





Territory Kidney Care — health integration platform The smart decision support tool

CQI Collaborative Alice Springs 21st November 2023

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Background

System design and status

Facilitating workflow efficiencies

TKC development timeline

2015

Concept for integrated system of care supported by ACCHS and based on evidence, proposed to government and non-government funders by Menzies

2017

Stage 1 funding for feasibility study released, IT company contracted to build prototype

2018

Stage 2 funding for TKC build. MOU with 4 ACCHS to share data for system development. Legal agreement developed for data sharing between DoH and ACCHS.

2020

6 ACCHS join TKC. Final Stage 4 funding received, funding for 5 year evaluation received. Formal testing and validation of algorithms

2022

TKC Evaluation commenced TKC Steering Committee expanded to include more First Nation stakeholders.

2023

TKC links with MyHealth Record, portal from DoH patient EHR (Acacia) to TKC. CRG focusses on clinician requirements for decision support















2014

Analysis of CKD management conducted for 11 ACCHS by Menzies

2016

Philanthropic funder agrees to fund Menzies for development with endorsement from NTG

2017

Consultation re scope of system with stakeholders. Agreement for DoH to host system. Legal advice re consent model

2019

Implementation plans developed for all services. Roadshow and presentations commence. Stage 3 Funding received CRG and TWG inform rules and technical development of TKC

2021

2 more ACCHS join TKC. Successful funding applications enable 3 private GP practices and Implementation Officers in 4 ACCHS. More than 150 regular users of TKC

2022

DOH negotiate correspondence feed from TKC to national MyHealth Record. Registries (Hep B, RHD) express interest in linking with TKC. 11 out of 13 ACCHS partnering in TKC.

LEGEND

ACCHS: Aboriginal Community Controlled Health Service

CKD: Chronic Kidney Disease
DoH: Department of Health
GP: General Practitioner

RHD: Rheumatic Heart Disease Government

Hep B: Hepatitis B

CRG: Clinical Reference Group
EHR: Electronic Health Record
MOU: Memorandum of Understanding

Technical Working Group





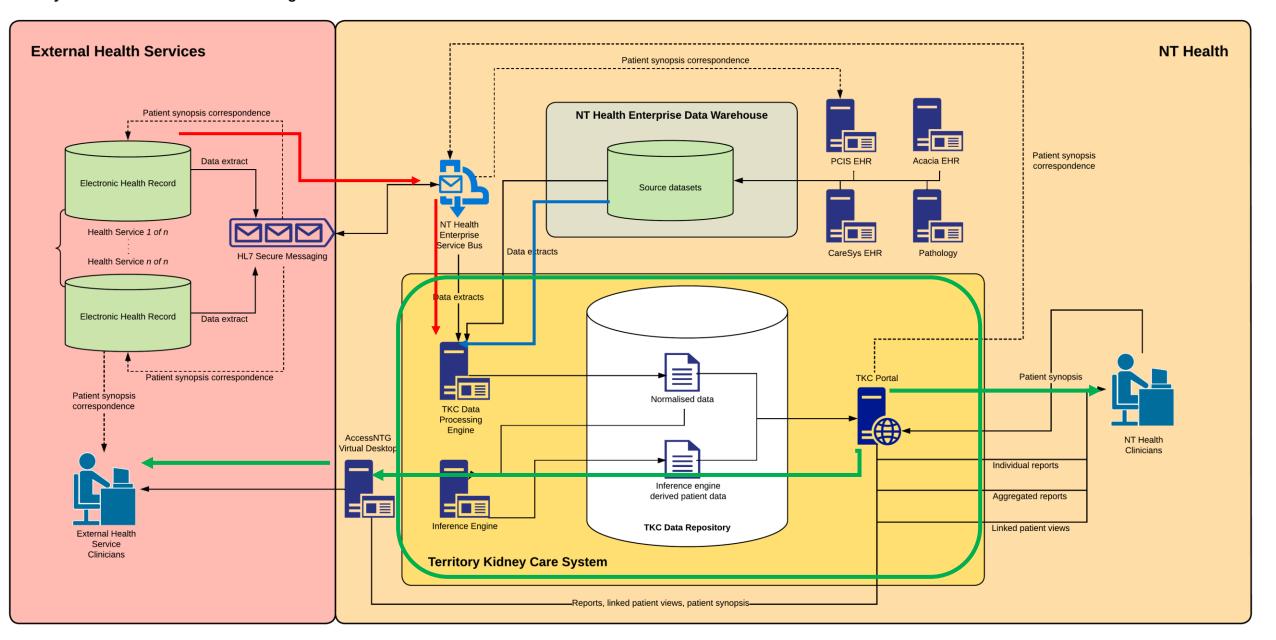
TWG:



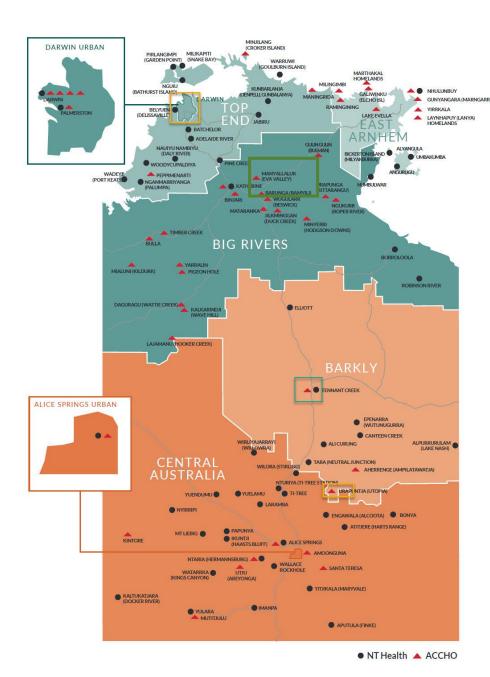




TKC System Architecture and Data Integration



NT HEALTH SERVICE LOCATIONS



Coverage of TKC includes

- 6 hospitals
- 56 government primary health services
- 12 ACCHS have signed Data Participation Agreements (10 have shared data)
- 3 Private GP practices in TE have signed Data Participation Agreements (currently in implementation phase with second service)

In consultation

Data Participation Agreement in place – have not commenced Implementation

What does TKC do?

- Integrates clinical information from disconnected health services across the continuum of care
- Closes the clinical information gap, improving the quality and safety of clinical care
- Collates and presents information in a readily accessible format
- Uses clinically defined algorithms to infer diagnosis and prognosis
- Risk stratifies, allowing care to be prioritised for those most at risk
- Supports evidence-based care, management and quality improvement processes
- Provides an accurate understanding of CKD (diagnosed/undiagnosed) and ESKD in the NT
- Assists PHC to identify resource needs and supports service planning and advocacy





How can TKC be used?

Clinical Safety

- Send synopsis reports to patient inbox in Communicare/PCIS so treating clinicians are seeing the same information at the same time for case conferencing
- Use TKC as data sharing platform for telehealth clinics
- Send synopsis reports to MyHealth record, which makes information available to interstate treating clinicians for travelling patients
- Use CSE function to identify patients that need immediate attention and access decision support
- Improves the safety and efficiency of medical evacuations after hours in remote areas



How can TKC be used?

Efficiency

- Efficiently categorise OPD waitlist urgency status (import waitlists from Acacia or Caresys, review synopsis report, update urgency status in Acacia)
- Import/export lists (OPD, outreach clinics etc) into TKC, use synopsis reports to stratify patient lists prior to clinics
- Access TKC directly from Acacia
- ACCHS clinicians access TKC via NTG portal down to 4 clicks!!!
- Use synopsis reports to share information between health services for new patients or referrals
- Synopsis reports can be individualised and edited decreases time for dictation, compiling discharge letters, referrals etc.
- Standardised operational reports providing real time lists of clinical cohorts and results
- Use search function to quickly create patient lists based on demographics, clinic, region or clinical condition





How can TKC be used?

CQI

- Linking and matching records across health services
- Tidying and correcting patient identifiers
- Improving clinical data accuracy coding, result correction and documentation
- Identifying gaps in required codes increased ICPC codes through University of Sydney (ICPC2)

Patient Education

 Use graphs, patient information videos in TKC to demonstrate to patient how they have been managing over time and provide education during clinics

Evaluation

Activity, resources and costs





Evaluation

Cost effective analysis – modelling intervention scenarios

Impact evaluation – aim to evaluate impact once fully implemented across NT

Costs of CKD at baseline

Analysis presented to TKC Steering Committee – manuscript being prepared for submission

Process Evaluation – baseline interviews, baseline characteristics

Currently being finalised

Formative evaluation – completed (SR, surveys, informed by CWG/TWG, formal testing of algorithms)

- Chen W, Abeyaratne A, Gorham G, George P, Karepalli V, Tran D, et al. Development and validation of algorithms to identify patients with chronic kidney disease and related chronic diseases across the Northern Territory, Australia. BMC Nephrol. 2022;23(1):320.
- Chen, W., O'Bryan, C. M., Gorham, G., Howard, K., Balasubramanya, B., Coffey, P., . . . Cass, A. Barriers and enablers to implementing and using clinical decision support systems for chronic diseases: a qualitative systematic review and meta-aggregation. Journal Implementation Science Communications. (2022). 3(1), 1-20.
- Chen W, Howard K, Gorham G, et al. Design, effectiveness, and economic outcomes of contemporary chronic disease clinical decision support systems: a systematic review and meta-analysis. *Journal of the American Medical Informatics Association* 2022: ocac110. doi:10.1093/jamia/ocac110





What do patients think of current systems?

- There is significant fear around kidney disease and dialysis, people may not go to clinic or tell their family if they are unwell for fear of being sent to town and unable to return Aboriginal co-researchers
- 'No-one told me I had kidney disease [early stage]. I didn't know that this could lead to dialysis.' –
 ACCHS Exec
- 'Kidney disease is a big problem, we should be screening children at school, from birth!' Aboriginal Kidney Health Mentor
- 'Why don't you know this, you got that computer there, I already told my story to that doctor!' Patient to nurse during outreach clinic
- 'That doctor doesn't know me' Patient to AHW during telehealth clinic in response to doctor searching screens for information





What do patients think about sharing their information?

- 'If someone could have told me about this earlier, I would have wanted to know' ACCHS board member and dialysis patient
- 'Information sharing is good.' Missed Dialysis workshop participant
- 'This is the is the first time I'm hearing of it (TKC) and I'm a director (at an ACCHS' Missed Dialysis workshop participant
- Feedback from Aboriginal Kidney Health Mentors during TKC demonstration:
 - 'This is the sort of communication we need for people out bush. This [graphs, infographics] is what we tell our mob, about their numbers and getting checking ups.'
 - 'Well it's about time. Something like this [TKC] should have been done ages ago.'
 - 'This [patient synopsis, graphs] is what we need to keep our patients on track.'
 - 'You can catch people earlier. Most people are crash landing in dialysis. They are getting younger and younger.'





Thank you