LINKing Indigenous Diabetes Care

An Integrated Virtual Care Solution for Rural / Remote Communities

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Disclosures!

Darren Lau has no conflicts or competing interests to disclose.

Acknowledgments

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Background

First Nations have responded to the epidemic challenge of diabetes with a diversity of community-specific programs and initiatives.

In RADAR, Eurich et al. improved diabetes biomarkers by implementing an EMR-based registry intervention out of participating Community Health Centres (CHCs), using local Community Health Workers (CHWs) with care coordinator support.

Access to specialized services and demands on limited CHW time were still key barriers.

We hypothesized that such services could be provided on an equitable and culturally-safe basis, via virtual delivery.

Key Partner: Okaki Diabetes Virtual Care Clinic (ODVCC)

Okaki (Calgary, AB) is a health intelligence social enterprise. With 16+ years of experience developing EMR-based solutions for First Nations communities, Okaki has developed relationships which each of Alberta's 48 First Nations communities.

ODVCC offers:

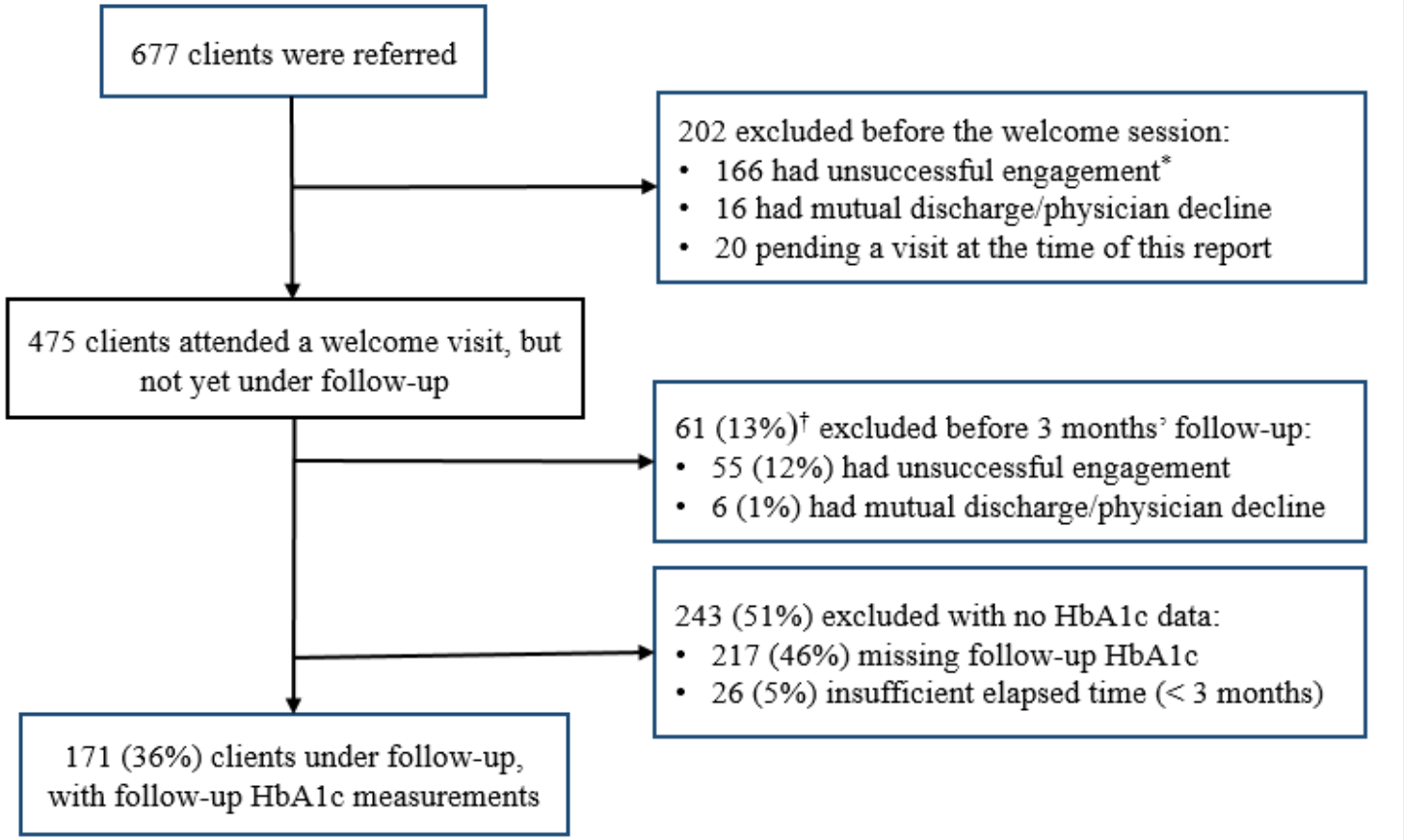
- **Community-specific care** – Program manager liaises with communities and their needs.
- **Care coordination** via RN/RD/CDE
- **Diabetes care** – endocrinology consultation and multidisciplinary team encounters with panel management / case conferencing
- **Community services** – Virtual group education, community health fairs
- **Virtual delivery** – Flexible approach able to use telehealth at CHC but mostly via telephone / text – "Virtual" can be decidedly "low tech".

Accountable to an Indigenous provider advisory committee with an Elder.

Evaluation Activities

Outcomes evaluation 1 – Characterize ODVCC clients and their diabetes outcomes before-and-after being seen in a virtual diabetes care program (completed).
Process evaluation – From the perspective of ODVCC providers, characterize the enablers and barriers of successful implementation of a virtual diabetes care program (completed).
Outcomes evaluation 2 – Quantify the effect of a virtual diabetes care program on outcomes of diabetes, comparing those seen in the program to similar individuals undergoing routine care elsewhere (on-going).
Economic evaluation – Quantify the incremental costs vs health benefits of ODVCC, projected over time (planning stages).

RESULTS - Clients



- Mean age 50 (SD 14), 62% female, >80% Indigenous
- Mean HbA1c 9.0% (SD 2.4%)
- UACR >= 3.00 mg/mmol in 40%
- Basal insulin use in 44%

Results – Diabetes Biomarkers

Parameter	Result		Mean Change (95% CI)	p-value
	Baseline	After 3 months		
HbA1c, %	8.9 ± 2.3	7.9 ± 1.9	**-1.0 (-0.7, -1.3)**	**<0.001**[†]
HBA1c > |0.5%| reduction[#]	--	74 (60%)		**< 0.001**[€]
SBP, mmHg	132 ± 18	129 ± 14	-3 (7, -14)	0.503[†]
DBP, mmHg	81 ± 15	76 ± 12	-5 (1, -10)	0.075[†]
BP <130/80 mmHg	8 (38%)	10 (48%)	--	0.564[€]
LDL-C, mmol/L	2.18 ± 1.10	1.83 ± 0.88	**-0.35 (-0.13, -0.57)**	**0.002**[†]
LDL-C <2.00	64 (55%)	78 (67%)	--	**0.035**[€]
UACR, mg/mmol	2.00 (1.00, 16.07)	1.59 (0.82, 10.00)	--	**0.020**[€]
UACR <3.00 mg/mmol	53 (57%)	56 (60%)	--	0.313[€]
≥3.00 & <30.00	24 (26%)	24 (26%)	--	
≥30.00 & <100.00	8 (8.5%)	5 (5%)	--	
≥100.00	8 (8.5%)	8 (9%)	--	
UACR > 30% reduction[¥]	--	21 (53%)	--	**<0.001**[€]

More people on key heart / stroke-protective medications – statins, ACEi/ARB – but not on newer agents with heart-kidney benefits (e.g.: semaglutide, SGLT2i).

Implementation Barriers and Facillitators (Provider Perspectives)

Theme	Facilitators (F)	Barriers (B)
Virtual delivery needs to be pragmatic, nimble, and resourceful	Flexible approach to accommodate communication preferences	Navigating IT issues and lack of in-person care
Relational care guides all clinic activities	Non-judgemental and supportive clinic operations Understanding community context facilitates flexible care	Workload constraints
Knowing, supporting, and being invited by communities is both intrinsically and reciprocally valuable	In-community events give back and establish reputation Reciprocal knowledge sharing improves care Community engagement tailors model of care	Dependent on community capacity and competing priorities
External agencies provide wayfinding and resourcing	OKAKI through technical expertise and community knowledge	Finding other medical specialties as allies/partners
Sustained funding promote growth and innovation	Multi-stream funding, including an alternative relationship plan	Funding uncertainty (time-limited grants) impacts clinic growth, staffing, and community relationships
A “really awesome team” drives the work	A multidisciplinary understanding of Indigenous health, self-reflection, autonomy, and motivation	Recruitment can be a challenge

“The number one essential thing to develop in a program in First Nation communities, [...] it's community engagement and building that trust.”

“I think the uncertainty with funding for this project is really hard for … my relationships with communities, because that's the natural question I get … who's funding this? Are you just going to be here until the funding is gone? … Should we even engage with you [...]?

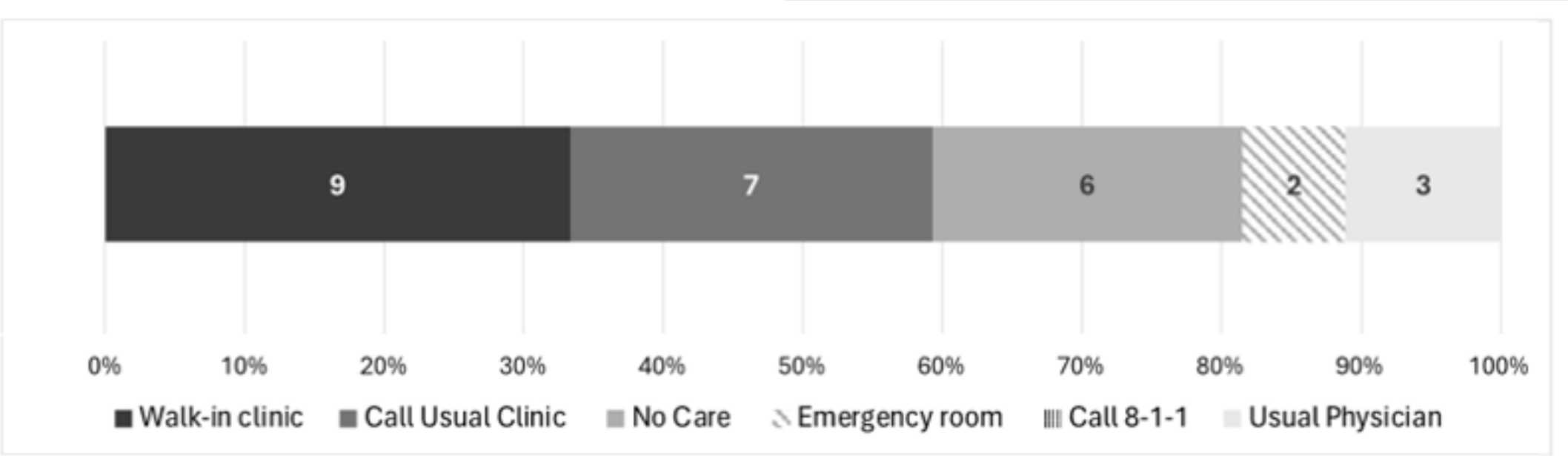
“We hit the mark when a community says, come into our community and deliver this care because you are meeting the needs of our community. Our patients feel safe with you. [...] you're doing exactly what we would do as community.”

Results – Participant Perspectives

In a small convenience sample of individuals, we administered a brief satisfaction survey.

Clients were universal in expressing positivity towards the experience of engaging with ODVCC.

Figure S3: Participant Alternatives to Virtual Diabetes Specialty Care ("What would be your alternative if virtual diabetes specialty care were unavailable?")



Limitations

Small clinic with limited number of providers interviewed.

More rigorous evaluation pending (i.e.: with control groups of unexposed patients), including data on whether virtual care has prevented ED visits.

Client / patient perspective relatively under-explored – Still working on incorporating clients / patients into governance.

Integration of other digital health technologies – remote BP monitoring, continuous glucose monitoring – a work in progress.

Integration with community-based digital health technologies – Provincial EMR integrations, etc. – on-going.

No cost-effectiveness results yet. However, RADAR was cost-effective ($8,000 / QALY). Whether cost-savings or cost-effective will depend on the extent to which the clinic has actually averted ED visits. In general, *improving access and equity is an aim that should be worthy of investment*.

Conclusions

A virtual clinic can provide a high-quality, relational, safe, and effective care experience for Indigenous individuals.

Having a pragmatic and nimble approach to virtual delivery; a small, independent, experienced, and committed team of individuals; being cognizant of and accommodating the unique needs of individuals and communities; and committing to engaging communities are key enablers of the clinic.

The LINK experience highlights the central importance of humans caring for each other and for communities, perhaps more than the actual virtual delivery technology, for improving diabetes care.

Thank-You

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