains	Measurement alignment domains	Key Evaluation Questions
Appropriateness	Implementation fidelity	To what extent was the program implemented as intended?
Effectiveness	Improving experience of care	To what extent and what areas of unwarranted clinical variation were identified and reduced? What were the facilitators and constraints to the program achieving its end of program outcomes? To what extent did the program impact staff knowledge and capacity? To what extent did the program impact patient and carer experience?

Evaluation domains	Measurement alignment domains	Key Evaluation Questions
Impact	Improving healthcare of the public	To what extent did the program impact patient outcomes? Are there any unexpected impacts of the program?
Sustainability	Providing efficient and appropriate care	What systems or mechanisms are in place to continue to improve care for people with COPD? Are there further elements of care for people with COPD that could be improved and is ongoing investment required? To what extent did the program impact service utilisation and cost?
Access and reach	Improving healthcare of the public	Did the program reach its intended cohort? For whom did the program work and in what context?

Data and analysis matrix CHF

Table 7 Data and analysis matrix for CHF

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
To what extent was the program implemented as intended?	Roadmap SLA	→ Interdisciplinary/team skill profile and structure described → Executive sponsor and governance structure in place → Collection of clinical audit data and total no. of services that participate in audit* → Improvement plan documented including articulated issue to be addressed, case for change and solution.* → Linkage, triangulation and analysis of audit, administrative, fact of death and other relevant data → Measurement systems established → Routine CHF outcome data collection in place → Evidence of systematic pathway → Provision of CHF best practice elements of care.	Descriptive analysis	Roadmaps	Contrast roadmap and interview data with program logic to test the theory of change and identify similarities and deviances from intended program theory. Sample LHD interview data to assess in greater depth alignment and variation from intended program responses.
	Evaluation	→ Emerging LHD responses	Semi-structured interviews from sample LHD, ACI and Ministry staff	Primary data collection	
To what extent and	Roadmap	→ Progress made in identified clinical	Descriptive	Roadmaps	Contrast state-wide roadmap data with self-

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
what areas of unwarranted clinical variation were identified and reduced?	Quarterly Monitoring*	processes in local improvement plans*	analysis		report to verify clinical practice changes and in what areas. Evidence of magnitude of change assessed via audit or other mechanisms. Administrative data will be analysed for signs of changes in variation in specified areas.
	Evaluation	→ Self-reported clinical changes	Semi-structured interviews from sample LHDs	Primary data collection	
	SLA Impact /BHI reporting	→ Readmission and multiple admissions → In hospital deaths and 30 day mortality rates → Length of stay → Clinical variation in mortality, readmission rates, LOS, SSR, hospitalisation in last year of life will be investigated. → Total number of inpatient services that have participated in a clinical audit, reported by tragetted condition	Quantitative data extraction and analysis Pre and post comparisons	Admitted patient data collection CHFcohort admitted to a NSW public hospital with identified ICD-10-AM codes	
What were the facilitators and constraints to the program achieving its end of program outcomes?	Evaluation	→ Facilitators and barriers to achieving end of program outcomes from system and staff perspective	Semi-structured interviews from sample LHD, ACI and Ministry staff.	Primary data collection	Contrast key success factors and key barriers across sites with higher and lower program achievement to identify themes. Contrast patient and staff feedback on facilitators and barriers to improving the triple aim components of patient experience and outcomes.
	Evaluation	→ Patient experience of care including involvement in decision making, education and confidence in self-management	Patient focus groups/interviews /surveys	Primary data collection	
To what extent did	Roadmap	→ Knowledge and attitude change	Descriptive	Roadmaps	Contrast uptake and post education

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
the program impact staff knowledge and capacity?		→ Assessment of transfer to practice changes	analysis		evaluation with staff feedback on knowledge and capacity changes, and the transfer to practice.
	Evaluation	→ Changes in staff understanding of systematic process to reduce unwarranted clinical variation using best practice	Semi-structured interviews from sample LHD	Primary data collection	
To what extent did the program impact patient outcomes?	Evaluation	→ Readmission and multiple admissions → In hospital deaths and 30 day mortality rates → Length of stay	Quantitative data extraction and analysis Pre and post comparisons	Admitted patient data collection CHFcohort admitted to a NSW public hospital with identified ICD-10-AM codes	Post implementation data will be compared with pre-implementation on outcome data available.
	Evaluation	→ Patient reported outcome measure (PROM) → Change in disease health status and quality of life	PRM data collection method under development.	Patient reported outcome measure PROMIS-29	
To what extent did the program impact patient and carer experience?	Evaluation	→ Patient reported experience measure (PREM) to be identified → Extent of patient/carer involvement in care planning and decisions → Change in patient/carer disease literacy, self-management actions	BHI patient survey pre and post comparisons	BHI survey.	ACI will work in collaboration with BHI to link data to patient cohort in for baseline patient experience and thereinafter, oversample to gain adequate sample size where required
To what extent did the program impact service utilisation and cost?	Quarterly monitoring*	→ Inpatient separations, bedday, NWAUs and LOS → Unplanned and planned admissions (NWAUs and	Quantitative data extraction and analysis Pre and post comparisons	Admitted patient data collection CHFcohort admitted to a NSW public hospital with	Five year pre-implementation data used to determine status quo for economic analysis. Review pre and post implementation changes and observed effects regarding program responses/ improvements. Stratify

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
		separations) → Process made in identified clinical processes in local improvement plans → Movement in readmissions, readmission rates and multiple admissions → Standardised separation rate* → Comorbidities → Hospital in the home (or equivalent) utilisation → Admissions (including unplanned) in the last year of life → Economic comparison of BaU base case with post implementation results (fiscal and utilisation)Summative economic evaluation (comparative economic analysis of pre and post implementation utilisation and fiscal results) → NSW Return on Investment for project	Economic appriasal	identified ICD-10-AM codes Analysis of benefits realised after 12 months. Benefits realised will be applied to economic/fiscal analysis through separations, beddays, NWAUs avoided Economic/fiscal benefits applied to BaU to determine indicative benefits	patient groups to test for population subgroup differences. The decision to implement will primarily depend on return on investment, net present value and utilisation analysis results. Pre-implementation Business as Usual base case to be used to as baseline for comparative economic analysis with post implementation results. Summative assessment of net impact through comparison of quantifiable costs and benefits of the base case with the quantifiable costs and benefits of implementation of the model of care The summative evaluation including economic analysis identifying return on investment, net present value and utilisation analysis results will inform decisions regarding ongoing investment
Are there any unexpected impacts of the program?	Evaluation	→ Unexpected impacts	Semi-structured interviews from sample LHD, ACI and Ministry staff	Primary data collection	Contrast interview data with administrative data results

Question	Reporting alignment and frequency	Measure/Focus	Method	Data source	Analysis
	Evaluation	→ Length of stay → NWAU → Readmission rates → Comorbidities	Quantitative data extraction and analysis	Admitted patient data collection CHF cohort admitted to a NSW public hospital with identified ICD-10-AM codes	
What systems or mechanisms are in place to continue to improve care for people with COPD?	Evaluation	→ Systems for data collection, feedback and ongoing improvement → Governance → Partnerships	Semi-structured interviews from sample LHD, ACI and Ministry staff	Primary data collection	Combine sample LHD interview data on sustainability mechanisms and roadmap deliverables for key elements of program sustainability
Are there further elements of care for people with COPD that could be improved and is ongoing investment required?	Evaluation	→ Ongoing areas for improvement identified by clinical and service manager experts	Semi-structured interviews from sample LHD, ACI and Ministry staff	Primary data collection	Current care processes and outcomes will be documented and contrasted with ideal patient pathway and comparisons identified in the literature.
	Evaluation	→ Patient experience of care	Patient/carer focus groups/interviews /surveys	People from defined CHFcohort	Degree that current systems support best practice chronic disease management as relates to COPD
Did the program reach its intended cohort?	Evaluation	Total number of patients cared referred to COPD multidisciplinary care as proportion of total patient cohort Comparison of metro and rural LHDs with standards in place	Pre and post comparison of sub groups (location)	People from defined CHFcohort	Pre and post comparison to determine any differences in access and reach
For whom did the program work and in what context?	Evaluation	Outcomes achieved by sub group	Linear mixed model analysis of sub groups by outcomes	People from defined CHFcohort	Determination of any differences to assist in localising programs for specific locations

Limitations of the RUCV COPD and CHF evaluation

- More than one year of data post-implementation may be required to measure the impact of changes, noting possible year on year fluctuations.
- The expected variability and breadth of responses to the program across LHDs will be difficult to capture to measure program fidelity and attribution.
- The outcomes of both COPD and CHF are may be influenced by a range of external confounding factors (such as lifestyle and socio-economic factors) that are out of scope of this evaluation.
- Standardised collection of measures for clinical processes, PROMs and PREMS data is under development and availability for evaluation is not assured.

Governance

Consistent with the NSW Program Evaluation Guidelines and the ACI Framework: Understanding Program Evaluation, the evaluation of the RUCV in COPD and CHF program within the LBVC initiative will be conducted by ACI Health Economics and Evaluation Team and include an Evaluation Steering Committee. The Steering Committee will comprise content area experts (clinicians) and evaluation expertise with representation from LHDs, the Acute Care Network and independent experts at a minimum. The Steering Committee will be responsible for ensuring that the evaluation is conducted in accordance with this M&E plan and to ensure findings are communicated to relevant stakeholders and audiences. A checklist against the NSW Program Evaluation Guidelines is attached at Appendix I and is to be used to guide the evaluation activities.

Terms of Reference for the evaluation will be developed at the time of establishing the Steering Committee.

Communication and reporting plan

The dissemination of evaluation findings will be critical to inform future planning and investment decisions related to the improving the outcomes and experience for people with osteoporosis. Communication of evaluation findings will be provided in an appropriate form to each audience and stakeholder group identified. Forums for feedback and discussion of results will be important for reflection and learning. The RUCV evaluation governance committee will define a communication plan.

Audience and stakeholders

Key audiences and stakeholders include:

- The NSW Ministry senior executive forum membership, NSW Health Executive and Chief Executives, including the LBVC leadership team: interest in overall impact and future investment or disinvestment decisions.

- the ACI Executive and Network Managers: to understand program effectiveness, impact and directions for this and future programs. To understand, explain factors affecting clinical variation.
- the ACI Acute Care Network: to assess program effectiveness and provide feedback loop for ongoing improvement in the care of people with COPD and CHF.
- LHD Clinicians, service managers and executive: to understand factors affecting local performance and comparison with state and/or peer group equivalents, and to implement local quality improvement initiatives.
- patients and Carers: as partners in the care provided.

Codes of behaviour and ethics

This M&E plan comprises the delivery of human services and potentially confidential information. The evaluation will be conducted in an ethical manner and all individual records will be destroyed at the end of the evaluation.

The evaluation will be conducted in compliance with:

- *ACI Responsible governance, management and conduct of research: An ACI framework*[18]
- Australasian Evaluation Society (AES) Guidelines for the ethical conduct of evaluations[19]
- National Health and Medical Research Council (NHMRC) *National Statement on Ethical Conduct of Human Research*[20]*.*

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Appendices

Evaluation of programs in ACI checklist

Compliance with the NSW Government Program Evaluation Guidelines (January 2016)
This checklist is designed to assist people involved in evaluations in ACI ensure that evaluations are consistent with the NSW Government Program Evaluation Guidelines. A full copy of the Guidelines and the corresponding Toolkit can be accessed here:
https://www.treasury.nsw.gov.au/projects-initiatives/centre-program-evaluation

Definitions
Program evaluation builds evidence to contribute to decision making that can assist programs to operate at their optimal and to deliver good outcomes to end users.
In terms of evaluation in NSW, program refers to *"A set of activities managed together over a sustained period of time that aim to achieve an outcome for a client or client group."* Program evaluation refers to *"A rigorous, systematic and objective process to assess a program's effectiveness, efficiency, appropriateness and sustainability."*

Principles (quick check)
The Guidelines take a principles based approach using nine principles that underpin best practice in program evaluation. These are noted below for quick assessment. The principles and associated activities form the remainder of this checklist under a series of focus areas.

Principle	Check (✓)
Evaluation has been built into the program design	
Evaluation is based on sound methods	
Resources and adequate time to evaluate is included in the program	
The right mix of expertise and independence has been used to develop and undertake the evaluation	
Proper governance and oversight has been established	
The evaluation design and conduct in its undertaking meets ethical standards	
Relevant stakeholders have informed and guided the evaluation	
Evaluation data has been used meaningfully	
The evaluation is transparent and open to scrutiny	

Planning evaluation

Assessment of key processes underpinning good practice	Check (✓)	Corresponding page # in Guidelines
Has the subject of the evaluation been clearly defined?		11
Is there a clearly defined scope?		11
Is the purpose of the evaluation clear (ie what decisions will the evaluation be used to inform – continuing, expanding or discontinuing)?		11

Assessment of key processes underpinning good practice	Check (✓)	Corresponding page # in Guidelines
Are key roles and responsibilities for the evaluation allocated (who will manage, who will commission, who will conduct, who will implement findings)?		11
Are key evaluation questions defined?		11
Is there an authorising environment for the evaluation (ie: authorisation to access data, interview end users/staff)?		15

Governance

Use governance processes to ensure oversight of evaluation design, implementation and reporting.

Assessment of key processes underpinning good practice	Check (✓)	Corresponding page # in Guidelines
Is there a governance structure in place to oversight the evaluation?		11
Does the governance structure include staff with appropriate seniority and understanding of evaluation?		11
Does the governance structure include staff/stakeholders with expertise in the content area?		11
Does the governance structure include staff/stakeholders with expertise in evaluation methods?		11
Does the governance structure include processes to disseminate information?		11

Audience and stakeholders

Assessment of key processes underpinning good practice	Check (✓)	Corresponding page # in Guidelines
Do stakeholders include program participants, senior decision makers, government and non-government staff involved in managing and delivering the program?		15
Has audience (those that will receive and use the evaluation findings) been identified (ie executive funders, Cabinet, Network)?		11
Has a stakeholder communication strategy been developed as part of the evaluation plan?		12
Are stakeholders involved in all aspects of the evaluation – planning, design, conducting and		12

Assessment of key processes underpinning good practice	Check (✓)	Corresponding page # in Guidelines
understanding of the results?		

Undertaking the evaluation

Assessment of key processes underpinning good practice	Check (✓)	Corresponding page # in Guidelines
Have good project management principles, practice and tools been established to manage the evaluation?		15
Have sound methods been established to answer each of the key evaluation questions and any sub questions?		11
Have data sources and analysis approaches been defined for each question/method?		11
Are data sources (both primary and secondary) valid and robust?		11
Has data been used meaningfully to report clear statements of findings for consideration?		11
Is the evaluation plan, conduct and findings (methods, assumptions and analyses) transparent and open to scrutiny?		12
Have the ethical implications of the evaluation activities been considered and addressed adequately where personal data and impacts on vulnerable groups is potential?		12
Are privacy safeguards in place for end users, staff and vulnerable populations?		12
Is ethics approval required and if so, sought prior to commencing data collection?		12

Using key findings

Assessment of key processes underpinning good practice	Check (✓)	Corresponding page # in Guidelines
Is there a plan for communicating findings to decision makers, service providers and other stakeholders?		16
Is there a plan for how the key findings will be used?		16

The Health Economics and Evaluation Team can be contacted for further advice.

Further appendices will comprise instruments developed for data collection and will be attached in due course.