Co-location and Integration of Allied Health Services into General Practice: A demonstration trial in

North Coast NSW Medicare Local

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Partnership in the Co-location and Integration of Allied Health Services into General Practice Demonstration Trial – "the Co-location Project"

The Colocation Project was the result of a successful partnership between the North Coast NSW Medicare Local, the Northern NSW and Mid North Coast NSW Local Health Districts and eleven General Practices. It took place between May 2014 and March 2015. For further information about the project please contact Healthy North Coast Ltd 02 66185400

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GLOSSARY OF TERMS AND ABBREVIATIONS

ACI	Agency for Clinical Innovation
Co-location	Specialist nurses and allied health professionals, employed by the Local Health District, provide their services on a sessional basis from a participating community primary care practice (GP practice).
CNS	Clinical Nurse Specialists
EOI	Expression of Interest
GP	General Practitioner
HREC	Human Research Ethics Committee
Integrated Care	Integrated care aims to cut across multiple services, providers and settings to create patient centred connectivity, alignment, and collaboration within the health care sectors. It uses a coherent set of approaches and models to funding, administrative, organisational, service delivery and clinical levels. The goal of these approaches is to enhance quality of care and quality of life, consumer satisfaction, and system efficiency for patients [1]
Integration	Processes to achieve integrated care
LHD	Local Health District
MBS	Medical Benefits Scheme
MNC	Mid North Coast
MoC	Model of Care
MOU	Memorandum of Understanding
NCML	North Coast NSW Medicare Local
NNSW	Northern New South Wales
NP	Nurse Practitioner
Patient-centred care	Actively working with consumers to ensure that health information, systems and services meet their needs.

PROJECT SYNOPSIS

This report describes the evaluation of an initiative to determine whether the co-location of local health district (LHD) employed community and allied health professionals in general practice settings results in better service integration and improved patient access and experience.

Between April 2014 and April 2015, 11 practices were involved in the project across two local health districts. They worked with 4 co-located practitioners: 2 nurse practitioners (NPs) (chronic kidney disease and chronic cardiac and respiratory disease) and 2 clinical nurse specialists (CNSs) (respiratory failure and asthma). The 2 NPs provided service in Northern New South Wales Local Health District (NNSW LHD) while the 2 CNSs provided service in the Mid North Coast Local Health District (MNC LHD). Despite the title of the project it transpired that no allied health staff participated in the pilot.

The project aimed to improve the patient experience of receiving multidisciplinary care by improving integration of care from the patient and clinician perspectives and facilitating skills transfer between specialist allied health and nursing staff and the general practice team. In addition, the project tested the feasibility of partnership arrangements for co-location of LHD allied health in private general practice and the role of practice participation in team care plan reviews and case conferencing. Finally, the project established shared governance between North Coast Medicare Local (NCML) and the LHDs with Community Allied Health Manager involvement.

Three data sources were used in the evaluation: documents and activity data generated during the course of the project, survey data, and interview data.

Across the 11 practices, 4 co-located practitioners delivered 294 consultations across 77 clinics to 217 patients.

The co-location project was successful at enhancing service integration by providing patients with accessible and appropriate services by: providing a timely and convenient service (the pathway from referral to receipt of services, distance travelled, ease of referral, and making the appointment). Co-location facilitated improved coordination of patient care by enabling practice staff to participate in team care plan reviews and case conferencing and facilitating skills transfer between the specialist allied health and nursing staff and the general practice team.

The project supported the development of service processes that enabled more streamlined integration. These processes can inform an operational plan to support implementation in other contexts (e.g. referral pathways, practitioner communication, formalised organizational governance relationships, shared records).

Service integration resulted in a more positive patient experience (satisfaction and expectations); greater uptake of appropriate services by patients; and increased staff satisfaction (co-locating LHD staff and general practice staff).

There are currently no financial or policy levers at the primary / community level to truly integrate care around the patient. However, this project has demonstrated the need for, and benefits of, changes that evolve from the patient up. Starting with a small number of pilot sites, this project has identified various processes that can be implemented at the clinical, professional, and organisational levels to effectively improve the experience of integration from the perspective of patients and staff. Patients clearly benefit from having co-located practitioners who have a relationship built around trust, with systems to share patient information, and the ability to provide timely feedback and interventions.

EXECUTIVE SUMMARY

Aim

To determine whether the co-location of local health district (LHD) employed community and allied health professionals in general practice settings results in better service integration and improved patient access and experience.

Background

North Coast Medicare Local (NCML) is working in partnership with the Northern New South Wales (NNSW) and Mid North Coast (MNC) Local Health Districts (LHDs) to identify ways to improve the integration of the delivery of primary care to enhance service access, quality, efficiency, and patient satisfaction. This project involved the co-location of LHD employed nursing staff into general practices with a view to enhancing integration and improving patient outcomes, while at the same time promoting appropriate referrals and the exchange of information relevant to improving the patient's health.

Integrated care aims to cut across multiple services, providers, and settings to create patient-centred connectivity, alignment, and collaboration within the health care sectors. It uses a coherent set of approaches and models to funding, administrative, organisational, service delivery, and clinical levels. The goal of these approaches is to enhance quality of care and quality of life, consumer satisfaction, and system efficiency for patients [1].

Implementation of co-location

The project was developed in partnership between NCML and the NNSW and MNC LHDs with partial funding from the NSW Agency for Clinical Innovation (ACI). The funding facilitated the employment of project officers who engaged practices, co-ordinated the day to day running of the trial, assisted with the collection of data, and acted as change agents.

Eleven practices were involved in the project across the two LHDs. They worked with 4 co-located practitioners: 2 nurse practitioners (NPs) (chronic kidney disease and chronic cardiac and respiratory disease) and 2 clinical nurse specialists (CNSs) (respiratory failure and asthma). The 2 NPs provided service in NNSW LHD while the 2 CNSs provided service in the MNC LHD. It was originally anticipated that allied health practitioners would participate in the trial but for operational reasons this did not transpire.

Methods

The evaluation drew on mixed data sources to explore the extent to which the co-location of these healthcare professionals led to:

- Improved patient experience in receiving multidisciplinary care: the right service at the right time and in the right place;
- Improved integration of care from the perspectives of both the patient and clinicians;
- Enhanced skills transfer between specialist LHD professionals and the general practice team and vice versa; and
- Improved ability for private General Practitioner (GP) practices to participate in team-based care plan reviews and case conferencing.

Three data sources were used in the evaluation: documents and activity data generated during the course of the project, survey data, and interview data. The organising framework for the evaluation was a logic model, which examined the drivers, contexts, mechanisms, and outcomes of the co-location approach.

Results

Across the 11 practices, the 4 co-located practitioners delivered 294 consultations across 77 clinics to 217 patients. The average number of patients per clinic was 4 (range 2 - 6). The majority of consultations lasted one hour, and the GP co-consulted with the LHD clinician in approximately half of all visits. It was initially anticipated that the co-located service would provide care to existing LHD patients, but at their GP practice. While this occurred in some cases, in the majority of instances, new patients were identified.

In 9 of 11 participating practices, the co-located practitioner had direct access to the patient's electronic clinical records. Two practices used hand-written medical records.

Outcomes

Patients were largely satisfied with the co-location service (85%); they liked seeing the practitioner at the GP practice because it reduced travel (compared with seeing the practitioner at the LHD) (60%); the location was more convenient (20%); waiting times were reduced (13%) and 7% found transport easier. Patients valued the increased time with the practitioners and were more involved in their disease management. The co-located practitioners were able to access a different group of patients, and for some conditions, identify patients at earlier stages of their disease process.

At the clinical level, the co-location trial was seen to increase the efficiency of patient case management by enabling the co-located practitioner to develop or improve patient care plans and directly liaise with the GP to modify and / or discuss treatment. Having direct access to the patient files saved time and multiple transactions between the co-located practitioner and the GP, which may have reduced the number of patient appointments (this could not be quantified in this study).

Practitioners were also satisfied with the co-location project and reported that co-location resulted in improved knowledge and information sharing between the practitioners; a more collegial relationship between the practitioners; and a better understanding of each other's roles. They valued the teamwork and the benefits to the patients.

From the organisational perspective, there was a need to balance the benefits of co-location to the patients against the costs to the LHD practitioners. While the co-location was beneficial to patients and valued by practitioners, there were suggestions that the co-located practitioners' time was not used as efficiently in the general practice as it would have been in the LHD.

Mechanisms for integration

Every practice implemented and adapted the co-location project to meet their local requirements, so there was not a "one size fits all" model. However, there were consistent lessons from the participating practices which can inform the operating models for future co-location projects. These are outlined below.

Clinical integration, which is defined as the coordination of person-focussed care, within a single process across time, place and discipline, was supported by communicating and marketing the LHD clinician to patients and practices, as well as using case finding tools to identify the most appropriate patients to see the LHD clinician.

Professional integration was supported by the development of personal relationships between the co-located practitioners which helped to overcome prejudice and stereotypes, and through the engagement of GPs. For GP engagement to be effective, the GPs needed to understand the model, perceive that there were benefits to patients, be able to access the co-located practitioner, and be reminded to use the service. Integration was

enhanced by the practitioners providing joint patient consultation and sharing clinical records and the co-location of practitioners enabled patient issues to be discussed and resolved quickly.

Organisational integration is defined as the structures and governance systems to deliver comprehensive services to a defined population. Several strategies supported organisational integration, in particular: the availability of processes to support referrals and bookings; having clarity about financial relationships and reimbursement models; systems to support information sharing; ensuring available, appropriate clinical space; the availability of case-finding tools; ensuring appointments were flexible enough to meet the requirements of the practice and patients; and access to practice based partners who supported the trial.

System level integration is facilitated by rules and policies that promote vertical and horizontal integration. NCML was the agency responsible for brokering system level integration regionally. NCML established integration strategies with both LHDs with a view to establishing a common vision and language for integration across each LHD. Through the co-location project, NCML explicitly aimed to build integration from the clinical level, to break down personal and professional barriers, and overcome stereotypes, with a view to "co-designing services around the patient". These relationships were brokered through formal engagement with the stakeholders which were endorsed using a memorandum of understanding. The approach was supported through the project management support provided by NCML.

Discussion

This project involved a small pilot study to examine the way that co-location can contribute to integration between LHD funded clinicians (NPs and CNSs) and rural and regional general practices. The evaluation took place concurrently with the implementation of the project, thus has primarily focussed on the processes and systems to support integration.

The co-location initiative was successful at improving the structures that can lead to better clinical integration (micro level). Patient care was enhanced by practitioners sharing information and being able to act on clinical information at a single location at a single point in time. From the patient perspective this appears to have resulted in more timely intervention, better quality interventions, and fewer clinical transactions to achieve a single therapeutic outcome.

The co-location project also effected changes at the meso (organisational and professional) levels. There was evidence that the project improved relationships and trust between the practitioners, and created opportunities for role sharing, and better interprofessional relationships. The organisational and governance structures that supported these relationships included joint record sharing, provision of physical space, having a 'champion' within the general practice to support co-location, and having the tools to identify and engage with patients so they could access the co-located practitioner.

The challenge at the meso (and higher) levels was the lack of policy tools and drivers to mediate integration. True professional integration between GPs and LHD staff is difficult to achieve when GPs are working to a fee for service model and LHD staff are salaried. This environment created different drivers and incentives, different ways of working, and limited the opportunities for shared roles and accountabilities. However, despite these challenges, this co-location project was able to establish goodwill and delivered integrated services to a number of patients.

Functional and normative integration are the activities required to link the micro, meso, and macro levels of integration. Functional integration involves the development of support functions, and activities such as financial management and information systems to embed and sustain the integration activities. Normative integration involves the development of a common frame of reference (shared vision, mission, and culture) between the organisations, professional groups, and individuals. The alignment of financial incentives with

specific targets and values is an important driver of change [15]. Under the current health financing models NCML does not have access to financial levers to drive change across disparate agencies.

Conclusions

This project aimed to better coordinate and integrate patient care at their general practice. To achieve this meant overcoming the challenge of bringing a wide range of disparate practitioners together who have no common accountability framework and are divided by fragmented funding systems. There are currently no financial or policy levers at the primary / community level to truly integrate care around the patient. However, this project has demonstrated the need for, and benefits of, changes that evolve from the patient up. Starting with a small number of pilot sites, this project has identified a number of processes that can be implemented at the clinical, professional, and organisational levels to effectively improve the experience of integration from the perspective of patients and staff. Patients clearly benefit from having co-located practitioners who have a relationship built around trust, with systems to share patient information, and the ability to provide timely feedback and interventions.

The findings supported the following propositions:

1. The co-location of specialist allied health and nursing in general practice enhances service integration by:

    a. Providing patients with accessible and appropriate services through:

        i. Providing a timely service (time between referral to AHP and nursing and receipt of services).

        ii. Providing a convenient service (the pathway from referral to receipt of services, distance travelled, ease of referral, and making the appointment).

    b. Facilitating improved coordination of patient care by:

        i. Enabling practice staff to participate in team care plan reviews and case conferencing.

        ii. Facilitating skills transfer between the co-locating specialist LHD practitioners and the general practice team.

    c. Developing service processes that:

        i. Support more streamlined integration (e.g. referral pathways, practitioner communication, formalised organizational governance relationships, shared records).

        ii. Facilitate reflection on the effectiveness of the approach to drive improvements.

        iii. Facilitate uptake and adaptation of the model in other contexts.

2. Better service integration leads to:

    a. A positive patient experience (satisfaction and expectations).

    b. Greater uptake of appropriate services by patients.

    c. Increased staff satisfaction (co-locating LHD staff and general practice staff).

Recommendations:

Micro (practice and patient level recommendations)

Recommendation 1: To develop guidelines for the selection of co-location practice sites. This should include the characteristics of the practices, and their willingness and ability to identify appropriate patients.

Recommendation 2: To develop an operational plan for co-location that draws on the learning from this evaluation.

Recommendation 3: Clarify the MBS remuneration that is possible and permissible in a co-location context and communicate this to the practices involved in co-location.

Meso (organisational level recommendations)

Recommendation 4: That future projects should capture the costs and benefits of co-location from the perspective of all stakeholders. These should consider the use of the co-located practitioner time, the benefits to the patient, and the benefits to the GP and their practice.

Recommendation 5: To increase clinician engagement with the NNSW and MNC Integration Strategies 2013 – 15. Few participants could articulate their understanding and / or picture of their role and relationship within the wider health system context.

Macro (policy level recommendations):

Recommendation 6: While beyond the scope of this project, at a policy level, true integration requires the alignment of financial incentives with patient-centred models of care that support integration around the patient, not health care practitioners.

1. AIM

To determine whether the co-location of local health district (LHD) employed community and allied health professionals in general practice settings is acceptable, administratively practicable, and results in better service integration, and improved patient access and experience.

2. BACKGROUND – HEALTH SYSTEM INTEGRATION

"For the health system to operate 'as one' in an integrated manner, partnership is essential as better patient outcomes are achieved when care is seamless" [2 p.5]. To achieve this partnership, the North Coast Medicare Local (NCML) is working with the Northern New South Wales (NNSW) and Mid North Coast (MNC) Local Health Districts (LHDs) to find ways to improve the integration of the different health service delivery systems across the region while recognising the unique cultures, leadership, values and operational arrangements of each LHD. One approach is to facilitate service and program level integration, particularly between the different players contributing to community-based primary care delivery, with the goal of developing *integrated care*.

Integrated care is defined as:

A coherent set of methods and models on the funding, administrative, organisational, service delivery and clinical levels designed to create connectivity, alignment, and collaboration within and between the cure and care sectors. The goal of these methods and models is to enhance quality of care and quality of life, consumer satisfaction, and system efficiency for patients ... cutting across multiple services, providers and settings. [Where] the result of such multi-pronged efforts to promote integration [lead to] the benefit of patient groups [the outcome can be] called integrated care [1].

This definition places consumer satisfaction and improvements in care and quality of life at the centre of integrated care. "Achieving integrated care requires those involved with planning and providing services to 'impose the patient perspective as the organising principle' of service delivery" [3 p.7]. It is expected that patient centred care and service accessibility will be improved as a result of better coordination of services, as well as provider satisfaction.

In understanding integrated care it is important to appreciate the differences between integration and integrated care. Integration has been defined as the processes, methods, tools, and models that bring about this improved coordination of care, with the outcome resulting in integrated care [1]. Integration involves connecting up the different parts of the health care system, acute care, primary care, long term care, and including other services that impact on this system such as housing and education [4].

Contextual and organisational issues have been identified as particularly important when considering the nature and extent of integrated service delivery [5]. Although rarely achieved, it is increasingly understood that integration initiatives that are well designed and implemented can translate into better outcomes for users, especially for those with complex, longer-term needs [6]. Strengthening the impetus for improved integration are the increasing number and diversity of services and programs, and the multitude of layers of integration mechanisms being put in place to establish coherence. The resulting outcome is a number of different models of service integration; each underpinned by its own assumptions, processes, and mechanisms. While several models of service integration have been introduced into the Australian healthcare system, few have been examined beyond the level of a description of a model of care (MoC) being offered to the patient [5].

It has been suggested that better integrated care enhances patient outcomes, although this is often difficult to verify [7, 8]. Therefore, issues to do with practitioner co-location versus fragmentation of services need to be explored from the user's perspective to understand how they can be managed to optimise service accessibility and efficiency. Further, the extent of organisational integration has a direct impact on the availability of patient services. For instance, patient outcomes are likely to be enhanced when services are co-located or

have established protocols promoting referrals and the exchange of information relevant to the patient's health. Similarly, the extent of systemic organisation has the potential to improve the patient experience when wider system networks share knowledge and evidence.

The nature and extent of integration between organisations is typically described in terms of cooperation, coordination, and collaboration, or the '3Cs' [9]. Specifically, cooperation refers to low levels of connection based predominantly on shared information; coordination signifies the alignment of resources and effort, while collaboration is focused on achieving systems change through dense interdependent relationships. Such a conceptual continuum can guide the design of integration efforts so they are 'fit-for-purpose'. This is particularly important given the unique circumstances of each LHD and the individual needs of each practice and patient. That is, matching the level of relationship, commitment, and intervention to suit the purposes sought. This more strategic approach affords a higher probability of precision and therefore success. Further, because it aligns purpose with resources, it reduces unnecessary transaction costs, affording a more cost-efficient approach to integration.

All of these issues are addressed in a recently developed conceptual framework for integrated health care. This framework identifies six approaches to or categories of integration: clinical, professional, organisational, system, functional, and normative (Table 1). These types of integration have been defined in terms of how they function within an integrated care model; thus facilitating their application to previous research, proposed future designs and real world contexts. Further, each category of integration is positioned within the context of the micro, meso, and macro levels of organisation and relates to either person-based or population-based care or both (Figure 1). Within this framework, the micro, meso, and macro levels are linked through the cross-cutting concepts of functional integration, which reflects the structures necessary to sustain integration, and normative integration, which is the establishment of a common frame of reference to support overall integration [10].

Figure 1: Framework for integration

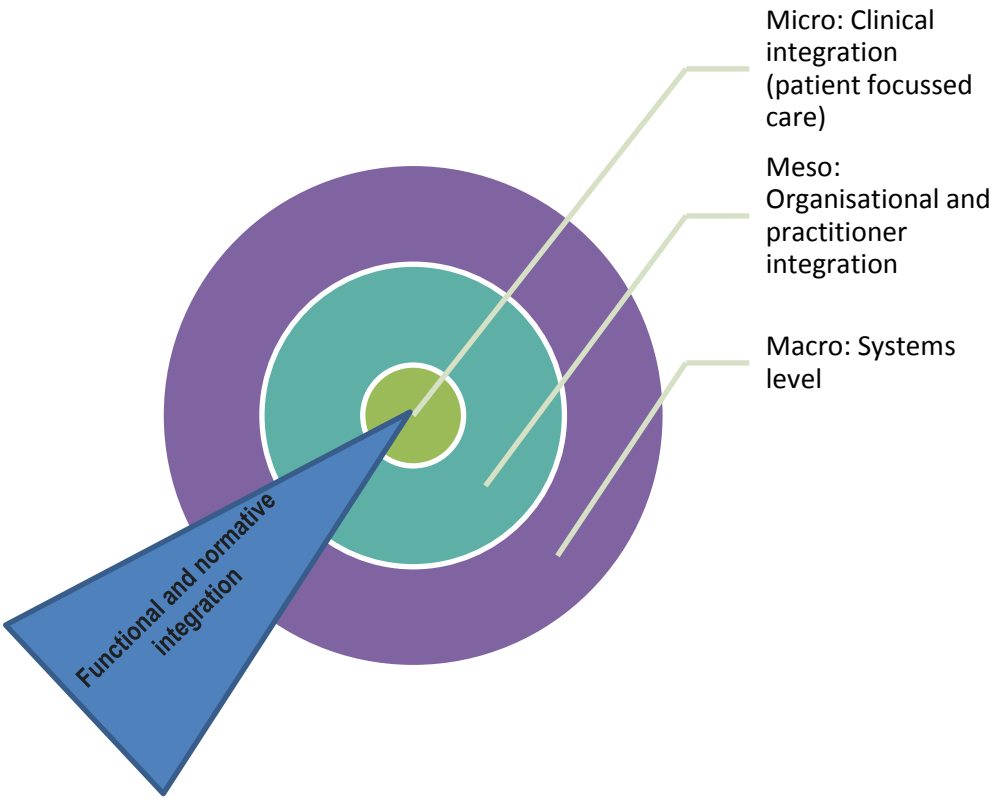


Table 1: Types of Integration [11]

Level of integration	Definition and example		Functional integration	Normative integration
Micro	**Clinical integration** *The coordination of person-focused care in a single process across time, place and discipline.*	**Linking activities**	*Key support functions and activities (i.e., financial, management and information systems) structured around the primary process of service delivery, to coordinate and support accountability and decision-making between organisations and professionals to add overall value to the system.*	*The development and maintenance of a common frame of reference (i.e., shared mission, vision, values and culture) between organisations, professional groups and individuals.*
Meso	**Professional integration** *Interprofessional partnerships based on shared competences, roles, responsibilities and accountability to deliver a comprehensive continuum of care to a defined population*.			
	Organisational integration *Inter-organisational relationships (e.g., contracting, strategic alliances, knowledge networks, mergers), including common governance mechanisms, to deliver comprehensive services to a defined population*.			
Macro	**Systems integration** *Rules and policies that promote both horizontal integration (strategies that link similar levels of care) and vertical integration (strategies that link different levels of care).*			

This framework aligns closely with the elements of NCML - LHDs partnership to achieve health service integration. These elements include:

- Shared integration agenda – focusing on health outcomes
- Shared integration vision, objectives, and narrative
- Shared leadership for health system integration
- Shared planning, service delivery and resources – including procurement, commissioning and purchasing
- Shared information structures and platforms

2.1. STUDY BACKGROUND AND CONTEXT

NCML commissioned a study in 2013 on the current state of service integration with the goal of strengthening the local implementation of primary care services [12]. This study identified weaknesses in the integration of LHD delivered community health services with general practice-based care in the region. One of this study's recommendations was that LHD employed specialist community and allied health staff could be integrated, through co-location, into general practices to enhance patient care. Both the LHDs within NCML footprint supported a trial implementation of this integrated model of service delivery entitled *Co-location and Integration of Community and Allied Health Services into General Practice Settings: A Demonstration Trial in the North Coast Medicare Local.*

The footprint of NCML covers two New South Wales LHDs, NNSW and MNC (Figure 2).

Figure 2: North Coast Medicare Local Footprint

Co-location, in this context, means these healthcare professionals provide their specialty consultation services at the GP's practice at specific times in addition or as an alternative to them providing these same services from their usual LHD base. This model of delivery was expected to enhance service integration and improve patient outcomes, while at the same time promoting appropriate referrals and the exchange of information between clinician groups. This evaluation is to determine the extent to which these outcomes have been achieved and inform future decisions on the wider adoption or adaptation of this form of service integration.

The organisational culture underpinning the co-location project involved bringing together two very different types of organisations. The LHDs are large state-funded services which operate within a hierarchical structure with all staff employees of the state government. The majority of the general practices were privately-run small businesses who receive their funding partly through the Australian Commonwealth Medicare system (Medicare) and partly through co-contributions directly from patients, or by direct payment from the patient. The other general practices were Aboriginal healthcare services funded through Medicare and grants from the Australian Commonwealth.

This demonstration trial was based on a number of assumptions:

- A strong primary health care system is a cornerstone of a good health system;
- Better integration of our primary care services will improve the overall strength and quality of the system;
- Easy access to primary care services is a critical ingredient of a strong primary care system;
- The LHD health practitioners would see the same patients as they would normally through the LHD, only the setting would be different. Therefore there would be no major impact on equity, workload, or number of patients seen.

The target population for the trial was patients with chronic disease.

The project was developed to address the following goals and objectives.

Goals:

- To test the feasibility and administrative arrangements for co-location of LHD staff in community-based primary care.
- To improve the patient experience in receiving multidisciplinary care: the right service at the right time and in the right place.
- To improve the integration of care from both the patient and clinician perspectives.
- To facilitate skills transfer between specialist LHD staff and the general practice team and vice versa.

- To evaluate these goals to inform future decisions on the wider adoption or adaptation of this form of service integration.

Objectives:

- Establish a small number of demonstration sites and services across NNSW and MNC LHDs.
- Evaluate the impact of co-location on workload, patient access, integration, skills transfer, the private sector business, and the overall acceptability of this model by all stakeholders.

Guiding principles were also agreed to by all parties involved in this trial. These principles were:

- There should be no 'out of pocket' cost to the patient to have their care provided by the LHD practitioner in the general practice setting.
- The general practices involved in the trial should not have any additional costs as a result of participating in this trial.
- The co-location was not expected to require any additional hours of LHD clinician time.

3. METHODS

The project was developed in partnership between NCML and the NNSW and MNC LHDs. NCML undertook to secure partial funding from the NSW Agency for Clinical Innovation which allowed them to engage project officers who co-ordinated between the LHDs and the practices, to manage the day to day running of the trial, assist with the collection of data, and act as change agents. These project officers were instrumental in engaging the practices, negotiating the necessary Memoranda of Understanding (MOU) and ensuring there was constant communication between the LHD staff, the participating practices, and NCML. The funding also provided for this external formal evaluation of the trial.

This evaluation drew on the principles of *realist evaluation* [13], which examines what intervention works for whom and under what circumstances.

The evaluation was based on a mixed methods approach and explored the extent to which the co-location of these healthcare professionals led to:

- Improved patient experience in receiving multidisciplinary care: the right service at the right time and in the right place.
- Improved integration of care from the perspectives of both the patient and clinicians.
- Enhanced skills transfer between specialist LHD professionals and the general practice team and vice versa.
- Improved ability for private GP practices to participate in team-based care plan reviews and case conferencing.

The organising framework for the evaluation was a logic model which examined the drivers, contexts, mechanisms, and outcomes of the co-location approach.

3.1. EVALUATION DATA

Three forms of data were used in the evaluation: documents and activity data generated during the course of the project, survey data, and interview data.

Documents were gathered from meetings and reports that related to the co-location project. Clinic activity data, in the form of numbers of clinics and patients seen, was collected by the participating practices and the LHD clinicians.

Every patient seen by a LHD clinician through the co-location project was provided with a survey by the LHD clinician. The purpose of the survey was to obtain information on their preference for the location of the appointment and any concerns they may have had in relation to seeing the LHD clinician in their general practice. The survey form is attached in Appendix A. The survey also offered the option for a patient to participate in an interview with the evaluation team if they desired.

Interviews were held with the LHD co-located practitioners; GPs, any other staff from the general practices who were involved with the co-location project (e.g. practice nurses, practice managers, reception staff, etc.); and LHD and NCML managerial staff who were involved in the project to ascertain their views on the success of the project in meeting its goals and objectives. The interviews followed a semi-structured question format (Appendix B).

3.2. ETHICS AND GOVERNANCE

Ethical approvals for this research were obtained from the Human Research Ethics Committee (HREC), Southern Cross University, Approval Number ECN-14-070, and North Coast NSW HREC, Approval Number LNR 092. In accordance with the requirements of NSW Health, Site Specific Approvals were obtained from NNSW-G241, and MNC- LNRSSA/14/NCC/67.

The project was overseen by a steering committee from each LHD which met at least quarterly during the course of project.

NNSW LHD Steering Committee Members

NCML members	NNSW LHD	Independent GP advisor
Sharyn White, Manager Strat Development and Service Design	Vicki Rose, Director Allied Health	Dr David Guest
Tracy Baker, Program Manager Health System Reform	Wayne Jones, General Manager	**External Evaluators**
Bernadette Carter, Program Officer	Kerry Wilcox, Cardiac Services and Chronic Disease Program Manager	Professor Susan Nancarrow
Dr Dan Ewald, Clinical Lead	Annette Symes, Executive Director Nursing and Midwifery NNSW LHD	Dr Alison Roots
Chris Clark, General Manager Northern Rivers	Lisa Beasley, Manager Community and Allied Health, Richmond Network, NNSW LHD	
Dr David Gregory, Clinical Lead	Athol Webb, Manager Community and Allied Health, NNSW LHD	

MNC LHD Steering Committee Members

NCML members	MNC LHD	External Evaluators
Sharyn White	Bronwyn Chalker, Director Allied Health and Integrated Care	Professor Susan Nancarrow
Tracy Baker	Mark Wilson, Network Manager Community and Allied Health	Dr Alison Roots
Fiona O'Meara	Maureen McGovern, Manager Community / Allied Health (Port Macquarie / Laurieton)	
Dr Dan Ewald	Donna Burns, General Manager NCML Mid North Coast	
Dr David Gregory		

An evaluation advisory committee was also established which comprised content and methodology experts in primary health care, integration, rural health, and workforce issues. This committee, comprising Dr Lucio Naccarella, University of Melbourne, Associate Professor Gawaine Powell-Davies, University of New South Wales, Associate Professor Michele Foster, University of Queensland, Professor Susan Nancarrow and Dr Alison Roots (Southern Cross University), met twice with the evaluation team during the course of the project.

4. RESULTS

From the initial analysis of this data a preliminary logic model was created which identified the drivers, contexts, mechanisms, outputs, and outcomes of the co-location project. A logic model is a visual display of the components of the project that is used to help build an understanding about the relationships between the actions and the results. This framework was then used as the basis of the analysis of the evaluation data.

4.1. PARTICIPANTS

NCML distributed an expression of interest (EOI) to all GPs in their region which spans across the NNSW and MNC Local Health Districts using their distribution lists for General Practices. The EOI outlined eligibility criteria for participation including the practice having a sufficient volume of patients to warrant the co-location and their willingness to participate in an independent research study on the trial.

A total of 8 and 9 practices responded to the EOI in MNC and NNSW respectively and 5 of these went on to host the project. There were a range of reasons why practices did not proceed with the trial. These included reservations about the amount of time it would take to participate in the evaluation, insufficient volume of patients, and the requirement that the co-located practitioner sessions could not attract financial remuneration. Additionally some practices did not proceed because they were not interested in the specialty of the nominated co-locating participating practitioner or they were outside of the geographic boundaries for that practitioner.

Subsequently, 2 and 4 additional practices were recruited into the trial from MNC and NNSW respectively by a variety of means including direct approach to a practice by the LHD managers, the clinical lead from NCML, or the co-locating clinicians.

Ultimately 8 practices within the NNSW LHD and 3 from the MNC LHD participated in the pilot project. These practices were not a homogenous group and included an Aboriginal Medical Service, sole practitioners, and a NCML sponsored practice in an area of high social disadvantage.

In a parallel process to the EOI circulated to GPs, the LHDs identified community-based clinicians who would participate in the study. In NNSW, 2 nurse practitioners (NPs) were nominated. These clinicians had defined areas of expertise and operated within pre-determined geographical areas.

In MNC the LHD offered 2 clinical nurse specialists (CNSs) (respiratory failure and asthma) to participate in the trial.

A MOU was signed between NCML, the relevant LHD, and each individual practice clarifying the role of each in the trial. Table 2 summarises the characteristics of practices that participated in the trial.

Table 2: Characteristics of the community-based primary care practices participating in trial

Community –based primary care practice	Number of GPs	Other Service Providers within the practice setting	Practice Volume
1	10 x GPs*	2 x Practice Nurses* Practice Manager	2100 patients
2	1 x GP	Practice Manager	1750 patients
3	3 x GPs	Practice Manager	1900 patients
4	10 x GPs	2 x Practice Nurses Allied Health Practitioners including diabetic educator, dietitian, and exercise physiologist	17000 patients
5	5 x GPs	5 x Practice Nurses Practice Manager	7000 patients
6	11 x GPs	5 x Practice Nurses Practice Manager	9000 patients
7	4 x GPs	1 x Practice Nurse Practice Manager	3500 patients
8	7 x GPs	1 x Practice Nurse Practice Manager	3500 patients
9	14 GPs	7 x Practice Nurses 1 x Practice Manager	7-8000 patients
10	1 GP	1 x Practice Manager	1000 patients
11	1 GPs	1 x Practice Nurse 1 x Practice Manager	1200 patients

*These numbers of GPs and Practice Nurses from each of the practices include both full-time and part-time professionals and varied during the time of the study.

This diversity of practice contexts resulted in the development of multiple approaches to the implementation of the co-location project. However, the general steps involved in engagement and participation are summarised in Table 3.

Table 3: Phases and Steps in the Service Delivery Process

PHASE ONE: Initiating, exploring and finalising the interface between practice and clinician	1. Practice responds to EOI process and/or practice is invited to participate in the trial. 2. MOU agreed to and signed
PHASE TWO: Identifying patients and offering them an appointment	3. Patient identified 4. Appointment offered to patient
PHASE THREE: Patient receives service	5. Patient receives service 6. Clinician co-consults 7. Treatment documented in GP file 8. Patient receives follow up

One of the assumptions underpinning the trial was that the co-located practitioners would redirect their regular patients from community health and see them at their GP's office. As a result it was initially expected that the evaluation would examine the impact of the change of venue from the patient perspective. However, in the majority of cases, the co-located practitioners saw new patients who were identified and referred by the GPs, not existing patients; therefore it was not possible to test the impact of the change of venue from the patient perspective.

The methods used to identify patients varied among the practices and included:

- GP's identifying patients
- Practice database searches undertaken using PenCAT Clinical Audit Tool to interrogate existing practice software, such as Best Practice [1]
- NPs going into practices and case finding
- Practice nurses identifying patients
- Practice managers identifying patients
- Combinations of all of the above routes

Appointments were then made for the co-located practitioners to see the patient at the practice; usually this was done by the clinic receptionist, however in some cases it was done by the practice nurse.

The co-located practitioner visits commenced in May 2014 and ran until March 2015. The practitioners attended the primary care practices an average of half a day every second month, with the range being from 2 half days per month to a single half day within 11 months. In total 77 clinics were held and 294 patients were seen in these clinics. Table 4 provides the number of clinics per month; Figure 3 the number of clinics and consultations as per practices in the trial; and Figure 4 the number of patient consultations per month.

Table 4: Number of clinics per practice and patient consultations per practice

Community –based primary care practice*	Number of clinics in 11 month trial	Number of Patient Consultations	Average number of consultations per clinic
1	9	19	2
2	10	51	5
3	5	26	5
4	6	19	3
5	6	34	6
6	5	25	5
7	5	14	3
8	1	4	4
9	7	13	2
10	14	60	4
11	9	29	3
Total	**77**	**294**	**4**

* Community-based primary care practices are in the same order and have the same number as in Table 3.

[1] PenCat and Best Practice are computerised clinical management software tools available to primary care practices in Australia.

Figure 3: Cumulative number of co-location clinics

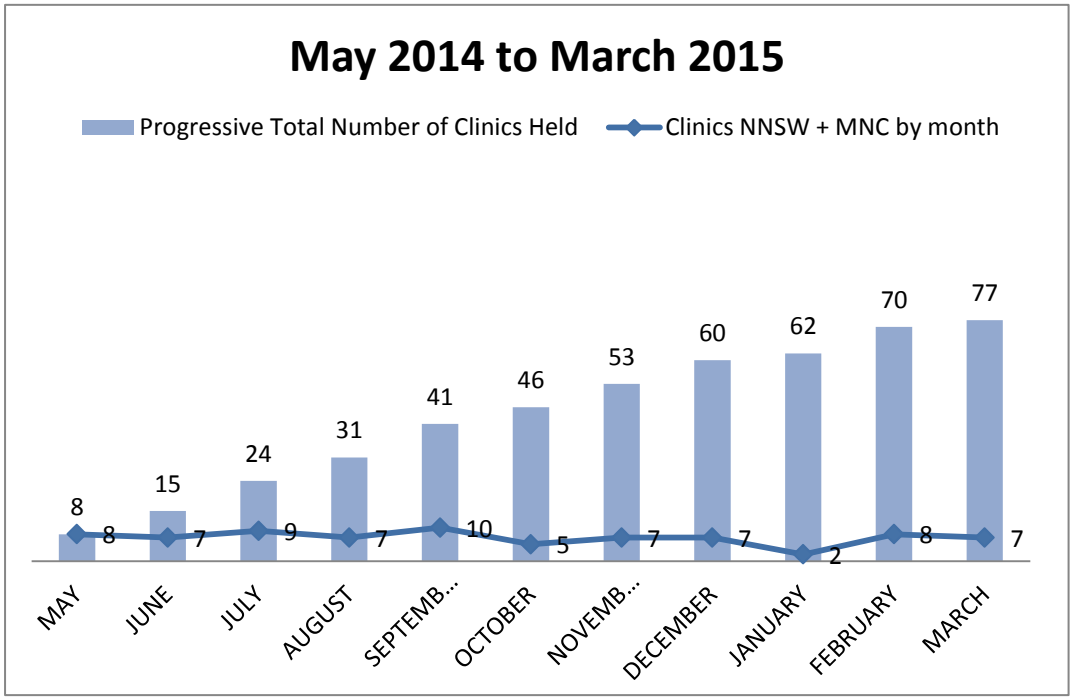
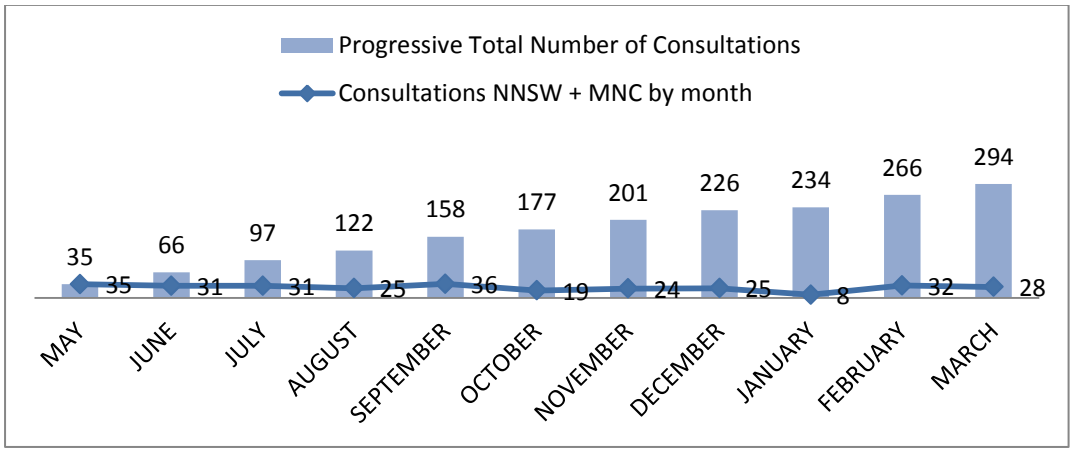


Figure 4: Number of patient consultations per month



Of the 294 consultations undertaken in these 77 clinics, 217 were with new patients and 77 were repeat visits. In addition, 41 booked consultations resulted in patient non-attendance. Some of these were cancelled appointments, others had no explanation.

The co-located practitioner's consultation with patient in the practice was generally one hour; if the patient was having a repeat consultation the length of the consultation may have been reduced to 30 minutes.

Co-consultation between LHD clinician, practice GP, and the patient occurred differently across the practices. In 4 practices, the GP scheduled a co- consultation with patient and the LHD clinician, usually during the last 10 minutes of the consultation. In 4 practices, the co-consultation did not always occur because the referring GP

was not working on the day the LHD clinician visited the practice. In some practices, the co-consultation was spontaneous or unplanned, and in some instances did not happen at all. This resulted in the patient having to make another appointment to follow up with the GP after seeing the LHD clinician, which may have involved consultation with the practice nurse.

Documentation

In 9 practices, the visiting LHD clinician had direct access to the practice's medical records software and entered their consultation notes directly into the patient file. In most of these cases they also took a printed copy of their entry back to the LHD for their own records. Two practices used hand written medical records which required the LHD clinicians to write directly into the practice record and take a copy for the LHD records or vice versa.

Patient Survey

Fifty-nine (59) patients returned the survey. Assuming that a patient would have only completed the survey once, there were 217 new patients in the trial so this provided a 27% response rate for the survey. None of the patients who returned the survey consented to participate in an interview with the evaluation team, therefore no direct patients interviews were undertaken.

Interviews

Thirty five LHD, NCML and primary care practice staff were identified for potential interviews. All potential participants were contacted by email to arrange an interview. Twenty-four people consented to interviews with the evaluation team: 6 of the 11 general practices (including GPs, practice nurses and practice managers); 10 LHD clinicians and managers; and 3 NCML staff participated in interviews.

4.2. OUTCOMES OF THE CO-LOCATION TRIAL

The outcomes are the impacts or changes arising from the intervention.

4.2.1. CLINICAL LEVEL

4.2.1.1. BETTER EFFICIENCY OF PATIENT MANAGEMENT

As a result of the co-located LHD clinicians, the GPs and practices felt they were able to provide more efficient case management for patients. In some cases this included the development and / or improvement of care plans that was not happening previously and the ability to respond to patient needs more rapidly.

Oh yes, I could manage the patient on the same day, this reduced number of follow up appointments

Practice developed and implemented … management plans that they would not have otherwise done.

Changes could be made directly to record, see patient with the GP and be present with follow up versus not [being] co-located. If I get referred a patient from a GP I can spend hours running around trying to chase up patient records, medical history, previous pathology results etc. If I go to the GP, it's all there in front of me and a lot less confusing for me, the patient and the GP.

However, this study was not able to capture the impact of the co-location on the regular case-load of the co-located practitioner.

4.2.1.2. ENHANCED QUALITY OF PATIENT EXPERIENCE

Patients benefitted from and valued having more time with the clinician to discuss aspects of their chronic disease which was perceived to help them understand their condition and augmented the care provided by the GP.

Patients like having more time, particularly as a lot of them didn't understand about all the medications and treatments they were receiving.

My most important role is that I could give them time to understand prognosis of disease so they could be proactive in [their] disease management. Patients told me they felt much better - more empowered, same with carers. They understood why they needed to do what they wanted to do.

There were suggestions that the co-located practitioners complemented the care provided by the GP.

Every now and again [he/she] will pick up something I [GP] don't pick up in a 10 minute consultation.

Yes, re care plans I [LHD clinician] can have input where it is requested or where there is one [care plan]. We can modify the disease side of care plans to make sure it is covered.

One example was a diabetic lady, the doctor thought she had respiratory problems, but then [LHD clinician] assessed her straight away and noted cardiac symptoms, she was referred to a specialist, where it turned out to be cardiac rather than respiratory, so the patient had a much quicker referral process, resulting in a correct diagnosis.

In addition, the co-located practitioners were more able to be involved along the continuum of patient care:

They was a case where a lady with a [specific concern] came into the practice, I [LHD clinician] was able to see her immediately, and again on a follow up appointment to see the whole thing through and to see that that the changes that we had made had worked. So I get to see a lot more about the patients' holistic care when I'm in the practice.

4.2.1.3. RESPONSIVENESS TO PATIENT NEEDS

The co-location of the practitioners resulted in more responsive, patient-centred care. Participants reported that co-located practitioners were able to identify at-risk patients and see them earlier in the stages of their disease progression and see existing patients more quickly. Co-location substantially reduced the 'rotating door' and subsequent information handling resulting from multiple consecutive appointments with the GP and LHD. Having access to the patients' records also streamlined the ordering of diagnostic tests. This also reinforces the efficiency of care identified above.

Earlier intervention - I've [LHD clinician] got access to a whole new group of people. I was only picking them up from the specialist or hospital, but now I can see people in early stages of disease that hasn't progressed as far.

We [LHDclinician}can make immediate changes to patient record, rather than a patient being referred to me, me looking at patient and seeing an issue and writing a letter back to the GP and then the GP writing a letter back to me, there were instances where I could make the changes straight away.

It is good for all of us to be in one spot, to have the cross pollination of information; see patient records, and see whole gambit of information relating to a patient. Often we [LHD clinicians] can't see a specialist report, we may only have a discharge summary, but for health literacy education, we need to see all the reports. For example we can say," now when you had that test your heart was like this" – whereas in the community health setting you often don't have access to that information, so it is a huge benefit.

Best thing was that I [LHD clinician] could talk to GP straight away, get an action plan, chest x-ray, and a referral to a specialist

I [LHD clinician] could see all the blood tests done in the past month, or a person who was symptomatic but had not had a [diagnostic test] for 12 months, I could suggest to the GP and they would say "yep, yep let's do that". If I see them at community health, I don't have access to x-ray etc., so I have to get all that information and patient can't get the appointment until I've done some checking, so it provides a much more instant outcome for patients.

4.2.1.4. PATIENT SATISFACTION

While only 27% of patients returned the patient satisfaction survey and none agreed to be directly interviewed, the results that were obtained showed very high levels of satisfaction with the co-location trial. The majority (85%) of patients indicated they were very satisfied with the visit.

All of the responding patients reported that the location of the appointment was appropriate and did not create any problems. The majority of patients expressed a preference to see the co-located practitioner at the general practice because it reduced travel (as compared to traveling to the the LHD facility) (60%), the location was more convenient (20%), the wait time for the appointment was less (13%) and 7% found transport easier. The location reduced difficulties associated with traveling to the main LHD facilities for patients living in rural or remote areas.

The wait time for the appointment at the practice was:

< 1 week	19%
1-2 weeks	32%
3 – 4 weeks	34%
4 – 6 weeks	7%
6 weeks – 3 months	8%

Most (95%) patients reported that the LHD clinician had access to their health history during the appointment; while the remaining 5% answered that they did not know if it was available. All (100%) of those who reported the clinician had access to their health history perceived that it was useful.

- 93% of patients reported the location of the appointment improved the care provided by the clinician
- 92% of patients reported the co-location of the practitioner improved the service they received
- 91% of patients reported that in the future they would like to see the practitioner in the GP's office; while 9% reported they would prefer to see the clinician in the LHD facility.
- 7% stated that co-location did not improve care
- 4% reported co-location resulted in no change in the service provided to the patient. One individual reported the co-location visit was "a complete waste of time and money", and one individual reported they "did not understand the reason for or value of the visit".

A similar level of patient satisfaction was reported in the feedback from the health care practitioners involved in the program.

The clients love it. They think it's great. They can sit there. They have a whole hour to lay out their problems and concerns.

No problems from clients. They were very happy to be seen. Happy that there is a [LHD clinician] in the practice trying to help them manage their problem. Everyone turned up [to their appointments], they contacted the practice to reschedule if necessary.

Clients kept coming back and more. Health coaching, clients would say they prefer one on one, face to face interaction rather than phone calls.

The clients have all been very positive about it, it gives them someone else to ask their questions to who is a specialist in the area. These [LHD clinicians] have a knowledge that GPs don't have or have lost over the years.

Clients were very appreciative of the education they got. [Co-located practitioner] was able to give clients all the information they need.

The clients kept wanting to come back – once per month for three months in a row, I have been trying to say how about leave it for a month, but they'd say I would like to come back next month.

The only reluctance from clients related to their participation in the evaluation:

Some of the patients, balked at the survey part of this evaluation. They didn't want to get followed up by a phone call. Everyone was happy to see me [LHD clinician] but not everyone wanted to get followed up by a phone call about the research.

4.2.2. PROFESSIONAL LEVEL

4.2.2.1. IMPROVED COMMUNICATION, KNOWLEDGE, AND INFORMATION SHARING BETWEEN PRACTITIONERS

The co-location project resulted in improved knowledge and information sharing between the practitioners and more collegial relationships between the practitioners.

GPs want to know you before they are comfortable sharing clients. Now we have more trusting relationships, mutual professional respect. It is between me and GPs, and also me and practice nurses. One of the practice with no practice nurse, I suggested they might need a practice nurse to do their health care plans and explained to them how it would work. The next time I went, they asked me whether I knew someone, so they have now started a part time nurse doing their health care plans.

Doctors always respect the role of nursing but from this they have new understanding of the nursing philosophy, essentials of nursing practice.

The [LHD clinician] asked them to get their patients to bring their [medical] devices with them when they came to the appointments, so they could look at their technique and check the devices. The response from the GPs was what do we need to do that for? When they finally did bring them they discovered the device was full of mould, and other terrible things that would be contributing to that person's ill health, things that would be easily fixable. We provide devices and things, so people can have an ideal delivery of the medication.

The co-located practitioners' also informed changes to the way that GP's practise with their patients.

[The] devices the patients were using were outdated e.g. spacer was out of shape was able to be replaced; issues with medication, NP was able to confer with GP to modify and improve.

There has been a recent explosion of new medications and devices for [disease]. It is now confusing for everybody, so [LHD clinician] has been educating staff here in the LHD on this. [LHD clinician] got a real grilling by some of the GPs, who were actually prescribing the wrong class of medications for [disease], did not agree with what [he/she] said. [LHD clinician] knew that the education was different to their [GPs] current prescribing practices. [LHD clinician] got a lot of disagreement when [he/she] did these sessions.

4.2.2.2. PRACTITIONER SATISFACTION AND TEAMWORK

The practitioners involved in the trial described high levels of satisfaction. The co-located practitioners enjoyed the collegiality of teamwork, and the participants valued the impact of the trial on their patients.

Everyone seemed to be really happy with co-location, it was more satisfying. Comments from GP were that they didn't realise how much more compliant the clients would be after seeing the [LHD clinician].

Team work - I love going to the GP practices, it's really easy, feels good to be part of team. I'm usually a sole practitioner. It's nice to go to places where you get to meet new people. I've got this new network of people that I've met, faces for the names that I was referring to.

In the past there have been a lot of different things that the government health service has done. Mostly they don't impact on me much. But this has been the best thing the government has ever done for general practice. I hope they don't remove the nurse

ORGANISATIONAL LEVEL

4.2.2.3. SUSTAINABILITY / CONTINUITY CONCERNS WITH THE CO-LOCATION TRIAL

Overall, the majority of interviewees perceived that the project was valuable and they would like to see it continued. However some were sceptical about the continued funding, whether it would be viable, and the level of time commitment by the LHD clinicians for it to continue.

Yes, it would be ideal, but because of funding it is probably not viable, it is a big time commitment for [LHD clinician] to come to a practice

Some people were sceptical, were anti about it starting, another project that will stop once the funding runs out. Provide a service, create a need, then pull the service, it leads to a lot of disappointment.

I expected it to be slow and disrupted and that was what it was, I expect this project will take a few years to get going.

The program has shown itself to work well but it is resource intensive, so there would need to be a different model to make it work, we couldn't provide that level of service to every individual GP service.

GPs want it to continue, they are actually concerned it might stop. There is a history here, with changes of government, funding runs out and it all stops.

The use of the NP role in the co-location strategy was viewed as a positive by a number of stakeholders.

I think the [co-located] role works well. The level of a NP is needed, for education and experience, about chronic disease. If we are going to have this model we can't have someone less experienced in the role.

The NP is a good idea, don't know that any adding any allied health would justify the cost. If someone needs an AHP – that's all in place anyway. GPs can usually refer clients to these anyway – there is good access to those types of practitioners.

In smaller practices the NP would only need to go once or twice per year, where in larger ones might need to go once or twice per month, so work load could become very large, in those cases we would have to manage it using triaging.

However, participants expressed concerns about the workforce efficiency associated with the trial, and the levels of GP engagement. While it appears that co-location benefited the patients by reducing the number of appointments needed because of the reduced clinical transactions to order diagnostic tests and change treatment, the large variations in the numbers of patients seen by each of the clinicians suggests that the co-located practitioner time may not always have been optimally used.

GP engagement is essential to make the model work efficiently and not waste the [LHD clinician's] time. When you've got clinicians who need to be timely in their delivery of services, and the clinician would see twice as many people here [LHD clinic] in the same period of time, so there were no gains for us, in fact we lost productively from the perspective of the LHD.

One LHD manager expressed this strongly:

In reality we lost, but we were hoping that there would benefits but unfortunately there was not.

Yes would like to see the specialist nurses from the LHD continue to visit general practices, maybe not as part of this project but as part of routine care.

While this trial has examined the gains from the perspective of the patient and GP clinic, it has not captured the opportunity costs associated with situating the co-located practitioner outside the LHD.

4.2.3. SYSTEM LEVEL INTEGRATION

There was a general perception that the project did not lead to a change in the overall levels of integration between the different parts of the health care system. The majority of staff interviewed (particularly clinical staff) showed little understanding of the concept of integration, their role within the wider integration strategy, or indeed their relationship with other parts of the health system. However, participants recognised that integration requires overcoming cultural differences in the care delivery models.

There is a strong need to develop a shared vision, a shared narrative. Why are we doing it? This needs to permeate and be reflected in the leadership and culture as well. They've got some progress in the leadership, vision, but patchy stuff on the cultural thinking, particularly as it comes down thru the ranks – esp. in LHD where the ranks more apparent, versus the GP sector, which is more like a cottage industry where ranks are not as apparent.

There has been no change in integration with LHD, a first step, but this is a long journey, will take 1 -3 years to make a change. We need to tie this project to a Medicare number so we can get some kind of reimbursement for the admin time that is associated with this project, people had to put in time to make this project work and we could not bill for this time.

We have been told that having chronic disease staff involved with [GP's] patients increases the GP's work load, because they have to do things that they don't usually do, like write a plan. It is about business not about patient care. They are a private for profit business, and we are trying to treat them like they are public health.

The strategy adopted by NCML was to broker relationships between clinicians, focussed around patient need, and this has largely been successful.

4.3. DRIVERS FOR INVOLVEMENT

The drivers refer to the rationale for participants undertaking the intervention.

4.3.1. CLINIC LEVEL

Practices identified their reasons for becoming involved in the co-location project as:

- to increase accessibility and quality of care for patients;
- address unmet service needs;
- to increase the service capacity of smaller general practices; and

Several of the sites reported that they became involved was because they had personal relationships with the LHD clinicians involved. None of the practitioners nominated income generation as a driver for involvement as was originally feared by some stakeholders.

We had identified a gap in the area of education around kidney disease in the services we were able to offer [our] clients. We already have a lot of integrated services with the LHD including chronic disease, allied health, and nursing; the dietitian and NP had already been coming for 1 year to see clients; however did not have any coverage in the area of renal, so when the opportunity arose we thought it was a great one to add.

I am a sole GP, and don't have access to a practice nurse, so this allowed more time for the clients, for education and review of the clients, and partly because I have a good relationship with the [LHD clinician], I knew [he/she] was very good value, so someone can actually review all the medications and just make sure everything is covered for all the clients. A lot of clients we refer to community health don't necessarily go, so here there is a captive audience, and because I was motivating them they will end up coming to the appointment.

4.3.2. PROFESSIONAL LEVEL

At a professional level, interest in chronic disease management and the desire to improve interprofessional communication were drivers for participation in the co-location project.

We have a longstanding interest in chronic disease management. We recognised that communication with other parties is an issue, particularly allied health, the local health district, and other providers who come to the practice; we wanted to improve this issue.

4.3.3. ORGANISATIONAL LEVEL

The drivers for implementing the project at the organisational level were a desire to:

- improve the delivery of a patient-centred MoC,
- enhance health care quality,
- increase health care efficiency, and
- to help implement the joint initiatives agreed between NCML and LHDs.

Client centred care – we get caught up in our own areas / disciplines and we look at issues from a service, not client perspective. The silos of care that people have to jump between are poorly interconnected, so clients are continually asked for repetitive information, and have to carry their own information between services. Things get missed and dropped. It is still a very disconnected service provided to people. Everyone has the intention of doing the right things, but we forget to look at it from the client perspective.

We wanted to improve service delivery in the GP practices…. Also, respiratory clients tend to be frequent flyers and be in and out of hospital a lot, we were hoping this would help with this.

We saw it as an opportunity for clients to have an appointment with their GP then come out and meet with chronic disease staff from community health, a one stop shop, so they could get their services all in one place.

4.3.4. SYSTEM LEVEL

The organisation overseeing the system level change was NCML, which has established integration strategies in partnership with both LHDs. The system level drivers for integration are articulated in the *Northern NSW Integration Strategy 2013 – 2015* and *Mid North Coast Health Integration Strategy 2013 – 15*. These documents emphasise the need for a:

- shared integration agenda (with a focus on health outcomes),
- shared vision and narrative,
- shared leadership,
- planning, and
- information structures and platforms.

The primary function of NCML is to integrate care and make the patient journey easier and better connected; however NCML recognised that to achieve this requires overcoming significant organisational, cultural and structural differences between general practice and the LHDs. The integration strategies of both LHDs identify the specific barriers to integration as a lack of information flow for patients and systems, disparate organisational performance measures and key performance indicators, and financial pressures which place constraints on change.

The co-location project was specifically used as a tool by the NCML and the LHDs to act as a mechanism for change to help achieve the system level integration goals.

There is a lack of understanding between GPs and LHDs in terms of what they both do. There is a huge lack of knowledge by GP of what services are really available out there. Drawing on the chronic disease management services would help to improve this. We need to build these linkages. This is the role of the co-location project.

4.4. CONTEXTS FOR INTEGRATION

The contexts are the external factors that influence the expected results of the intervention.

The introduction of NCML created the regional context for the support of the integration approach. The development of the joint integration strategy for the region and the development of a partnership between NCML and the LHDs provided the context for the co-location project to occur. This was formalised locally by the signing of the specific MOU for the co-location project between NCML, the community-based primary care practices, and the LHD, which clarified the roles and responsibilities of each party.

4.5. MECHANISMS FOR INTEGRATION

The mechanisms for integration are the triggers for behaviour change. These are drawn from the barriers and facilitators to the intervention.

4.5.1. MICRO: CLINICAL LEVEL

4.5.1.1.COMMUNICATING / MARKETING LHD CLINICIAN TO PATIENTS

The case finding process sometimes required recalling patients to the practice who were unaware that they had a health condition or risk factors that would make them appropriate to be seen by the LHD clinician. As a result the approach used to communicate with the patients needed careful consideration.

Having the clients referred from the doctor was really important, especially if they did not know they had early stage of kidney disease, they did not like getting a letter or phone from the practice nurse.

There is less information about kidney disease so people can be inclined to get over concerned when they were only early symptoms and needed education.

4.5.1.2.PATIENT IDENTIFICATION / CASE FINDING

Case finding refers to identifying the most appropriate patients to be seen by the co-located practitioner. This was an unexpected outcome of the project within the NNSW LHD as the co-located practitioners expected to see patients who were already being seen by the LHD clinician. In many instances, case finding was based on the clinical diagnosis of the patient.

The effectiveness of the case finding process was an important factor in ensuring the most efficient use of the LHD clinician. Participating practices used different models to identify appropriate patients and make referrals. These models were individually negotiated and based on practice size, available data management systems, individual practitioner preferences, established systems of case management, and relationships with individual patients. In some cases the inability to identify appropriate patients resulted in the underutilisation of the co-located staff due to small appointment numbers. Interestingly, despite initial assumptions, a lack of access to electronic records by one smaller practice was not a barrier to patient identification.

The only issue was getting enough clients, but that comes down to the screening of the clients. We offer services but clients may choose to not take it up. A couple of times we had no clients for [him/her] to see; [he/ she] would also go to the hospital while here to do education of staff so that was a good use of [his/her] time as well.

The GPs started to think about suitable clients and suggest to clients that they see me. The weight of suggestion is much stronger when it comes from a GP.

One practice had no computers; it was all paper-based. [The GP] was more organised than the computer based ones because he knew all of [his/her] clients, and was able to identify list of clients straight away. I'd turn up and open a file and it was all there. The other practices had so many clients that it took longer to put a list together and organise their appointments.

It was also important to engage with the 'right' GPs. Bulk-billing general practitioners who did not have a practice nurse were the highest users of the co-location service. They averaged more than one clinic per month, had four to five consultations every clinic and the smallest numbers of 'no shows'. This may reflect the actual difference in benefit or need in the different settings. There is a need to identify the most appropriate

practices, and then within those, the most appropriate patients to ensure these patients are included. The other practices may already have met the patients need and the referral is not needed.

4.5.2. MESO: PROFESSIONAL LEVEL

The meso (professional) mechanisms for integration are defined as the interprofessional partnerships based on shared competences, roles, responsibilities and accountability to deliver a comprehensive continuum of care to a defined population [11].

Within the co-location study, the mechanisms for professional integration were developing relationships with and the engagement of GPs.

4.5.2.1. DEVELOPING RELATIONSHIPS

The individual personal relationships that developed between clinicians were a key facilitator of integration. Personal conversations helped to overcome prejudice and stereotypes between clinicians working in different environments. These relationships develop over time, increased the trust, and therefore the likelihood of referrals to those practitioners. Similarly, over time the LHD clinicians gained greater insights into the way GPs manage chronic disease. In many cases, it was the pre-existing personal relationships between the clinicians that facilitated the involvement of practices in the integration project.

We need personal relationships to break down barriers. Co-location is a good way to break this down. We need to choose the people who go in - especially in the earlier days. Need an orientation for the LHD staff –they can't expect everyone to know what they do. Can only do this by training people to use [GP practice software], teaching them about how a GP practice runs, teaching them to work alongside GPs and practice nurses and how to run their own clinic within that setting.

A lot of negativity comes from seeing the problems with GPs, but not being able to change it. But they have to work with what they've got. We need to focus on the client –we need the GP and the other practitioners to work together, not argue. Both sides need to get on with it.

It takes time to make initial contact and develop trust within the group; many LHD practitioners are unfamiliar with the GP approach to chronic disease management.

In larger practices with multiple GPs it became noticeable that when we provided lists [of patients], the results of database searches, it seemed to take time for some GPs to allow [us] access to their client. Some were easier than others, resulting in seeing some GPs clients but not others. However, being there in person helped build relationships with the GPs, talking face-to-face helped enhance access to clients.

Often GPs find it difficult to refer to people they have not had face-to-face discussions with, but once they have had those discussions then it becomes easier to refer

4.5.2.2. ENGAGEMENT OF GPS

The effective and efficient use of the co-location model was dependent on the engagement of and appropriate referrals by GPs. The extent of GP engagement in the trial varied widely within practices and across the region. For GP engagement to be effective, the GPs needed to understand the model, perceive that there were benefits to patients, be able to access the co-located practitioner, and be reminded to use the service.

In one large practice initially only one GP referred patients, however after a number of months and education sessions by the LHD clinician other GPs started making referrals. However by the end of the trial, less than one quarter of the GPs were making referrals.

Needed to sell the benefits to GPs, to show the GPs how fantastic it is for them as well, [they can have] really experienced staff to work in their practice, it is an enormous asset. Need promotion around why it is so useful, market it, sell it.

The whole idea of integrated care is great but there is one glaring problem, both parties have to want it.

The project officer was trying really hard to motivate general practice so they could see the benefits, but they don't perceive the benefits. There is a little bit more engagement in [other locations] because the GPs there have involvement with the hospital, but [in location #1] they don't. When they don't work with the hospital they don't have that engagement with the services of the hospital.

GP engagement was facilitated by internal communication within the practice; this included meetings between the GPs and the LHD clinicians so they could help them understood the project, and by using internal email.

We have a chronic disease email within the practice so everyone who is on that email got to see what was happening, what was planned, that really helped with the internal communications.

4.5.3. MESO: ORGANISATIONAL LEVEL

The meso level (organisational) drivers of integration are defined as inter-organisational relationships (e.g., contracting, strategic alliances, knowledge networks, mergers). These included common governance mechanisms to deliver comprehensive services to a defined population.

Within the co-location project, the organisational mechanisms for integration were:

- Introducing processes to support referrals and bookings
- Clarifying financial relationships / reimbursement models
- Practice based partners willing to work with the project officer
- Systems to support information sharing
- Use of case-finding tools
- Ensuring available clinical space

4.5.3.1. PROCESSES TO SUPPORT REFERRALS AND BOOKINGS

Strong engagement from and support by reception staff was needed to ensure that a sufficient number of patients were booked-in and attended the co-location appointments. Administrative support included establishing appointment books for the LHD clinician so office staff could easily make bookings and then phoning to remind patients before their appointment. In addition, it was necessary to provide clear information to the patients about their referral to the co-located practitioner (e.g. location of visit, timing and explaining that the service was free etc.).

Across all practices there were 335 patient consultations booked, however 41 appointments resulted in patient non-attendance (12% failure to attend rate). This compares with a non-attendance rate of 7.6% from a recent North Coast primary care study [14]. Most practices said that they used a telephone reminder the day before the appointment; however other strategies were also used including better targeting the clinician's patient group.

In one practice we had difficulty getting patients to turn up to appointments, so we changed the patient group we were looking at, we starting looking at earlier points in the disease and managed to improve the turn up rates there.

4.5.3.2. CLARIFYING FINANCIAL RELATIONSHIPS / REIMBURSEMENT MODELS

The financial and billing models used by the practices in relation to the co-located practitioners varied. Practices were not allowed to charge for an allied health Medicare item number for services provided as part of the co-location pilot. However, in approximately half of the visits, the GP undertook a co-consultation with the co-located practitioner and charged the appropriate item number for this service. This was usually a level 23 or 36 consultation which remunerates a GP for an attendance above (item 36) or below (item 23) twenty minutes including to arrange any necessary investigation, implement a management plan or provide appropriate preventive health care. These item numbers were used to remunerate GPs for time spent in co-consultation with co-locating practitioners. It is important to note that the LHDs did not bill Medicare for services provided in the general practice.

The [Co-located practitioner] spent 1 hour with the clients. The Dr spent 15 mins – they bulk billed for that - level 23 for a Dr and [co-located practitioner] consultation.

The response from the practices as to whether the co-location caused financial concerns to the practice was varied. Some practices reported no financial issues:

There were no financial issues related to having [co-located practitioner] here, it just meant that the day was busier as I had to see the clients at the end of every one of [his/her] appointments, but it was for the betterment of the clients. The goal for me was to improve the access for the clients.

While another practice reported some potential financial disadvantage where the income from a care plan was normally shared between the practice nurse and the GP:

Our own nurses [practice nurses] have found it a challenge, because it is diverting income that they might have received for doing these care plans, instead the care plan was done by [co-located practitioners] and they don't get paid for doing this.

In some cases, the cost of the clinical space to accommodate the co-located practitioner was seen as a barrier to participation in the trial.

We had one GP say we can do it, but only if [LHD] are going to pay rent ($100 per week for the room). The cost-benefit to the GPs is not clear.

Most of these patients have used up their 2 care plan billings per year so we could not bill again to cover these expenses. In the current format this project is unsustainable, unless we can get some funding to cover our admin time. Consulting rooms need to generate income, so from our accountant's perspective their advice is for us not to do this.

4.5.3.3. SYSTEMS TO SUPPORT INFORMATION SHARING

Because of the diversity of data management systems used in general practice each practice developed a different approach to sharing patient information with the co-located practitioner. In the majority of cases, the co-located practitioner had access to the patients' clinic health record. However there were instances where the practice did not share patient information or files with the LHD clinician, resulting in them having to make manual records and then enter them into the LHD system on return to their LHD base. In these situations they also received no follow-up communication with the clinic after seeing the patient.

GPs just booked people in and emailed me with a list of clients that I had to see on the day we had agreed. But no information was provided on the clients I was to see.

In another instance, the co-located practitioner required specific technology to perform a diagnostic test which was only available in the LHD office. As a result, the test results had to be analysed at the LHD and then returned to the GP who would recall the patients to explain the results.

4.5.3.4. AVAILABLE AND APPROPRIATE CLINICAL SPACE

This model of integration was dependent on LHD clinicians having access to appropriate clinical space in the practices. All of the participating practices provided clinical space, at no charge, to accommodate the co-located practitioner. Ideally, the co-located practitioner would also have access to the clinical records.

Room with access to electronic records best; were instances where changes could be made directly to records

The practice manager had a log on and password for me, I just had to bring my equipment, sit at a desk and get going. Because I had already done something similar, I knew how the practice worked and insight into how to work with/complement GP, so all went smoothly.

The quality of the clinical space was a concern in one location where the LHD clinician was provided with a meeting room without a sink; while this was not ideal they were able to adapt to this by using alcohol hand rub and a lap top.

4.5.3.5. CASE FINDING TOOLS

The majority of the practices had computerised medical records systems with searchable databases and could use tools such as PenCAT to help identify appropriate patients. These tools allowed the selection of appropriate patients to be made using an interprofessional approach which involved input from both the LHD clinician and the GP. Patient identification was necessary to ensure that the co-located practitioner had access to an appropriate case-load.

4.5.3.6. PRACTICE-BASED PARTNERS WILLING TO WORK WITH THE PROJECT OFFICER FROM EACH PRACTICE

Within the participating practices, it was important to have access to a key contact person or champion for the integration project. This fulfilled a number of roles including streamlined communication between the co-located practitioners and the practices, assistance with case-finding, ensured appointments were organised, and provided support for the evaluation.

Key thing to having a successful co-location was to have a contact person in each GP, someone that I could call and someone who could call me. It was more difficult when multiple people were contact people. It really helped to have the consistency of one contact person within each practice.

4.5.3.7. CONTINUITY / FLEXIBILITY OF APPOINTMENTS

The frequency of visits by the LHD clinician needed to reflect the requirements of the both the patients and the practice. The regularity of the clinics varied with the type of practitioner and the needs of the patient group; some clinicians / patients required ongoing, regular visits and others only a 'one-off' consultation. One practice felt that the frequency of visits of the co-located practitioner was not enough, while the majority were

satisfied with both frequency and timing of visits. In a few cases the practice thought the frequency could be reduced.

Yes, but not on the same frequency, once every 4 – 6 months would be adequate, about the same frequency as the dietitian. I usually identify clients for the dietitian and then when there are sufficient to warrant her coming out here then I call her and we arrange a day and set up the appointments

The need for administrative support to manage the LHD clinician's appointment waiting list was evident in one practice who reported a long waiting list to see the LHD clinician, but at the same time had under-utilisation of the clinician's services due to patient non-attendance.

There may be an issue to discuss here about who has the long term relationship with the patient and responsibility for future care. The GP sees the LHD clinician as a consultant while the LHD professional may see themselves as the primary clinician.

4.5.4. MACRO: SYSTEMS LEVEL

System level mechanisms are defined as the rules and policies that promote vertical and horizontal integration [11].

At the system level, NCML recognised the need to initiate integration from the clinical level, rather than overlaying new hierarchies across organisations with very different cultures. In particular, the primary mechanism proposed by NCML was the building of trusting relationships to start to break down personal and professional barriers, overcome stereotypes, and to start to "*co-design services around the patient*". Having the common focus of the patient was seen as a way to identify and begin to overcome the key practical and technical barriers to integration, such as information and software systems.

You can hardwire the system, but you can't hardwire relationships.

We are replacing old structures with authentic relationships.

NCML perceived that the key to the sustainability of the integration approach was the development and nurturing of "*sincere relationships*" between stakeholders.

However there was also recognition that the financial models do not support integration, with the funding of service volumes at odds with the need for system reform.

One issue is sorting out the financial and other incentives. Of the three roles, clinical care, investment in teams, and investment in teams' position in wider health system, only delivering individual care is funded under the fee for service funding model. Even in the public sector, only bums on seats count... and are not counted well. The work to do to show how the information flows, and patient empowerment as a driver for integration doesn't get recognised or rewarded.

4.5.4.1. FACILITATORS - FORMAL ENGAGEMENT BETWEEN STAKEHOLDERS

At the systems level, the formal mechanisms used by NCML to broker integration between the LHD and the practices were the EOI and MOU. These mechanisms were brokered by a project officer who was employed by NCML. The EOI by NCML to recruit primary care practices into the co-location project and the MOU to formalise the arrangement were important ensure that there was a clear understanding of roles and responsibilities and also to ensure there was equity to the process.

4.5.4.2. PROJECT MANAGEMENT SUPPORT

This project would not have been possible without centralised coordination and project management. The project officers coordinated the MOUs, helped establish the protocols used by the practices, supported the evaluation, and acted as change agents and brokers of the project between the multiple agents.

Good to have support, [Project officer] organised everything and it was good for me to go in at grass roots level, other champions to do logistic stuff. I didn't have to worry about the MOU and get the GP to sign it. I was welcomed in, accepted from day dot as part of team.

4.5.4.3. BARRIERS – HISTORY, POLITICS AND TURF

There was evidence from all levels of stakeholder interviews that each health jurisdiction has a distinct culture and values, and in many cases, has developed strong views of the other parties within the health system, which was also an important driver for the project. Much of this is based on history, politics and professional turf.

[There is] an enormous amount of distrust between the LHD and GPs – lots of bagging of each other. We've been listening to this for years. Things haven't changed – until this [distrust] starts to change, we'll always have these problems.

Amazed when come across people who say 'this isn't my job', focussed on their own professions rather than client.

The problem is politics – people wanting to be the 'top dog' – if you go to the hospital – everything revolves around their service, [it is the] same for community, and GP. Everyone is an individual. [it will take] lots of cultural change to pull integrated care together.

Working at [systems level organisation] – they developed these [programs] with the whole of the health system in mind. Looked at processes that could work across systems for what they were developing. However, once these programs go into the community they get pulled back into service walls. Many people don't see the need for communication between practitioners.

We need to develop service programs that look at services through the clients eyes.

This is the first time they have started to work together.

5. DISCUSSION

5.1. OVERVIEW OF KEY FINDINGS

This project involved a small pilot study of co-location as a contributor to integration between LHD funded clinicians (NPs and CNSs) and rural and regional general practices. The evaluation took place concurrently with the implementation of the project, thus has primarily focussed on the processes and systems to support integration. The views of participating clinicians and service managers evolved over the life of the project.

The study findings are summarised in the following logic model (Table 5).

The evaluation shows that the co-location initiative was successful at improving the structures that can lead to better clinical integration (micro level). Patient care was enhanced by practitioners sharing information and being able to act on clinical information at a single location at a single point in time. From the patient perspective this appears to have resulted in more timely intervention, better quality interventions, and fewer clinical transactions to achieve a single therapeutic outcome.

The co-location project also effected changes at the meso levels, organisational and professional integration. There is evidence that the project improved relationships and trust between the practitioners, and created opportunities for role sharing and better interprofessional relationships. The organisational and governance structures that supported these relationships included joint record sharing, provision of physical space, having a 'champion' within the general practice to support co-location, and having tools to identify and engage with patients to access the co-located practitioner.

The challenge at the meso (and higher) levels is the lack of policy tools and drivers to mediate integration. The definition of professional integration includes interprofessional partnerships based on shared competencies, roles and responsibilities [11]. Despite the lack of formal accountability relationships, cultural differences, and disparate funding models between general practice and the LHDs, the co-location project was able to establish goodwill and deliver integrated services to a number of patients. True professional integration between GPs and LHD staff is difficult to achieve when GPs are working to a fee for service model and LHD staff are salaried. This creates different drivers and incentives; different ways of working; and limits the opportunities for shared roles and accountabilities.

In this project, the relationships were brokered through EOI which were ratified through a MOU. The different organisational accountabilities mean that there are few other levers available to NCML to achieve their true integration goal.

Similarly, there are no formal levers to drive systems integration. Systems integration is defined as the rules and policies that promote horizontal and vertical integration. While the local integration strategies create a vision for integration across the region, there are no rules or policies to sanction this approach. Thus, the integration of services locally relies on bottom –up approaches to relationship building and the development of goodwill by practitioners.

Functional and normative integration are the activities required to link the micro, meso, and macro levels of integration. Functional integration involves the development of support functions and activities such as financial management and information systems to embed and sustain the integration activities. Normative integration involves the development of a common frame of reference (shared vision, mission and culture) between the organisations, professional groups, and individuals. The alignment of financial incentives with specific targets and values is an important driver of change [15]. Under the current health financing models NCML does not have access to financial levers to drive change across disparate agencies.

This project achieved the goal of creating new relationships and new conversations between practitioners who may otherwise not have communicated.

Co-location has improved the relationships between some practitioners from community-based primary care practices and the LHDs and created some new structures to support better patient focussed care. It has shown that through co-location, record sharing can be effective, however takes a lot of local brokering and engineering to make it effective because of the heterogeneity of general practices.

The co-location project tested the following propositions, all of which were supported by the study findings:

Propositions tested	*Findings*
1. The co-location of specialist allied health and nursing in general practice will enhance service integration by:	
a. Providing patients with accessible and appropriate services through:	
i. Providing a timely service (time between referral to AHP and nursing and receipt of services).	The nature of referrals into the program meant that this proposition was not tested as originally planned. However, there was evidence from this study that new patients (not previously seen by the LHD) were identified, and the case finding tools could identify patients earlier in their disease process.
ii. Providing a convenient service (the pathway from referral to receipt of services, distance travelled, ease of referral, and making the appointment).	Patients reported that the co-located service was convenient and saved travel (60%); for some it was in a more convenient location (20%); and the wait time was less (13%).
b. Facilitating improved coordination of patient care by:	
i. Enabling practice staff to participate in team care plan reviews and case conferencing.	There was evidence of joint case reviews between the GP and co-located practitioner, and in many cases the GP attended a joint appointment with the patient and co-located practitioner.
ii. Facilitating skills transfer between the specialist allied health and nursing staff and the general practice team.	The co-location project resulted in improved knowledge and information sharing between the practitioners and more collegial relationships between the practitioners.

Propositions tested (cont.)	*Findings*
c. Developing service processes that:	
i. Support more streamlined integration (e.g. referral pathways, practitioner communication, formalised organizational governance relationships, shared records).	Through this project, several mechanisms were developed to support integration, including joint patient appointments
ii. Facilitate reflection on the effectiveness of the approach to drive improvements.	This project facilitated reflection of effectiveness at several levels (clinical, professional and organisational).
iii. Facilitate uptake and adaptation of the model in other contexts.	The processes developed in this project can be formalised into a consistent operational model that will facilitate uptake of the co-location model into other contexts.
2. Better service integration will lead to:	
a. A positive patient experience (satisfaction and expectations).	The patient feedback received for this project was wholly positive. They liked seeing the practitioner at the GP practice because it reduced travel (compared with seeing the practitioner at the LHD) (60%), the location was more convenient (20%), the wait time for the appointment was less (13%) and 7% found transport easier.
b. Greater uptake of appropriate services by patients.	There is evidence that the co-location model of care identified new patients who were not previously seen at the LHD. Through the use of case finding tools, patients could be identified earlier in their stage of disease progress.
c. Increased staff satisfaction (nursing, allied health, and general practice staff).	While not quantified, the majority of co-located practitioners were satisfied with the project.

Table 5 : Logic model for co-location / integration project

	Integration level	Drivers/Motivators	Mechanisms (what they did)	Outcomes (what they got)	What else needs to be done
Micro	**Clinical:** The coordination of person-focused care in a single process across time, place and discipline.	Increase accessibility and quality of care for patients; Address unmet service needs; Increase service capacity of smaller general practices;	Communicating/ market co-location to patients Patient identification and case findings Co-location of LHD Clinicians with GPs	Greater efficiency of patient management Enhanced quality of patient experience Increased responsiveness to patient needs Patient satisfaction	Need to identify most appropriate patients, and identify the most appropriate practices required to achieve this (Recommendation 1). To develop an operational plan for co-location that draws on the learning from this evaluation (Recommendation 2).
Meso (Professional	**Professional:** Interprofessional partnerships based on shared competences, roles, responsibilities and accountability to deliver a comprehensive continuum of care to a defined population.	Skills Sharing/Learning Workload sharing Specific interest in chronic disease management.	Developing personal relationships Engagement of GPs Case finding tools and processes Joint patient consultation Engaging / communicating with patients	Practitioner satisfaction Knowledge sharing between practitioners Improved communication Improved patient case management	Need to introduce an orientation process so that LHD and practice staff understand each other's systems, cultures and processes. Find creative ways of inter-professional sharing regarding the clinical experience of co-locating. Continued centralised (project management) support to sustain the integration process.

	Integration level	Drivers/Motivators	Mechanisms (what they did)	Outcomes (what they got)	What else needs to be done
Meso (Organisational)	**Organisational:** Inter-organisational relationships (e.g., contracting, strategic alliances, knowledge networks, mergers), including common governance mechanisms, to deliver comprehensive services to a defined population.	Improve delivery of a patient-centred MoC, Enhance health care quality, Increase health care efficiency Implement the joint initiatives agreed between NCML and LHDs.	Providing clinical space for practitioners Systems to facilitate information sharing between practitioners: Shared notes / medical records Processes to support referrals and bookings Clarify financial / funding models Provision and facilitation by external project officer: Change Agent / Broker Steering Committees	Formalised systems for brokering relationships which can be codified into an operational plan.	Future projects should capture the costs and benefits of co-location from the perspective of all stakeholders. (Recommendation 4) Increase clinician engagement with the NNSW and MNC Integration Strategies 2013 – 15. (Recommendation 5)
Macro	**Systems**: Rules and policies that promote both horizontal integration (strategies that link similar levels of care) and vertical integration (strategies that link different levels of care).	Potential efficiency gains Hospital avoidance	Existing systems include CDM and case management by the GPs Project management support (centralised coordination) Facilitated by MOUs between agencies; funding models to support integration between practitioners who are employed by different agencies.	The development of systems (described within the mechanisms) that can be used to formalised relationships in future co-location / integration projects.	There is a need to adopt a wider, systems view of integration which would recognise the potential contribution of this project within the context of other integration approaches and projects (eg Health Pathways, the Primary Health Care Musculoskeletal project).

	Integration level	Drivers/Motivators	Mechanisms (what they did)	Outcomes (what they got)	What else needs to be done
Macro	**Functional:** Key support functions and activities (i.e., financial, management and information systems) structured process of service delivery, to coordinate and support accountability and decision-making between organisations and professionals to add overall value to the system	Efficiency and effectiveness drivers	The introduction of mechanisms to support functional integration was beyond the scope of this project.	Learning to support functional integration.	True integration requires the alignment of financial incentives with patient-centred models of care that support integration around the patient, not health care practitioners (Recommendation 6).
	Normative: The development and maintenance of a common frame of reference (i.e., shared mission, vision, values and culture) between organisations, professional groups and individuals.	Optimising patient centred care	At a local level the participants released the NNSW and MNC Integration Strategies 2013 – 15.	Engagement with key stakeholders and start of new systems to support integration.	Increase system level engagement of key stakeholders around the table (Recommendation 5). This relies on the establishment and adoption of a shared vision around patient care which is supported by funding models (Recommendation 6).

5.1.1. IMPLICATIONS FOR PRACTICE (LOCALLY AND NATIONALLY)

This project reinforced the idea that co-located practitioners have the potential to provide better patient-centred care because:

- They share patient information, which reduces the time taken to make decisions about patient treatment and diagnosis decisions.
- There is the ability to identify patients earlier in their disease process who may need to be seen by a specialist practitioner or who may not normally attend additional services.
- The specialist practitioner can inform the treatment of the GP and provide them with up-to-date information about specific diseases or treatment processes.
- The patient receives the input from more than one practitioner.
- The GP can order tests and make medication changes that may otherwise not be available to the specialist practitioner, or may require an additional clinical transaction to achieve this outcome.
- Patients preferred to be seen by LHD staff in their usual general practice, and perceived better quality care.

While the co-location brought substantial benefits to the patients, the trade-off in terms of the use of the co-located practitioners' time was not captured. On average, the co-located practitioner saw 4 patients per clinic (range 2 - 6) and travel to the primary care setting required additional practitioner time. Nor did the study measure the efficiency gains that were made from being able to offer holistic care and problem solve locally, removing the need for time consuming correspondence and follow-up.

The co-location project is based on an assumption that the GP should be the central point of patient care, and this project was driven, in part, by a desire to emulate the patient-centred medical home (PCMH). There is evidence from 19 comparative studies that the PCMH can have beneficial effects on patient experiences and the delivery of preventative care services. However the PCMH is defined as "wide-ranging, team-based care; patient-centred orientation toward the whole person; care that is coordinated across all elements of the health care system and the patient's community; enhanced access to care that uses alternative methods of communication; and a systems-based approach to quality and safety" [16]. Most of the studies included in this review included the following attributes:

> Addressed chronic illness, preventive care needs, and acute care needs; used multidisciplinary teams that included a designated primary care provider and defined roles (such as who manages specific aspects of care); and coordinated care transitions (for example, follow-up of patients who have been hospitalized). Three quarters reported adding new staff (such as a case manager). All but 4 studies used strategies to enhance access, such as home or telephone visits, but no single strategy was used in most studies. Identifying high-risk patients and using evidence-based clinical guidelines, performance monitoring, and electronic health records were the most commonly used approaches to improving quality and safety.

There are clearly benefits to providing a comprehensive, coordinated approach to patient treatment. As a project to improve the communication and relationships between a small number of LHD practitioners and GPs, this approach was effective. However the small size of this pilot limits our ability to generalise on the wider systemic benefits of this approach.

Additionally, the small number of specialist, co-located practitioners involved in the study, as opposed to larger, interprofessional teams limits the spread and benefit of the approach to a small number of patients with defined diagnoses.

At the patient and practice level, this model was effective at breaking down stereotypes and barriers between the GP and the LHD-based practitioners, building relationships and establishing structures to help consolidate those relationships, such as joint appointments and shared records.

5.1.2. IMPLICATIONS FOR POLICY

This study highlights the challenges in trying to fuse together a system that is fragmented geographically, professionally, organisationally, and financially. This model is one example of a solution which starts to integrate a highly fragmented model of service delivery by addressing local service cultures and relationships.

The key facilitator for this model was the partnerships between NCML and the LHDs with the support of project management resources to facilitate the changes required at several levels and drive integration.

In the absence of wider health system values and policy drivers that support integration which are reinforced by sound financial models, primary health care integration will be difficult to achieve.

5.2. STUDY LIMITATIONS

This was a small scale evaluation in terms of the number of patients, practices, and duration; therefore the ability to draw any significant conclusions from the data is limited.

This was a short-term, complex, localised project and evaluation. Consequently, we have had to draw on a range of data sources, and the majority of the conclusions from this study reflect the study processes. Some of the primary challenges included:

- The lack of standardised data systems for capturing and reporting data.
- Our inability to link the integration intervention to important outcomes such as avoidance of hospital admission and patient outcomes.
- Low participation rates for GPs and the LHDs, which limits the generalisability of the findings.

In addition, the lack of patient willingness to be involved has limited their direct voice within this project.

6. RECOMMENDATIONS

The recommendations are presented at micro, meso, and macro levels to reflect the levels at which the stakeholders can influence the changes.

Micro (practice and patient level recommendations)

Recommendation 1: To develop guidelines for the selection of co-location practice sites. This should include the characteristics of the practices, and their willingness and ability to identify appropriate patients.

Recommendation 2: To develop an operational plan for co-location that draws on the learning from this evaluation.

Recommendation 3: Clarify the MBS remuneration that is possible and permissible in the context of co-location and communicate this to the practices involved in co-location.

Meso (organisational level recommendations)

Recommendation 4: That future projects should capture the costs and benefits of co-location from the perspective of all stakeholders. These should consider the use of the collocated practitioner time, the benefits to the patient, and the benefits to the GP and their practice.

Recommendation 5: To increase clinician engagement with the NNSW and MNC Integration Strategies 2013 – 15. Few participants could articulate their understanding and / or picture of their role and relationship within the wider health system context.

Macro (policy level recommendations):

Recommendation 6: While beyond the scope of this project, at a policy level, true integration requires the alignment of financial incentives with patient-centred models of care that support integration around the patient, not health care practitioners.

7. CONCLUSIONS

This project has provided a very clear illustration of the consequences of the high levels of fragmentation of the Australian health care system. This project aimed to better coordinate and integrate care for the patient at their general practice. This required systems to help overcome the challenges of bringing together disparate practitioners who lack a common accountability framework and are divided by fragmented funding systems. There are no financial or policy levers at the primary / community level to truly integrate care around the patient. The need for, and benefits of, system changes that evolve from the patient up were demonstrated. Starting with a small number of pilot sites, this project has identified a number of processes that can be implemented at the clinical, professional, and organisational levels to effectively improve the experience of integration from the perspective of patients and staff. Patients clearly benefit from having co-located practitioners who have a relationship built around trust, with systems to share patient information and provide timely feedback and interventions.

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9. APPENDICES

9.1. APPENDIX A: Patient Survey – CO-LOCATION OF COMMUNITY AND ALLIED HEALTH SERVICES

Thank you for answering this anonymous survey which will not identify you personally in any way. The questions will provide important information about your experience with the co-location trial being conducted by the Local Health District (LHD) and your general practice.

How to fill in this survey:

Most of the questions can be answered by circling the most appropriate answer provided. **Please provide only one answer** for each question unless otherwise directed.

If you would like to provide additional information relating to you experience with the location of these services you may provide your name and telephone number on page 2 of this survey form and a researcher will contact you. This is optional.

Please return your completed survey to the drop box in the main office of the GP practice or LHD clinic / or by the reply-paid envelope supplied.

If you have any questions about this survey you can contact Alison Roots on alison.roots@scu.edu.au or 0417667676.

The following questions relate to your view on the advantages and disadvantages associated with the location of the services you have been referred to by your General Practitioner.

Timeliness / Accessibility to Services:

After being referred to either the specialist nurse or allied health professional:

1. Were you offered the opportunity to see this clinician at your GP's clinic? *Yes* *No*

2. Where did your appointment actually occur? *GP office* *LHD clinic*

3. How long did you have to wait between being notified of your upcoming appointment and your actual appointment with the nurse or allied health professional? Please circle most correct answer.

   less than 1 week *1 – 2 weeks* *3- 4 weeks* *4 – 6 weeks* *6 weeks – 3 months* *> 3 months*

Satisfaction with location of services:

4. Did the location of this appointment create problems for you in relation to attending the appointment?

   Yes *No*

   If yes, please describe

   _____

5. Was the physical location of where the appointment occurred at the GP's office appropriate?

   Yes *No*

   If no, what was wrong with the location and what could be done to enhance the location?

   _____

6. When you saw the clinician did they have access to your health history? *Yes* *No* *Don't Know*
   If they did have access, do you think this was helpful? *Yes* *No*

7. Do you think the location of the appointment improved the care that this clinician was able to provide to you?
   Yes *No*

8. Did the location of the appointment create concerns for you? Yes No
   If yes, what were the concerns?

   _____

   _____

9. Do you think the location of the appointment improved or made worse your satisfaction with the service?
   Improved *Worse*

10. In the future would you prefer to see this practitioner in the GP's office or at the Local Health District clinic?
    GP clinic *LHD clinic*

11. Are there any other comments you would like to make about this co-location trial?
    _____
    _____

12. Would you like to provide additional information in a telephone interview about your experience (advantages / disadvantages / other concerns) associated with the **location** of the services you have been referred to by your General Practitioner? *Yes* *No*

    If yes, please provide your name and a contact number; one of the researchers associated with this evaluation will then contact you.

    Name: _____ Contact Number: _____

9.2. APPENDIX B: INTERVIEW QUESTIONS

The following questions relate to your views on the **co-location** of nursing and allied health specialty services in community-based primary care.

1. Background: Could you please describe briefly your role or level of involvement in this project?

2. Drivers for involvement: Please start by describing *how you became involved* in this project (Prompts: reasons for involvement; how you were recruited)

3. Implementation of the position: Please describe the way that this role / roles were implemented in your practice (e.g. how did they make appointments, how did the practitioner actually work with the GP / patients, did they share notes)

4. Barriers and facilitators to implementation: thinking about the implementation of this role, what types of things helped and / or hindered the implementation? (Prompts: appointment times, case finding / identification, contacting patients, funding models, support from project officer etc.)

5. Outputs and outcomes: Did the implementation of the positon goes as planned or expected? If no, why not and what has differed?

6. Outputs and outcomes: What impacts do you think that this project has had for the patient? Have you had any feedback from patients? If so, could you provide an example please?

7. Outputs and outcomes: What was the most important impact or outcomes that this role has this role had on the practice / GP? (E.g. skills transfer / joint learning, financial implications, Medicare numbers changes to the way that GPs work with others..)

8. Has this project increased the integration between your service and the local health district? If so how? (e.g. case conferencing, team development of care plans, increased efficiency, communication, health record, satisfaction with the services being offered, uptake of services by patients, managerial / operational concerns associated with co-location)

9. Outputs and outcomes: how has this role changed the way *you* work (if not answered above)?

10. Have there been any negative or unintended consequences as a result of implementing this new role?

11. Would you like to see this role / model continued (why / why not)? If so, what should be done differently to improve the benefits or impacts of the role?

12. If this role were to be continued? What should be done differently to improve the outcomes or benefits of the role?

    Do you have any other comments you think may help our understanding of the outcomes or processes / outcomes of implementing the co-location initiative