10.1071/HC23046
Journal of Primary Health Care

Supplementary Material

Developing a model for primary care quality improvement success: a comparative case study in rural, urban and Kaupapa Māori organisations

Jane Cullen[A,*], *Paul Childerhouse*[B], *Nihal Jayamaha*[A] and *Lynn McBain*[C]

[A]Massey University, Palmerston North, New Zealand

[B]Royal Melbourne Institute of Technology, Melbourne, Australia

[C]Department of Primary Care, University of Otago, Wellington, New Zealand

*Correspondence to: Email: jane2.cullen@gmail.com

Supplementary File S1. Table of representative quotes

Factor	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Project Aims	To improve the physical outcomes and to try and integrate physical and mental health care.	To give patients the availability of an appointment on the day. To alleviate the pressure of phones, to alleviate the pressure of patients walking in.	To develop some consistent practices of how we manage prioritisation To be able to improve our service for our patients in terms of them having ready access, that it is patient focused. To stop overloading our doctors and nurses	to ensure that those patients who were otherwise may have had a delay in getting access to care, were being able to get timely access to care with a nurse with the wraparound skill, and prescribing capability to be able to look after patients and not have them delayed in being provided access to care.	improve our call answered rate or decrease our dropped call rate	To provide high quality comprehensive general practice care for our patients, in a sustainable financial model
Outcomes	I just think the whole thing is one massive team effort and success" and GPs and members of our (CMH) team are communicating more frequently and regularly about joint clients. Just to emphasise the success of the programme […]	There are results that everyone can see, and it has made everyone's jobs easier. So, it added value and one of our core components was to increase access, so it aligned with all those values.	It has improved the patient journey so to speak, but also, I think it has improved staff wellbeing and morale and confidence as well	We can see, […] the value-add from a financial perspective, […] we've been able to look at the value add from a access to care for Māori, Pacific and all patients perspective. And [..] for nursing, it's been an affirming	we were sitting around 53% of answered calls across the practices. […] and we are now sitting around 87% of answered call rate. However, it wasn't really looked at the just the call volume and how much	The financial position is like transformational. The staff are very happy, our retention rate has gone up. We never had a problem with doctors, but we did have a problem with nurses and reception. So that's good. Our patient's

	now we are seeing them nearly every month and they are getting their health needs met.			opportunity for us to know that nurse clinics do make a difference for patients, and it has alleviated some appointment slots for our doctors. 52% of our consults were done by the telephone	pressure would put on other staff because of that.	continuity and access to own their own doctors improved. Our patient enrolments have grown. Our patient satisfaction has improved.
Intervention						
Fit with context The intervention must be able to be implemented within existing or available capability and capacity and aligned to organisational values. This is collectively labelled 'fit with context' in the model.	When [the PHO Clinical Manager] came and said that there was funding available, we didn't need any persuading whatsoever, because it was an opportunity to get some of our clients some good physical health care at last. And most importantly, the appointments, were free to the patient.	we decided that we would start using a GP along the same lines as the Health Care Home was rolling out we had to make a change and we had no money to do it, so we had to do it within resources.	This whole project is part of our IFHS, that was where we saw the gap and part of our IFHS She had identified some issues, when having meetings with the receptionist and the nurses, some sort of gap, was the feeling. So, she thought she would have a look at this, and she realised that there was a system-wide, [DHB]-wide need	The paediatric clinic, their patients, which are given a certain amount of capitation, and there is no co-payment. So, it's basically a flat fee. So, it's extremely expensive, using doctors to see patients in which you can't increase a fee. Because your expenses never ever go down. [...] So, from a business owners' point of	It was about being able to have more of a Manaakitanga role. A caring, a looking after role. That and the other core reason was to manage our debt. To have a response to be able to have people dealing with our patient debt, making phone calls, getting people on, setting up their AP's, and claiming, getting all our claims through is	So, if we could provide the service in a more financial model, we could charge less for it for the patients, patients would pay less, so their cost implications would have improved, and our financial result would improve. So, actually, the business and the patient's needs aligned very closely, just from a different framework. We were not

			for these sorts of things. And we are all big on passing that sort of thing on, so we thought, let's do it.	view, there was that. From a team member point of view, we wanted to start developing our nursing workforce. And [the clinic RN] had already done some […] postgraduate training […] and she wasn't using it. […] She's already done that training, let's back it up with her utilising some of those skills.	another part of it.	necessarily making great strides in the proactive, preventative health area. We were almost dictated to by that reactivity type approach to medicine.
- Relative advantage Stakeholders' perception of the advantage of implementing the intervention versus an alternative solution (12).	We had known this for years and we had worked with private practice to try and improve that ourselves without this project and failed dismally. But when [the PHO Clinical Manager] came and said that there was funding available, we didn't need any persuading	It has increased access to those patients who really need it. Well, more that we couldn't continue the way that we were we had to make a change and we had no money to do it, so we had to do it within resources. So, then just prior	It gave us a definite route, whereas before we were all on different pages. She said we could make sure that the person had a far more efficient journey if we did some triaging earlier on in the process and the West Coast and rural Australia do this, we don't need	2018, 2017, […] we had a lot of issues trying to get people in to see our doctors. twofold, recognising and upskilling of the nurses. […] And trying to better work our time so that the doctors can see patients […] Better outcomes for the patients in	there were a lot of calls dropping on the front desk when the phones were sitting with reception. The phones [coming off the front desk] allowed the receptionist to have more one-on-one face-to-face with the patient. Taking that	the sector changed, and the expectations of urgent care changed enormously. I had done a lot of research, and a lot of thinking of the problems for like two years prior to seeing that this is where we needed to go we have to be able

	whatsoever, because it was an opportunity to get some of our clients some good physical health care at last	to taking on the Health Care Home, I think it was in 2014, we decided that we would start using a GP along the same lines as the HCH was rolling out.	to reinvent it. They paid for us to do it. There was a lot of time and a lot of money put into it, it was prioritised.	terms of that they didn't need to sit and wait for a doctor.	distraction almost out of the practice by the constant ringing of phones. centralizing everything, […] would just improve or streamline all of our processes and make sure everything was done and dollared off at the end of the day properly.	to pay all our bills otherwise we can't provide the care" and "this wasn't a sustainable financial model. […] We weren't succeeding in our goals in general practice in the way that we felt that we should be, which was continuity of care and addressing the long-term condition management of the patients.
- Adaptability The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs (12).	there were lots of discussions about how best to do that and in the end, we decided that we just had to choose something and see how it went and then adjust it. Which we have tweaked and tweaked and got pretty much right. As things have	I think we did spread it out a little bit, we did put the time out a little bit. And we gave [the medical director] more acute appointments so that he could have a little bit more leeway to put people in. We started off with just going to open it	This is probably draft number 4. And it is not until you use it that you realise [about the different scenarios] so we defined and refined it several times before we got to where we are now. You can go, I don't think that is quite right and I do think	looking at where we were with our plan-do-study-act, and what we needed to tweak and adjust as we went based upon the data. That was flexible, it was just on the needs of the nurse so didn't put a timeframe to it, it was just when [the	Lots of changes, lots of communication. […] So, it was working with the GPs and the nurses to get their input into how processes, should be done in the hub. So, it worked for everyone. And then she said 'well we can try it, give it a go and	giving that feedback and then when able to, for the practice to change direction or tweak things so that actually was [a] smoother transition. nobody knew how to do it and we didn't have time to coach them. So, we stopped that, but

	come up, we have said we could do with this, we could do with that, or we could do away with that or whatever.	up from 8:30 till 12. […] So, we then had to close down that section […]. So, now we have managed to look again and close off that time that he has got, an hour a day for him to ring and book them out.	we need to change that slightly. So, that is constantly being modified.	clinic RN] felt she was comfortable, and [the GP Director] felt that she was comfortable with her skills.	we'll think what all the other practices think of it, and then we'll roll with it'.	now we're doing it. there is continuous feedback coming back how people were experiencing and then the management enabled to tweak things so that we could actually keep up with what the demands were at the same time.
Context – outer setting						
- Network relationships (The degree to which an organisation and its staff are networked, combining complementary strengths with other external organisations, their local community and population to collaborate for quality improvement.	I'm a DHB employee, employed by mental health, sitting in a medical practice that is actually run by the DHB. And the advantage of choosing [the practice] was that because you've got [the Integrated Family Health Service] and you've got community mental health, [the]	And later when it became part of the HCH, that guiding coalition became the HCH project and the PHO and DHB oversight of that as well. We are quite involved in [the PHO]. [The Nurse Lead] and I are on the Board of [the PHO] and [the Practice Manager] is involved in a number of	We had a huge roomful of people which included not only all of [this practice] but the pharmacist close by and physiotherapist and lots of others as well. So, this practice has moved beyond their own teamworking to how does this team nest within the other teams that influence their	we talked with lots of other people […] And [the clinic RN] certainly had some training with other nurse specialists, and we went to see how people did it and brought back her ideas. we're running lunchtime sessions with all the practices doing Enhanced Primary Care, so they can share experiences.	[Health Care Home Collaborative] did help with some of that initial set up. […] this is a key contact person, ring this person and have a discussion. our community outreach services include mental health, homecare nursing, or Primary Care nursing in the home and community nurses, community	our clinical director, we sent her on a study tour in 2013 and she went and visited Thomas Bodenheimer. And, […] explored it quite in depth in his work. we've been through about five cycles of the safety in practice initiative. Share owner/GP Clinical Director Primary Care […]

	medical service and the ward, everything all under the one roof. So the interrelationships were easier and its one general practice owned by the DHB.	Committee's at the LCA Council and also part of the Māori Development Committee. So, it's not really suppliers, but networking.	patients care, like the district nurses, the pharmacies, the allied health, the social workers and so on.	I'm on the clinical board of the PHO. So, I know [the data analyst] well. […] So, they ask us for a lot of help, with things that they want to know. […] Can you try this for a week? And the other director, the other GP director is also on the clinical board as well.	outreach workers Tamariki Ora WellChild service. I know the nurses that are working at [Practice E] and then I know the nurses that are working at [Practice A], and how that's going to work when they come together. So, I know that certain things are going to have to happen within that day to day.	DHB.
Identified patient/community need	We knew that funding was not the only barrier, however, because in the past part of our own initiatives had been to pay for people to go to the GP out of mental health funds, when we saw that there was a desperate need for someone to have some	Because there was a need. The need was that we were aware that our most needy patients were not able to access care in a timely manner. Being heard. If you have been unwell overnight and you're scared and frightened but being able to touch	Our philosophy is always, 'What is best for the patient?' ' So, if you think about that, we are all patients ourselves, so we sometimes think; How would I like it, if I had to deal with this. I wouldn't want to go through 3 people, I would just want to go to the right person	The patients get a much better, quicker service. Instead of waiting until 4 or 5 o'clock in the afternoon, or squashed in amongst something, they get a telephone call within 10 or 15 minutes. So, they've got somebody on the phone speaking to	we asked our patients, what they wanted to see what they felt wasn't working for them within their practice. So, there were stickies and they could write on those and it just put it back on the board, and [they say], we can never get through on the	But as part of this process we engaged an independent researcher. […], she did three focus groups one in English, one in Mandarin, one in Korean and then from that developed a big survey. We then sent out

	medical attention.	base early in the morning and it being resolved, either, no you don't need to come in, or we need to see you, we'll see you in an hour.	and deal with it. driven through the years of doing this, by mantra's or touchstones, I think the DHB calls them, like: 'If it's not good for patients, why are we doing it?'	them. We did statistics on what it was that came in, what was presenting for that age group. And the breakdown of what they were, were they ear, throats, cold, what were they? […] And that that's how we recognise what it was that we were doing with our patients and what we should do, to what level we should do things, as opposed to all children being seen no matter what.	phone. one of the initial concerns anyway was to make sure that they would be able to get through.	every adult patient an invite to do an online survey. […] And from that we came to understand that what was most important for patients was access, access to the doctor, when they wanted and preferably their own doctor and the cost. […] And that was the same for all three cultural groups but in differing orders. So, in that way we could then really see that what we're doing was supported by patients.
Context – inner setting						
Community responsibility	Because we are a small area and it is a small rural community there is a specific issue just	all of us who work here are here because we believe in the vision of serving the	we want to do what is best for the patient. we wanted to be able to improve our	The needs of our patients. what motivates the team here really is the is the collective	a lot of the people work [here], because they are passionate about the community.	the main aim was [..] to address the needs of the community that we serve. So, that we could address what

	for the community. I couldn't believe how many patients there were who had significant mental health issues […] so there was a huge need there. I think that once you have engaged patients and made promises you really have to, there is a real duty of care to keep that up.	patients. But a lot of these clients don't have whānau, so we feel like we have to fill that gap, so they can get the help and support that they need to be able to live a healthier happier live. Whānau definitely and in the context that it's not just family, you are part of the [practice] whanau. We are here because we believe that this work is important, and I think that we all believe in the […] need to provide equity. we do a lot for our clients that no other practice would do. We go the extra mile.	service for our patients in terms of them having ready access, that it is patient focused and that they have timely access to us. We were trying to make it the best practice that we could for the patient.	value that they can bring to a very high enrolled population of vulnerable patients in a very busy part of [inner city suburb].	really it was it was about being able to have more of a Manaakitanga role. A caring, a looking after role. they value the community that their practices [are] in. the organization stands for […] to uplift […] the overall health of communities that have huge Māori and Pacific populations. That was like a big thing for me, it's what I love about working here.	people wanted and that was really to get back to the basics of general practice for primary care and is to build up relationships with families and with individuals. And in that way really having people come into a place where they felt comfortable. really not just being reactive and waiting for things to happen but actually sort of keeping an eye out seeing how we can improve and meet the needs of the community. what we were saying was our enrolled population was our focus. And we put a focus completely on them.

- Distributed leadership Sharing of generic leadership tasks to influence resource availability, decision making and goal setting within an organizational perspective.(36)	And the nice thing about [the IFHS], what I'll speak to, is that its non-hierarchical [The Clinical Manager] at the PHO and [....], the mental health GP liaison nurse, myself as the registered nurse here at the practice and from Mental Health, I had a lot of contact with [...], the nurse manager of community mental health.	[the medical director] and [the practice manager]and [nurse lead]. Those 3 managers. Well, I think everybody is key. I mean, … The doctors, [the Practice Manager] obviously had to be supportive of the changes and [Administration Team Leader] had to be supportive of the changes to templates and things like that, so I think it was a whole team thing. it was […] a collective. We all had a different role.	You have to get buy-in from the owners and the staff and then the other stuff happens. If you don't have that nothing happens. The whole reception team, all of the nurses, [interviewed GP], and one of the associates [non-owner GP]. Everybody is involved in the change in here, which is good. But [another GP] and I were the doctors who went to the workshops […] and most of the nurses and the whole the reception team. Which […] was really important because they are the ones who are really at the front-	we had a […] cross functional team. So, we don't have leaders who sit there and don't do anything, we're all do'ers as well. … the nurses, […] the general manager because she would be wanting influence over budgets […], the reception team leader […], [the GP Director] […],the nurse director for our local PHO	Everyone on an even keel […]. I think we all treat each other the same, there's no hierarchy here. we're able to make these kinds of decisions, implement things. I suppose, but with the support of the manager, as long as we do the work.	we're trying […] involve everybody in the whole thing and get away from the idea that it's only the doctors that are in the game […], everybody else has a role. we have a little management team. […], those four people [clinical nurse leader, medical director, finance manager, reception] are like, you know, everybody. And in addition, the shareowners, […] they are sitting in the background like the silent chairs. And they are very pivotal because if they're objecting or not on board with what we're doing, then it doesn't work.

			line of this process.			
- Learning climate A climate in which: a) leaders express their own fallibility and need for team members' assistance and input; b) team members feel that they are essential, valued, and knowledgeable partners in the change process; c) individuals feel psychologically safe to try new methods; and d) there is sufficient time and space for reflective thinking and evaluation (12).	Our team, I would like to think that we are quite innovative and over the years we have been a team that will try new things. My manager and clinical director were all keen and very supportive. And it was just like, yep, do whatever you need to do to work in this way. No, we were very lucky with us both being able to give every day to it, it was amazing, it really was. And we were fully supported to do that. So there was never any questions of there not being any resources.	we are always trying to create new ways of doing things to be able to improve the practice. I think that we are highly motivated, we are early adopters. I think that comes from the leadership as well, because no-one is left alone. I think that the workers see that we are actually in there 'boots and all'. I can say my opinion to the senior staff and it won't get thrown back at me and be told be quiet.	We just constantly want to improve things. But our way of improving is also hopefully improving". The employers are always listening. […] So, it is that kind of learning as you go". But it was facilitating that kind of open forum for people to say, what were they afraid of, how realistic were those fears and what was everybody prepared to do to support them. people felt like they had permission to do these sorts of things.	I think we are always thinking about improving. […] there are leaders who are leading the changes, but I think […] all of us are very open to change. And we are happy to look at what we've been doing. If something has gone wrong, [we] try and think about, how can we not let this happen again? And I guess that's one thing about life and jobs and in your own life, hopefully you learn from the mistakes.	it's quite common for staff to voice ideas and have them and be able to run with those and trial new things. I think we're lucky in the fact that we're able to make these kinds of decisions, implement things. I suppose, but with the support of the manager as long as we do the work. So, everything from the way we set up our services, how can we run it better, how can we have a safer process.	Well we still want to do this, let's do what we can. And if we can't do it perfectly [..], don't worry at least we'll be doing better than if we didn't do it at all. we make decisions and do it. And if we've made a decision and it's not working, we stop it. I think it's this never sort of sitting back and saying things are fine, it's always saying well we have reached this point what can we do, going forward. We've been more cutting edge. We've been braver than a lot of other people to do stuff.

			We just constantly want to improve things. But our way of improving is also hopefully improving.			
- Teamwork The combined efforts of a group of people working together to achieve a common goal.	I think that we're a strong team, we support each other and are not getting to dragged into the politics of life. So its entirely a team approach, it's not an I am, it's a wouldn't happen without any one of us contributing and helping.	we all recognise that this is an Iwi affiliated organisation and I think that we believe in teamwork and being supportive to each other. Which is why it worked so well because it was not just one person having to do the action it is actually the whole team.	we are lucky, we do have this team approach in everything we do. relationship building […] is key everybody is involved in the planning, decision and evaluation, everybody.	We are a great team, we all work together as a full team, as well as in our own teams. We're supportive of each other. I think we've got a very woven, well respected, well trusting team that have a good collegial relationship, and a high level of trust with each other.	they are like my Whānau I think we hire really good people. And they all contribute to the team success, and they all support each other. We're really comfortable with each other, we get along.	we've all been part of the team, throughout the whole process we've all been involved in interacting and looking at proposals and giving our insights and how we see things evolving. team building we work on that on a daily basis
Process						
Planning	there were lots of discussions on how the nurse/doctor appointments would be arranged and how much time to be allocated.	Approaching everyone at MDT's as a group and also the templates. So, there was action put behind that, templates were made, [the CD/GP]	definitely had it structured, and it was well organised I think that we've got good routines in place. And good instruction, and	we did the project scope first, what was included and what was excluded. So, we did the 300-patient case review […] We analysed	I had done up a project plan. That was probably my saving grace and making sure that everything, all the boxes were being	there's a few months of planning, so that people could make the necessary changes in it the key to success is

	We started off by identifying, who are the people […] there was actually 3 lists of people [that needed to be seen in the practice]. Then we basically worked on, […], identifying who the case managers were. then basically I went away and developed the advanced form that we use.	was willing to do triage. It was more showing the team that this is what we are going to do, and we are doing it. But basically, that was one week and then the next week we were into it. We find that we don't have a lot of time here to communicate, which is sometimes a bad thing because changes happen so rapidly, and everyone here is in change fatigue. We also lack the ability to find the space to be planning.	visual things, the flowchart was really good.	that data we had to rearrange templates, […] we had to make sure that we had the nurse available at that time, we had to train the reception staff on how they handled those phone calls. And we had great big sheets of butchers paper all over the place. And we were writing what we needed to figure out.	ticked. A proposal that went to the Audit and Risk Committee, which sits within our Runanga Board. […], PHO Board first and then Audit and Risk Committee, and then the Runanga Board.	really planning. […] before anything was done that people really had a good think about it and looked at all the aspects. there wasn't any point that a person sat there and said, what do we have, what are we going to do now? […] it was very much proactive […] so when anything did arise there was actually a plan in place already.
Sensemaking Pulling together disparate views to create a plausible understanding of the complexity around us and then testing that understanding to	We have our own informal feedback, we have regular meetings where we discuss this project. And once the project started it was just mainly just	But we usually put out there what changes we would like to do and there is usually a discussion around that. And there is also a discussion around whether	You know identify it, problem-solve it, initiate something, review, initiate, review and then come to an improvement for everybody.	during those conversations, we went over the previous meeting, got the answers for what we wanted to do. And then we move forward and spread it out a bit	everyone has their voice, in how they think it might work. we meet monthly just to discuss any clinical issues and the call answer rate was part of that.	meetings […] continuous feedback coming back how people were experiencing and then the management enabled to tweak

refine it or, if necessary, abandon it and start over (37).	[the CMHT manager], myself, [practice nurse] and [GP Liaison Nurse] that just met and troubleshooted and caught up.	they work or don't work and how people feel about them. We collected that data and we looked at it. [The medical director] normally pulls them all off (charts). […] He usually brings to our morning huddle or our MDT and discusses them.	Everybody noted anything that hadn't quite worked properly. We have weekly meetings. We bounce things around, so if things aren't going quite right, […]because it is fresh in your brain. You can go, I don't think that is quite right and I do think we need to change that slightly.	further and got more information. if something fell out of that and we thought okay, that needs to be tweaked well then would tweak it. graphs and a whole lot of things […] just make it easier for us to see. we met regularly to do that data analysis.	there are little huddles. So, it's shorter, like 10-, 15-minute meetings we have a twice a week.	things. the collaboration and communication between management and the actual team, and then getting back And then we consulted and analysed and figured out what that meant. With both groups, staff and patients.