Western Desert Nganampa Walytja Palyantjaku Tjutaku Aboriginal Corporation Service Delivery Model
Final Service Delivery Model report

Dear Sarah

I am pleased to provide you with our final report on the Service Delivery Model of the Western Desert Nganampa Walytja Palyantjaku Tjutaku Aboriginal Corporation (WDNWPT).

This report, delivered as part of our pro-bono arrangements, is demonstration of EY’s commitment to partnering with Indigenous communities and organisations. It also reflects one example of how the commitments in our Reconciliation Action Plan are given substance and meaning.

This Service Delivery Model report documents the unique combination of services and approach to patient care and community engagement that has allowed for significant success particularly in terms of patient participation. The report also describes the system of services available in Central Australia which shows how distinctive the WDNWPT model is when compared with other approaches.

The WDNWPT Service Delivery Model demonstrates that the ‘hub and spoke’ model recommended in the 2011 Central Australian Renal Study provides the basis of an effective service delivery model, particularly when complemented by a range of treatment options and social support arrangements that provide a culturally appropriate model of care.

We have undertaken an initial cost effectiveness assessment in relation to the WDNWPT model and have observed that the benefits described and success achieved suggests that the investment presents good value for the outcomes achieved.

To truly understand the cost effectiveness of the WDNWPT model a formal cost/benefit analysis should be undertaken. Such an analysis will not only establish the evidence on which to make future investment decisions, it will also provide an opportunity to look at what features of the WDNWPT model are transferrable to drive improvement across the service system.

We have appreciated the opportunity to work with you and your team to deliver this report and look forward to future collaborations and to seeing the ‘WDNWPT Way’ continue to impact positively on the lives of Aboriginal people of the Western Desert.

Yours sincerely,

Jim Birch, AM
Government and Public Sector Lead, Oceania
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Executive Summary

The Western Desert Nganampa Walytja Palyantjaku Tjutaku Aboriginal Corporation (WDNWPT) is recognised as an innovative and professional Aboriginal community controlled health organisation. Its name - Nganampa Walytja Palyantjaku Tjutaku - means ‘Making all our families well’. Over more than a decade WDNWPT has grown and evolved to live up to its name.

Throughout this journey it has retained a focus on its mission, its people and the cultures of the communities it serves. This primary focus on service delivery has meant that while there have been valuable studies and reports into WDNWPT and renal services, the documentation of the service delivery model of WDNWPT has not occurred.

This report provides a summary of the WDNWPT service delivery model. The report provides a basis from which a further detailed cost/benefit study can occur.

In 2011 the Central Australian Renal Study (the Study) determined that a ‘hub and spoke’ model was the preferred renal services model for Central Australia, with Alice Springs as the ‘hub’ and remote communities as the ‘spokes’.

Our report demonstrates that the services and approach of WDNWPT are a critical part of the renal dialysis service network in Central Australia.

WDNWPT has developed a model consistent with both the model proposed and the treatment options for improved service delivery detailed in the Study.

As such WDNWPT presents an important benchmark for the continuing development of dialysis services in Central Australia.

Whilst this report does not provide an assessment of the cost effectiveness of the WDNWPT service, it demonstrates that the investments made are creating a sustainable model of care that deserves detailed analysis in order to determine the benefits generated by the model of care and the lessons that can be shared with other health services to improve patient outcomes and community wellbeing.

Our central estimates, using reasonable adjustments, indicate that the cost per treatment of the WDNWPT model is 1% less expensive than the Nationally Efficient Price (NEP) used by IHPA to determine funding for hospital based dialysis services. This is based on the following factors.

- Noting that the two measures are not directly comparable, adjustment factors were constructed for remoteness, to account for missing data on cost of medication and to adjust for FY13 utilisation of WDNWPT services below long term norms
- The WDNWPT cost per treatment is between 11%less expensive and 10%more expensive than the Nationally Efficient Price, depending on what adjustments were applied
- Based on applying all of these adjustment factors, to reach our central estimate, the WDNWPT cost is per treatment is 1%lower than the NEP
- Additionally, the WDNWPT delivery model provides a range of financial and nonfinancial benefits to government and other stakeholders that have not been costed or used in construction of cost comparisons as discussed below.

Benefits

This report highlights a series of benefits that derive from the WDNWPT service delivery model:

1. WDNWPT is delivering services that would otherwise be delivered directly by government and can do so without the same level of overheads as government delivery would necessitate
2. WDNWPT is delivering a range of services (social support, return to country visits) that directly support higher patient participation and thus better clinical outcomes.
3. By supporting people to remain on country, there is a greater prospect of children accessing education, adults contributing economically and communities remaining stable and safe.
4. WDNWPT provides the highest standards of clinical safety. This is derived directly from the sound relationships that exist between staff and patients, with a 1:2 staff to patient ratio rather than 1:4 ratio of equivalent government and private services.
Acknowledgements

EY would like to acknowledge the staff of WDNWPT for their contribution to this report through workshops, discussions and site visits. In particular, thanks to Sarah Brown and Helen Adams for their quick responses to questions and coordination of our visit to Alice Springs and Kintore.
Thanks also to Alan Cass and Gill Gorham from the Menzies School of Health for sharing their extensive experience of renal dialysis and Aboriginal health.
The community of Kintore provided a wonderful opportunity to see first-hand the work of WDNWPT. We deeply appreciated our visit to this community and the warm welcome we received during our short stay.
Introduction

Documenting the WDNWPT service delivery model presents a series of opportunities including:

- Highlighting what is distinct about the WDNWPT model
- Identifying potential benefits of the WDNWPT service delivery model
- Demonstrating the way in which WDNWPT complements or contrasts with other renal services.

Based on these opportunities this report seeks to establish an agreed description of the service delivery model and context of WDNWPT.

The documentation of the WDNWPT Service Delivery Model has been done in close co-operation with WDNWPT, with support from the Menzies School of Health and others working in the sector. The framework used to document the service model is shown below.

Figure 2: Service model framework

Inputs | Activities | Outputs | Outcomes
---|---|---|---
Governance | Return to country | Patient treatments | Health
Patients/Clients | Nurse supported dialysis in community | • in communities | Wellbeing
Resources | The ‘Purple truck’ | in Purple house | Social
Assets | The ‘Purple house’ | Self-care training | Cultural
Staffing | Worker/s | Primary health care and consultation | Social Support Services
Standards & Procedures | Social Enterprise | Allied Health Care |

The following five stage approach to developing the model was followed:

1. Agree structure and framework for report
2. Conduct research and interviews, including desktop research, interviews and visits
3. Document delivery model in draft report
4. Review of the draft report by WDNWPT
5. Review and finalise report.

Once the service model had been defined, it was assessed for alignment against the “Service delivery principles for programs and services for Indigenous Australians” from the COAG National Indigenous Reform Agreement (see page 22).

History

Western Desert Nganampa Walytja Palyantjaku Tjutaku Aboriginal Corporation (WDNWPT) is an Aboriginal community controlled health organisation, governed by an all Indigenous Board, elected by its members.

WDNWPT started in the 1990s as a reaction to the need for Pintupi/Luritja people to leave their families, country and homes to seek treatment for End Stage Renal Failure in Alice Springs. Taken to Alice Springs for treatment Pintupi and Luritja people suffered great loneliness and hardship. Communities feared for their future wellbeing if senior Pintupi were not there to pass on their cultural knowledge.

In November 2000, with the help of Papunya
Tula Artists and Sothebys, people from Kintore and Kiwirrkurra painted pictures for an auction at the Art Gallery of NSW. These were auctioned by Sothebys, along with other donated works of art and raised over one million dollars for the Western Desert Dialysis Appeal. In 2003 WDNWPT was incorporated as Western Desert Nganampa Walytja Palyantjaku Tjutaku. The name means ‘Making all our families well’ and recognises that people must be able to stay on country, to look after and be looked after by their families.

In the thirteen years since the art auction appeal, WDNWPT has expanded its scope of services to become integral to the health services for Aboriginal people and communities in the Western Desert. The organisation offers a range of services including:

- Dialysis at clinics located in Alice Springs, Kintore, Ntaria, Yuendumu, Lajamanu and Warburton
- Safe travel for patients back to their communities to attend funerals and community events
- Social support e.g. access to “Malpas” (friends) who provide support with accommodation and Centrelink payments, access to transport and emergency relief, social activities such as bush picnics and hospital visitation
- Advocacy
- Wellbeing activities such as podiatry, bush medicine preparation
- Health promotion and education both for patients and the communities where remote dialysis clinics are located
- Primary health care, including the access to a medical doctor at the Alice Springs clinic and chronic disease management and allied health services.

**Background on kidney disease**

Chronic kidney disease (CKD) is a serious and increasingly common health problem in Australia. For an individual diagnosed with CKD, and particularly in cases where it has progressed to end-stage kidney disease (ESKD), the health outcomes are poor and quality of life is severely diminished. There is significant disparity in the incidence levels of ESKD between Indigenous and non-Indigenous people. Estimations provided by the Australian Institute of Health and Welfare based on the period 2003-2007 are that Indigenous Australians:

- Accounted for 8% of all new cases of ESKD
- Developed ESKD at more than 6 times the rate of non-Indigenous Australians
- Were more likely to develop ESKD in all age groups

For Indigenous Australians living in remote or very remote communities the burden of ESKD is particularly high, with incidence levels far in excess of the national average, as illustrated below. (Recent ABS data shows no change in incidence levels since 2001.)

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![Figure 1: New cases of treated ESKD by Indigenous status and geographical location, 2005-2008](http://aihw.gov.au/ckd/indigenous-people/#q02)

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For people living in remote communities, the burden of ESKD not only affects the patient’s quality of life but it extends into the communities in which they live.

A diagnosis of ESKD for a person living in a remote area can mean having to leave their home, family, community, culture and livelihood in order to access the dialysis they need to stay alive. For the family and community they leave behind, the consequences can be far reaching. Not only do they have to cope with the confronting reality of a member of their family facing a terminal illness, but their stress may be compounded with the breakdown of their family unit, loss of income and financial uncertainty. For the community the loss of a key member of the community creates a profound challenge to maintaining their culture and way of life.

“it’s better for me to have dialysis at Yuendumu than Alice. Just because my family visits me and stays with me close up; and Rex always stays with me. If I go back to Yuendumu … all the rest of my kids come with me. I get lots of help at Yuendumu, I know people there, I have lunch – we get bread and kangaroo tali- kardiya [whitefella] mob bring it. I can walk around and talk to other yapa [Aboriginal people/walpiri] when I’m there.”

WDNWPT client.

“It is very important for people to go back home. People with no Purple House help risk their lives to do it and have to be air-evacuated to Alice.”

Hostel Manager
Operating Context

Community

Remote and regional Australia is home to hundreds of Indigenous communities characterised by rapidly changing lifestyles, relative poverty and disadvantage. Despite these challenges, these communities are sustained through strong adherence to culture and values. They comprise many parts: Family values (walytja), Country or land (ngurra) and Dreaming or their culture’s history (tjukurrpa). The people themselves carry this ethos, teaching them and strengthening their way of life for their children and their community’s future.

The issue

Sadly, in Australia, the highest rates of chronic and end-stage kidney disease occur within these communities. Of the top four worst affected Aboriginal and Torres Strait Islander regions nationally, Warburton and Apatula (third and fourth) straddle the WDNWPT area. With limited and poor quality infrastructure, the people have extremely poor health, low levels of formal education and little or no employment.

Although not all Indigenous groups are affected equally by ESKD, Northern Territory rates are now some thirty times higher than the national figure, accelerating over the past few decades in conjunction with the co-existing conditions of type-2 diabetes and ischaemic heart disease.

WDNWPT serves and represents Indigenous people on dialysis from the cross-border Western Desert region of Central Australia (NT/WA). The Pintupi/Luritja people who live in this remote region, endure the highest rates of kidney failure in Australia. Until recently, those suffering from kidney disease have had no choice but to move hundreds of kilometres away for treatment at the regional Renal Dialysis Unit in Alice Springs.

Dislocation

An investigation undertaken by WDNWPT (Rivalland P, 2006) reviewed the historical treatment approach for Indigenous people from remote communities. Features of the approach had been: poor communication during clinical consultations, a lack of preparedness for dialysis (leading to rapid deterioration of their condition), excessive hospitalisation due to their condition and poor attendance at routine dialysis. In the end this severely reduced the patient’s survival time and quality of life. All of these effects are exaggerated by an impoverished quality of life and the effects of ‘dislocation’ (shifting location, leaving family and community).

Going to Alice Springs from remote communities for dialysis is difficult for the individual. People tend to feel: shame, loneliness, despondency and depression, which affects individuals, families and the community they are a part of. The impact of dislocation on the health of dialysis patients, and upon their families and community, is so profoundly negative — and historically not addressed effectively by mainstream services — that WDNWPT was established support Pintupi/Luritja people who had to leave their families, country and homes to seek treatment for ESRF in Alice Springs.
Description of service system for end stage renal failure

WDNWPT is one of a number of health providers servicing the needs of end stage renal care patients from remote communities in Central Australia. A brief summary of these service providers, and the nature of the clinical and social support services they provide is outlined below.

Renal Dialysis Unit at Flynn Drive

The Flynn Drive Renal Unit is a government funded renal clinic which is attached to the Alice Springs Community Centre. The unit is open 7.00am to 9.30pm Monday through Saturdays, and nurses are available on-call 24 hours a day. The unit offers a range of renal services including:

- Maintenance dialysis
- Peritoneal dialysis coordination
- Home haemodialysis coordination
- Client haemodialysis training
- Pre and post transplant care

The clinic encompasses 26 stations and provides a range of renal technologies. The unit caters primarily to an indigenous clientele (98%), many of whom have relocated to Alice Springs from remote areas of Central Australia. This facility is serviced by a large team including:

Clinicians
- 3 Nephrologists
- Advanced Trainee Renal Registrars
- 33 nurses
- 7 patient care assistants

Social Support
- 1 social worker
- 1 dietician
- 2 administration officers

Alice Springs Hospital

The Alice Springs Hospital is a 189 bed specialist teaching hospital run by NT Health. The renal care provided at the hospital is by way of:

- Medical ward: caters for acute admissions, renal investigations and surgery
- Dialysis station: provides acute dialysis via an eight chair facility managed by the Flynn Drive Renal Unit

The hospital has a number of Aboriginal Liaison Officers on staff who provide a range of culturally appropriate support services including interpreting, family meetings and assistance with Centrelink forms, banking and complaints.

Gap Road Nephrocare Dialysis Unit (Fresenius – Private Health Clinic)

Opened in 2010, this private dialysis clinic operated by Fresenius is a purpose built facility offering 20 HD stations with the option of Haemodialifiltration (HD) and High Flux Haemodialysis.

This clinic regularly services Indigenous clientele from remote communities. In addition Gap Road serves inmates requiring dialysis in Alice Springs jail.
NT Mobile Dialysis Bus

In August 2010, the NT Government began operation of a mobile dialysis bus service, enabling Indigenous dialysis patients, living in urban areas because of their dialysis needs, to travel home to their communities to attend cultural or community activities. This service was initially funded for a two year period by the Commonwealth Department of Health, and is now managed by the Central Australian Hospital Network.

The bus has been purpose built and is equipped with two dialysis chairs serviced by trained dialysis nurses. The bus can treat up to four patients a day. In its first two years of operations, the bus travelled 30,000km on 20 different trips, providing 200 dialysis treatments. However, one limitation is that the bus does not offer disabled access for patients.

In 2012, the mobile dialysis bus was trialled in the Anangu Pitjantjatjara Yankunytjatjara Lands (APY Lands). Following the success of the trial, Country Health South Australia has committed to establishing its own mobile dialysis bus.

Kimberley Satellite Dialysis Centre - Western Australia

While it is beyond the Central Australian renal care service system, the Kimberley Satellite Dialysis Centre (KAMSC) provides a model worth noting in this report, particularly because of the common features shared by KAMSC and WDNWPT.

KAMSC opened on 21 October 2002. The Commonwealth government funded KAMSC to provide transport, Aboriginal health worker support and accommodation for many dialysis patients across the Kimberly region.

KAMSC is able to perform both HD and PD treatment. HD treatment provided at the centre and PD treatment performed in homes or in communities where possible. Attendance for planned HD treatments was 95.7% during a 5 year study. With the number of patients withdrawing from their treatment being less than 2% this compared very well to an over 5% withdrawal rate and attendance of less than 90% in the Northern Territory.

During their treatment, KAMSC patients showed a statistically significant improvement to crude mortality rates. After adjusting for sex, other conditions and late referrals there was no significant difference between indigenous Australians in the Kimberly region and that of non-indigenous Australians nationally.

These statistical improvements are due to a number of factors: this unit is a satellite group and provides care for homes and communities, this provides a support network and is not solely a hospital, the centre uses local Aboriginal health workers to deliver care and collect patients cementing itself as a part of the remote community. The archetype shown in centre is very closely aligned to the goals sought out by WDNWPT.
Service delivery model

Having established the history and context of WDNWPT this section of the report describes the services WDNWPT delivers and details how they combine to create a model of care that is proving to be effective and appropriate for its patients and its context.

Our review also identified features of the way in which dialysis is delivered that are as important as the services themselves in contributing to the high levels of compliance and resulting positive outcomes for patients.

The summary of the service delivery model (shown on the next page) shows how the inputs, activities and outputs – the tangible work of WDNWPT – all contribute to the ultimate outcomes that motivated the establishment of WDNWPT.

Having documented the model, a further more detailed assessment of benefits (described here as outcomes) can be balanced against an assessment of the cost of service delivery using this agreed model of service delivery.

In the Central Australian Renal Study it was estimated that by 2014 there would be 286 end stage renal patients in the region. Based on the figures below this means WDNWPT has been providing dialysis for a quarter of end stage renal patients in Central Australia, making it a significant supplement to the existing public health system.

In the first 6 months of 2013:

- 1355 HD treatments were provided for 69 patients in Alice Springs, Kintore, Yuendumu and Ntaria.
- Social support services delivered 2450 client contacts to assist with social support and advocacy.
- 73 dialysis patients travelled and stayed safely on one or more trips home to country. 119 episodes of travel home were completed.
- The Purple Truck provided 23 occasions of HD across multiple sites despite being off-road while being fitted with an additional chair. In the last 6 months of 2012 the Purple Truck provided 56 HD in the communities of Docker River, Ernabella, Mutitjulu, Kiwirrkurra, Haast’s Bluff and Warburton.
- Lajamanu and Warburton now have their own on-site HD chairs.

Key elements of the service model

Community control - WDNWPT was established as a direct result of community action and continues to operate under the direction of a community-controlled Board.

Based on communities not borders - the service is providing culturally appropriate, locally based services for those with ESRF in connected communities at the intersection of SA, WA and NT. Communities are reaching out to other communities to support them developing their own locally based renal dialysis.

Linked to country - the inherent individual and community links to country and the place of older people in maintaining cultural integrity in community both drives and is supported by the model.

Cultural respect - the service model, set up and delivery is designed within a culturally respectful framework, which recognises that illness and the experience of illness is not separate from social, emotional and cultural wellbeing.

Wrap around - the service addresses not just the clinical requirements of Aboriginal patients but also the cultural and practical issues surrounding ESRF and provides comprehensive assistance to improve compliance with and overall outcomes from dialysis.

Person focused - the individual requirements of clients direct the way in which care and support is provided, where it is provided and what is provided.

Clinical safety - clinical leadership is provided through renal specialists based in Alice Springs and qualified dialysis nurses are employed to provide dialysis.

Accessibility - the use of the Purple Truck to increase access to care on community and the establishment of renal chairs in several communities has increased access to appropriate care in the preferred environment.

Equity - Underpinning the model is the belief that Aboriginal people of the Central Desert should have equitable access to care.
Service Delivery Model

**Inputs**
- Corporate Governance
  - Community board
- Clinical Governance
  - Alice Springs nephrologists
- Funds
  - Papunya Tula Gallery
  - Australian Government
  - NT Government
  - Donations
  - Sale of goods
- Resources
  - Consumables
  - Dialysis machines
  - Purple Truck
- Staff
  - Dialysis
  - Social support
  - Management
  - Community
  - Clients and family
  - - Alice Springs

**Activities**
- Board meetings
- Gallery Funds Investment
- Who goes home
- Renal dialysis
  - Alice Springs; Kintore; Yuendumu; Ntaria; Lajamanu; Warburton; Purple truck
  - Social support & advocacy
  - Bush medicine
  - Social and cultural activities
  - Clothing/Blankets
  - Housing assistance
  - Transport
- Return to country
  - Transport assistance
  - Negotiations with family
  - Accommodation assistance

**Outputs**
- Annual number of sessions
  - Alice Springs
    - 590
  - Ntaria
    - 590
  - Yuendumu
    - 590
  - Kintore
    - 900
  - Lajamanu
    - 900
  - Warburton
    - 900
  - Purple Truck
    - 150
  - Social Support
    - 5000
- Return to Country
  - No. People 80
  - No. Trips Home 200
- GP Clinic
  - 515
- Allied Health
  - 295

**Outcomes**
- People able to stay on country
  - Individual’s compliance with treatment increases
  - Improved quality of life
  - Community access to elders
  - Contribution to international art world by recognised artists
  - Family coherence maintained
  - Decreased cost impost on Alice Springs social services
- People able to return to country
  - Improved quality of life
  - Increased compliance with treatment
  - Cultural obligations met
  - Families connected
  - Community stability strengthened
- People able to stay safer in Alice Springs
  - Increased treatment compliance
  - Reduced treatment cost (fewer ED and hospital admissions)
- Government outcomes
  - Service being provided in Central Australian desert lands
  - Tri-state service provided
  - Model established that can be replicated in other settings
WDNWPT provides a wrap-around service that currently provides a range of support to those with ESRF to enable them to stay home in community, return home to community for brief periods, or to remain in Alice Springs in a safer and more supported clinical, social and economic context.

These services are:
- Return to country for visits
- Alice Springs dialysis through the Purple House
- Dialysis in community at Kintore, Yuendumu, Ntaria, Lajamanu and Warburton through permanent chairs
- Dialysis in other communities through the Purple Truck
- Social support and advocacy

One of the stated strengths of the model is that it recognises the complex cultural, familial, personal and social network that makes up the day to day lives of Aboriginal patients with ESRF. Addressing the clinical requirement for dialysis in isolation, without addressing issues arising from these other factors, can leave patients at risk of non-compliance with treatment and exposure to additional health risks that severely limit their chances of survival.

**Return to country (visits)**

Returning to country is culturally and personally significant for many of those who have been forced to live in Alice Springs so that they can receive dialysis.

Alice Springs is not their own country and there is a sense of shame associated with living without permission on someone else's country. This sense of dislocation and shame contributes to insecure living conditions within Alice Springs and increased vulnerability to poor lifestyle and exploitation.

Being able to go home as often as possible helps individuals and their families to re-connect with country and strengthen their sense of self. It also allows them to fulfil culturally critical responsibilities such as attendance at funerals and other key community events.

This element of the WDNWPT service model is profoundly important in that it goes beyond addressing the purely clinical needs of the patients by building in an essentially spiritual and socially restorative function.

WDNWPT provides assistance to people to return to country for breaks, holidays, funerals or to attend other significant community events by:
- Providing access to remote dialysis through on-site dialysis or the Purple Truck
- Assistance with arrangements to travel to country
- Facilitating accommodation negotiations and ensuring patients have adequate food and water while staying on country
- Advocating for leave of absence from Alice Springs renal services for short term visits
- Renal dialysis services delivered through WDNWPT are clinically governed by nephrologists based in the Flynn Drive Renal Dialysis Unit in Alice Springs and provided by qualified and experience renal dialysis nurses. This is the case in Alice Springs and on country.

**Dialysis in Alice Springs**

The Purple House in Alice Springs has 2 chairs and provides dialysis to:
- Those who are culturally or emotionally unable to attend dialysis in the renal units in Alice Springs
- Those who have been receiving dialysis on country and are required to come to Alice Springs for personal or medical reasons.

The dialysis room in the Purple House has been set up to minimise the sense of being in a clinical environment – patients are encouraged to bring DVDs to watch, family members are encouraged to stay and meals provided are culturally suitable.

Because of the small size of the service and the focus on meeting individual needs, the Purple House has achieved success with previously non-compliant patients and those with challenging behaviours who would otherwise no longer be able to receive dialysis treatment elsewhere in Alice Springs, filling an important niche in the Alice Springs ESRF service system.
The report team was informed by external providers that the Purple House renal dialysis service is now a recognised component within the Alice Springs ESRF service system and that cessation of the service would increase demand on other services beyond their capacity to respond.

**Dialysis on Country**

The report team was advised that providing dialysis on country addresses far more than the provision of a service that allows people to stay close to home and family. Familial ties often demand that when an older family member relocates to Alice Springs, family members will also relocate. These family members may not find work, children may become intermittent school attenders and there may be problems finding adequate accommodation. Not only does this put additional pressure on the local service system but it also impacts negatively on the health and wellbeing of family members. Returning an individual to their own country on a permanent or long term basis returns the family members as well and brings stability back into the family functioning.

Locations of permanent chairs for HD and clients serviced over a 6 month period are described below:

- Kintore - 15 clients
- Yuendumu - 11 clients
- Ntaria - 8 clients
- Lajamanu - 6 clients
- Warburton - 6 clients

For all patients being transferred to WDNWPT care a ‘Going home’ checklist is completed including gaining approval from the Nephrologist. The services are staffed by qualified renal dialysis nurses and provide HD six days per week.

Dialysis recipients may be those living long term in community (as recommended by the relevant community decision-makers) or those visiting community and requiring dialysis to allow for a longer visit.

“The team was privileged to be allowed to observe two artists as they worked in Kintore. These artists had been allowed to remain permanently in Kintore on HD provided by WDNWPT which allowed them to continue their valued contribution to the community as respected elders. What was also clear was that by living and working in an environment that was culturally and spiritually nurturing, these artists could continue to contribute to the international world of art and culture.”

**EY team member**

**The Purple Truck**

The Purple Truck is a mobile unit which provides time limited access to HD in multiple locations. It now runs two chairs and provides mobile haemodialysis (HD) to remote communities to both help manage demand and enable longer visits home for people requiring HD.

In the last six months of 2012 the Purple Truck provided mobile HD in the communities of:

- Warburton, WA x2
- Mutitjulu x2
- Docker River x1
- Kiwirrkurra, WA x2
- Papunya x1
- Yuendumu x1
- Ernabella (Pukatja) x1

In total the truck has travelled 21,800kms.

In addition to its usual visits to communities without access to permanent HD, the Purple Truck has the capacity to flex schedules and provide additional HD access in periods of increased demand in communities. This may be in response to large community events or to service issues in communities.

The Purple Truck also provides important health promotion services. This includes educating young people about how to avoid ESRF and demystifying the dialysis process.
Social Support and Advocacy

As mentioned earlier, people from outlying communities who relocate to Alice Springs are, in a sense, dispossessed and often do not have easy entry into local social and family networks. Without additional support they may quickly become confused, ill, miss appointments and be labelled non-compliant with treatment.

A broad range of social supports are provided by WDNWPT to individuals who require assistance with access to health care, safe accommodation, to transport, social and cultural interaction, clothing, food and with other social and cultural requirements.

This support is provided, in the main, through the Purple House in Alice Springs. The building and garden (complete with campfire, bush medicine plants and chooks) are set up as welcoming and culturally appropriate places for people to visit and socialise as well as receive social support services.

Social support examples include:
- Provision of new blankets each winter
- Provision of clothing
- Support with shopping and accessing services
- Bush trips and hunting
- Hosting of BBQs providing bush tucker
- Manufacturing and providing free bush medicine
- Providing a culturally safe place in the Purple House for people to meet
- Transport to and from appointments

Advocacy activities include:
- Advocating for clients with Centrelink and accommodation services
- Advocating for individuals to receive culturally appropriate care in renal dialysis clinics in Alice Springs
- Advocating for those wishing to return home for short or extended periods

“It’s refreshing to work with an organisation that is directed by the people it services. It keeps the focus on what the core business is and doesn’t get caught up in other agendas. Basically to work with WDNWPT you have to want to walk the walk not just talk the talk.”

Renal Dialysis Nurse
Patient Journey: WDNWPT role in the service system

The service system described in the previous pages demonstrates the interconnected nature of care and treatment required for Indigenous patients in central Australia. WDNWPT has established itself not only as a service provider, but its multiple services provide the holistic care and support that has generated consistently high treatment compliance outcomes.

As detailed in the Central Australian Renal Study, the need for an organisation like WDNWPT was evident to combat a number of rising issues such as:

- Increasing numbers of Indigenous people in Central Australia requiring renal replacement therapy, provided predominantly in Alice Springs
- Recognition of the lack of culturally appropriate service options and, in particular, service options allowing treatment as close to home as possible
- Recognition that treatment may require relocation and, where it does, support needs to be provided for patients and families
- Concerns about the negative impact of a lack of culturally appropriate service options on treatment uptake

In response to these issues, WDNWPT has developed the ‘WDNWPT Way’ of doing things. This recognises that WDNWPT goes beyond the basic function of a renal service to provide an holistic health and wellbeing service. This commitment informs the methodology behind WDNWPT and the services it delivers.

The WDNWPT Way is reflected in both the way it delivers services and the nature of the services it offers. For example, WDNWPT:

- Has an adaptable and flexible service delivery approach: Unstable patients with complex needs are difficult to dialyse and tend to do better at the Purple House (Alice Springs) than the hospital. WDNWPT is able to adapt and cater to the community and individual and provides the flexibility that a mainstream service cannot. The purple house is the only dialysis centre where people are there on non-dialysis days - it’s the hub for people away from country.
- Provides staff and social support: The staff working at these locations go much further than that of other renal services. Staffed not only with doctors and experienced dialysis nurses, WDNWPT also employs trainees, patient support workers and social support workers. (35% are local Aboriginal employees who count for 25% of wage expenditure.) A broad range of social support is provided to individuals who require assistance with access to safe accommodation, transport, social and cultural interaction, clothing, food and with other social and cultural requirements.
- Advocates for client wellbeing: WDNWPT advocates for individuals to receive culturally appropriate care in other renal dialysis clinics in Alice Springs and advocates for those wishing to return home for short or extended periods.
- Recognises the importance of mobility and delivers WDNWPT services across vast distances: WDNWPT has expanded across Tanami, Yuendumu, Darwin, Kintore, Lajamanu, Ntaria and Warburton. Establishment of a facility in Kiwirrkurra is in progress. The mobility of the Purple Truck allows for a travelling dialysis unit to deliver dialysis in more communities, providing complete flexibility that is responsive to community needs.
- Includes a focus on wellbeing, health promotion and education: WDNWPT conducts a wellbeing program which supplies bush tucker/medicine to patients, health promotion and catering services with the aim of maintaining cultural knowledge.
- Is also a Primary Health Care provider: Assist patients by booking primary health care services and assist in paying for services. For example, acupuncture, podiatry, exercise physiology, dental and women’s health.

This summary demonstrates how WDNWPT has addressed a significant need for an integrated and culturally appropriate service offering as identified in the Central Australian Renal Study.
The focus of this report has, to this point, been on the services that make up the renal dialysis system in Central Australia. These component parts only have relevance because of the patients they serve. The patient journey below highlights how patients move between services and how critical WDNWPT is to continuity of care for patients.

1. Patient begins in community surrounded by the things that are available on their own country and not easy to access off country.
2. Patients with precursor conditions receive regular checks in community. If the patient is diagnosed with kidney failure, they will be referred to a nephrologist in Alice Springs.
3. In Alice Springs patients receive support from a dietician/social worker/PD nurse/CKD nurse. The PD/CKD nurses will advise on treatments.
4. Patients receive assistance with finding accommodation and support from a WDNWPT social support worker.
5. Despite this they often feel dislocated from family & community.
6. Patients go to hospital for the initial dialysis treatment. (Can take 6 – 8 weeks for a patient to be stable.)
7. After hospital treatment patients find accommodation in town camps, hostels, nursing homes etc. (Shortage of public housing properties is a challenge for kidney patients to find secure accommodation.)
8. Receive ongoing treatment in Alice Springs via: Alice Springs Purple House; Flynn Drive Renal Clinic (NT Health); Gap Road Nephrocare Dialysis Unit (Fresenius/NT Health); Renal ward in Alice Springs Hospital
9. Return to country option a) Reverse respite: WDNWPT Board decide on which permanent patients to return to the community. If chosen they are provided with transport by the Purple House. Receive dialysis in community/home/purple truck.
10. Return to country option: Home on Peritoneal dialysis
11. Return to country option: Self-care Haemodialysis
12. Return to country option: Home with dialysis to finish up (with co-morbidity) - WDNWPT assists with funeral arrangements, travel etc.
13. Return to country option: Home without dialysis to finish up
Service Delivery Costs

To provide a sustainable service WDNWPT needs a clear understanding of its service delivery costs. It will also need to demonstrate value for money in order to attract future investment. This section of the report makes some initial observations about WDNWPT’s treatment costs and provides a comparison with the Nationally Efficient Price determination. Scenarios based on adjustment factors have been constructed to compensate for the extent to which these two indices are not directly comparable.

Detailed cost summaries are included in Appendix A. Appendix B details the assumptions which specify how each of these estimates was reached. Please also refer to the Appendix C for the reliances and limitations associated with the scenarios and estimates.

Cost per treatment calculation

An indicative cost per treatment for WDNWPT has been calculated based on information sourced from FY13 actuals as well as estimated based on historic data. Judgement from WDNWPT business managers was used in interpreting past data and to form assumptions which were required due to gaps in available data.

The costing is designed to represent actual FY13 costs from the following WDNWPT sites:

- Alice Springs which has an ASGRCA classification of ‘Remote’
- Kintore, Yuendumu and Hermannsburg which have an ASGRCA classification of ‘Very Remote’.

The indicative cost per treatment (see Appendix A, Table 1) is therefore designed to be reflective of the cost that WDNWPT bears in providing dialysis services in remote and very remote areas. The following costs were calculated;

- The actual cost per treatment was $670.86 considering both costs borne by WDNWPT and other dialysis costs borne by others (e.g. NT Govt). This cost was reached by considering the actual number of treatments delivered in FY13.
- An adjusted cost of $611.07 was also calculated, which represents a cost per treatment benchmark that could have been reached had utilisation of services been higher (in this case moving from 84% to 95%).

Several factors mean that the adjusted cost is likely to be more representative of a long term running cost of WDNWPT operations;

- The actual number of dialysis sessions in FY13 was lower than is anticipated over the longer term to due to time spent investing in new sites and there is a tendency for newer sites to have lower overall utilisation as they become established.
- There is a trend of growing incidence of end stage renal failure in many areas of Australia including Central Australia. Unless there is specific government intervention, this will mean WDNWPT services are utilised well beyond current levels.
- Attendance rates in WDNWPT are very high, and have historically been over 98% This means that if demand is present within the communities, WDNWPT have the potential to reach a very high utilisation rate.

Of the actual total cost per treatment, in FY13, only $579.38 was paid by WDNWPT with the remainder representing the cost of consumables and equipment committed by the NT government.

\[\text{To make this adjustment, the following steps were taken to derive an adjustment factor;}\]

- Considering actual number of treatments by WDNWPT in FY13 (2625)
- Calculate a theoretical maximum by considering shifts per day, days per week, weeks per year and patients per shift (calculation shown in Table 3 in Appendix A)
- Categorise costs as variable or fixed (split of expenses shown in Table 2 in Appendix A)
- Adjust number of treatments to 95% level and reduce fix costs proportionally (calculation shown in Table 2 in Appendix A)

Note that whilst employment costs could be considered variable, these are unlikely to vary (i.e. more FTE required) unless a significant increase in treatment numbers is needed (beyond 100% utilization of current treatment capacity).
In calculating the cost per treatment, all costs incurred by WDNWPT during FY13 were considered and a determination was made as to whether they related to:

- Provision of dialysis services at the sites mentioned above (included in unit price)
- Provision of dialysis services at other sites or provision of non-dialysis services (not included in unit price)
- Organisational governance and funding related activity (not included in unit price)

Specifically, costs for patient medication are excluded from the cost per treatment estimate due to a lack of reliable data on these costs. However, scenarios were generated to show what these costs could be and these have been used in comparisons and discussion below. All of the numbers used in the costing exclude GST as health is a GST free service.

National Efficient Price for dialysis

The Independent Hospital Pricing Authority (IHPA) publishes an annual National Efficient Price (NEP) Determination for public hospital services for each coming financial year. The NEP underpins Activity Based Funding (ABF) across Australia for Commonwealth funded public hospital services.

The NEP has two key purposes. The first is to determine the amount of Commonwealth Government funding for public hospital services, and the second is to provide a price signal or benchmark about the efficient cost of providing public hospital services.

In 2013/14 the NEP was determined as $4,993 per National Weighted Activity Unit 2013-2014. Particular types of treatments are then expressed as numbers of National Weighted Activity Units (NWAU). These are then applied to the NEP per NWAU to determine an NEP for different types of treatments. Table 1 demonstrates this calculation and shows an NEP for different forms of dialysis expressed in 2013/14 dollars. The final column shows a version of the NEP backdated to 2012/13 dollars using IHPA indexation for ease of comparison with WDNWPT 2012/13 costs.

<table>
<thead>
<tr>
<th>Description Type</th>
<th>NWAU</th>
<th>NEP per NWAU (2013/14)</th>
<th>Dialysis NEP (2013/14)</th>
<th>Dialysis NEP (2012/13)*</th>
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<td>Renal Dialysis - Hospital Delivered</td>
<td>Non Indigenous</td>
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<td>$4,993</td>
<td>$558.22</td>
</tr>
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<td>Renal Dialysis - Haemodialysis</td>
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<td>$4,993</td>
<td>$558.22</td>
</tr>
<tr>
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<td>$558.22</td>
</tr>
<tr>
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<td>Indigenous</td>
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<tr>
<td>Renal Dialysis - Peritoneal Dialysis - Home Delivered</td>
<td>Indigenous</td>
<td>0.1163</td>
<td>$4,993</td>
<td>$580.55</td>
</tr>
</tbody>
</table>

*IHPA determines the NEP for public hospital services through the analysis of data on actual activity and costs in public hospitals. Costing information used to determine the NEP is drawn from the National Hospital Cost Data Collection (NHCDC).

Data used and comparability of assumptions

The data used under this collection is submitted to IHPA by state and territories responsible for providing these services to their constituents. Consideration of in-scope expenditure in the NHCDC states that all expenditure related to hospital activity should be included.

We believe that whilst the NEP for the delivery of dialysis is not directly comparable to the services that WDNWPT provides, it does provide a useful benchmark for cost efficiency.

Overall the NEP price of $554.49 is approximately 8% lower than the adjusted cost per treatment for WDNWPT of $605.46; however, the specific service delivery context of WDNWPT means a direct comparison is not appropriate. Factors that contribute to this are:

- The NEP is based on a national average whereas WDNWPT operates in remote and very remote areas which are more expensive to operate in
- Our estimate does not include costs of medication (which appear to be covered under the NEP)
• The NEP for dialysis is shared across three types of dialysis, which means it could be low when considering more expensive forms of dialysis.

To adjust for these factors we have constructed assumption based scenarios to show more comparable cost estimates. The basis for these scenarios is discussed in the following sections.

Exclusion of medication from WDNWPT delivery cost estimate

Medication for patients is funded from other sources. UK studies\(^3\) indicate that 12% of costs for dialysis patients are spent on medication, but some of this would be to treat non-dialysis conditions. Whilst the UK has differences in the health system, this provides a useful benchmark for our analysis. Table 5 (Appendix A) considers premiums of 6% and 12% above the current price per treatment and compares this to the NEP.

Impact of remote and very remote areas

As part of the determination of the NEP, loadings are used to adjust for factors that tend to increase or decrease cost. One of these is the loadings is applied to treatments where the patient lives in a remote or very remote areas and accounts for the increased cost of treating patients in these areas. Historically, remoteness loadings have applied to all patient types as part of the calculation for the NEP. However, in the most recent determination of the NEP remoteness loadings only apply to “admitted” patients. Dialysis does not classify as treatment to an admitted patient and as such no remoteness adjustment applies to the NEP for dialysis in 2013-14.

Table 4 (Appendix A) shows the adjustments applied to the NEP for “admitted patients”. If these remoteness adjustments were equally applied to the Nationally Efficient Price (NEP) for the provision of hospital delivered haemodialysis to indigenous patients, the NEP would be affected as shown along the top row of Table 5.

Averaging across various types of dialysis

We view hospital delivered haemodialysis as the most directly comparable with the service that WDNWPT provides. It is also likely to be a higher cost treatment option given the larger amount of labour involved. If the NEP cost estimates have been constructed using an average with lower cost forms of delivery, then it could be artificially low when considering more expensive treatment options.

Overall cost comparison

Table 4 (Appendix A) shows that overall; the indicative cost per treatment for WDNWPT’s remote operations is very similar to the NEP price. When compared to the NEP, the WDNWPT cost per treatment is between 11% less expensive and 10% more expensive depending on adjustments made;

• To incorporate the cost of medication
• To account for the remoteness of WDNWPT operations and;
• To adjust for lower FY13 utilisation than is expected in the longer term

When all three adjustments are made the WDNWPT cost per treatment is approximately 1% lower than the NEP for dialysis. Further, we note that there are several factors which mean that WDNWPT treatments represent further cost saving for government beyond the scope of what is considered in this report or by IHPA:

• WDNWPT are delivering a non-jurisdictional treatment model and is able to operate in an efficient manner across state lines
• WDNWPT operates with almost no governance cost given the volunteer nature of its board of directors
• Remote area treatment avoids the cost of relocation from remote communities for family members and friends of patients (which can be significant)

\(^{3}\)Costs of dialysis for elderly people in the UK, Oxford Journals - Nephrology Dialysis Transplantation
http://ndt.oxfordjournals.org/content/18/10/2122.long
Reinhold P. Grün 1 , Niculae Constantinovici 2 , Charles Normand 1 , Donna L. Lamping 1 and for the North Thames Dialysis Study (NTDS) Group 2003
• Economic value of patients living on country exceeds that of dislocated patients and lost income is likely to reduce welfare dependence (see discussion below)
• There is less chance of a remote evacuation service being needed when treatment options are available on country

Further, it is likely that through economies of scale, if WDNWPT is able to provide more treatments in the future then the cost of treatment will reduce further beyond the cost per treatment constructed to represent 95% utilisation of current services.

Cost Effectiveness Observations

The initial treatment cost summary and NEP comparison above suggests that in terms of treatment costs WDNWPT is providing a value for money service. Overall, the WDNWPT model appears to provide a cost per treatment that is arguably no different from the nationally efficient price. Further, there are a series of cost savings generated by the operational model of WNDPWT that reduce cost to other government services beyond the scope of what is included in the NEP. These require further detailed analysis to allow for a complete cost benefit assessment:

Non jurisdictional treatment model

WDNWPT provides treatment to patients irrespective of the state in which they live. The area that the remote communities span crosses state lines between the Northern Territory, Western Australia and South Australia. The region would be very difficult to govern by any one jurisdiction and there would be cost imposts involved in the effort to effectively coordinate the delivery of services by multiple jurisdictional bodies.

Governance

Much of the board and governance of WDNWPT is provided by Elders who live on the land and are able to directly observe the delivery of services to remote communities. None of the directors receive remuneration and so there is almost no governance cost for WDNWPT. We have assumed that this will continue in future years.

Avoids ‘flow on’ cost of relocation

When patients relocate from remote communities to receive treatment in a major centre, often they are accompanied by one or many family members. Where these family members can be accommodated in hostels this is usually preferred, but otherwise community housing needs to be organised. This has a direct cost impost on local bodies responsible for social housing. Service delivery in remote communities can avoid these costs altogether or reduce them significantly.

Economic value of individuals

Patients may be more economically productive on their own country. In remote communities a significant proportion of non-welfare income is derived through indigenous art. The land, customary practices and other cultural elements are the foundations of Aboriginal art in many different ways – especially in remote communities. There is anecdotal evidence to demonstrate that when patients are on their own country, their ability to generate an income can be enhanced significantly as more and higher quality art can be produced. Over the long term, this means that welfare dependence can be reduced.

Reduced propensity for evacuation

Compliance with treatment is critical for people with ESRF to avoid life threatening illness. Where patients are non-compliant – as occurs when they return home without support or plan for care while at home – a relapse has often required emergency evacuation. You have indicated to us that emergency evacuations from remote regions can cost up to $20,000.

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4Senate Enquiry, Standing Committee on Environment, Communications, Information Technology and the Arts, Indigenous Art – Securing the Future Australia’s Indigenous visual arts and craft sector June 2007, Section 3.39
Alignment with principles

The “Service delivery principles for programs and services for Indigenous Australians” from the COAG National Indigenous Reform Agreement are an agreed national view on the principles that support effective and culturally appropriate service delivery for Indigenous Australians.

Organisations working with Indigenous people, especially those funded by Australian governments, should be expected to have, or be working towards a high degree of alignment with these principles.

The principles are:

- **Priority principle**: Programs and services should contribute to Closing the Gap by meeting the targets endorsed by COAG while being appropriate to local needs.
- **Indigenous engagement principle**: Engagement with Indigenous men, women and children and communities should be central to the design and delivery of programs and services.
- **Sustainability principle**: Programs and services should be directed and resourced over an adequate period of time to meet the COAG targets.
- **Access principle**: Programs and services should be physically and culturally accessible to Indigenous people recognising the diversity of urban, regional and remote needs.
- **Integration principle**: There should be collaboration between and within government at all levels and their agencies to effectively coordinate programs and services.
- **Accountability principle**: Programs and services should have regular and transparent performance monitoring, review and evaluation.

Alignment between WDNWPT and the Service delivery principles

- **Priority principle**
  WDNWPT was established prior to the development of the Closing the Gap agenda, however its’ purpose and activities are directly relevant to the overall intent of the agenda ‘to work together to achieve equality in health status and life expectancy between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians by the year 2030’.

- **Indigenous engagement**
  The fact that WDNWPT is directed by Indigenous men and women from the communities it serves demonstrates a high degree of alignment with this principle.

- **Sustainability principle**
  The ongoing sustainability of the service is bound up with the very sustainability of WDNWPT. This is a major area of focus for the Board and management of the organisation as it deals with multiple sources of funding, various regulatory environments, high equipment and staffing costs, and vast distances. However, the effective governance of WDNWPT ensures that its planning arrangements reflect a sustainable approach to

- **Access principle**
  WDNWPT was established to provide more accessible and culturally appropriate services, so this principle can be described as core to the approach of WDNWPT.

- **Integration principle**
  WDNWPT provides a critical service offering in Central Australia and its relative success has been made possible by the organisation’s continuous efforts to work with other organisations, health departments and governments. These advocacy and awareness raising efforts positively contribute to integration principle.

- **Accountability principle**
  The ongoing monitoring, review and evaluation of WDNWPT is something the organisation welcomes and actively seeks out as evidenced by the multiple reviews and publications about the organisation.

WDNWPT has a high degree of alignment with the service delivery principles.
Conclusions

This report identifies and discusses the many features of WDNWPT that positively transform the lives of Indigenous people and communities in Central Australia.

The material presented here demonstrates that WDNWPT is a critical part of a wider community of health professionals and community members who wish to build a future that improves the wellbeing of Indigenous Australians.

Our observations in this report show WDNWPT to be a resilient organisation that has continually evolved to build the suite of services that not only addresses the dialysis needs of its clients but provides the surrounding support that makes that care more effective and sustainable.

The WDNWPT service delivery model is enabling families to stay together, communities to retain their elders and individuals to remain on country, all of which contribute to larger goals of education participation by children, economic contribution of adults and safety of communities.

This positive impact of WDNWPT means that further detailed assessment is required to identify the costs and benefits (both quantitative and qualitative) of the WDNWPT service delivery model.

In turn such an assessment will identify important features of the ‘WDNWPT Way’ that are transferable to other contexts or organisations.
## Table 2: Detailed cost per treatment calculation (WDNWPT)

<table>
<thead>
<tr>
<th>Ref</th>
<th>Employment Expenses (WDNWPT)</th>
<th>Annual</th>
<th>Per Treatment (Actual)</th>
<th>Per Treatment (95% utilisation)</th>
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<tr>
<td>A</td>
<td>Recruitment &amp; Relocation</td>
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**Capital Expenses (NTG)**

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**Total Capital Expenses**

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<th>Per Treatment (Actual)</th>
<th>Per Treatment (95% utilisation)</th>
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<td></td>
<td>$191,000.00</td>
<td>$72.76</td>
<td>$64.44</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ref</th>
<th>Treatment Expenses (NTG)</th>
<th>Annual</th>
<th>Per Treatment (Actual)</th>
<th>Per Treatment (95% utilisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>Consumables per treatment</td>
<td>(not included)</td>
<td>(not included)</td>
<td>(not included)</td>
</tr>
<tr>
<td>X</td>
<td>Medication</td>
<td>(not included)</td>
<td>(not included)</td>
<td>(not included)</td>
</tr>
</tbody>
</table>

**Total Treatment Expenses**

<table>
<thead>
<tr>
<th></th>
<th>Annual</th>
<th>Per Treatment (Actual)</th>
<th>Per Treatment (95% utilisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$76.24</td>
<td>$76.24</td>
<td>$76.24</td>
</tr>
</tbody>
</table>

**Subtotal (WDNWPT costs)**

<table>
<thead>
<tr>
<th></th>
<th>Annual</th>
<th>Per Treatment (Actual)</th>
<th>Per Treatment (95% utilisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$579.38</td>
<td>$515.73</td>
<td>$515.73</td>
</tr>
</tbody>
</table>

**Subtotal (NTG costs)**

<table>
<thead>
<tr>
<th></th>
<th>Annual</th>
<th>Per Treatment (Actual)</th>
<th>Per Treatment (95% utilisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$91.48</td>
<td>$89.74</td>
<td>$89.74</td>
</tr>
</tbody>
</table>

**Grand total**

<table>
<thead>
<tr>
<th></th>
<th>Annual</th>
<th>Per Treatment (Actual)</th>
<th>Per Treatment (95% utilisation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$670.86</td>
<td>$605.46</td>
<td>$605.46</td>
</tr>
</tbody>
</table>
Table 3: Treatments per day

<table>
<thead>
<tr>
<th>Site</th>
<th>Shifts per day</th>
<th>Days per week</th>
<th>Weeks per year</th>
<th>Patients per shift</th>
<th>Maximum possible treatments</th>
<th>Adjusted to 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alice Springs</td>
<td>1</td>
<td>6</td>
<td>52</td>
<td>2</td>
<td>624</td>
<td>593</td>
</tr>
<tr>
<td>Hermannsburg</td>
<td>1</td>
<td>6</td>
<td>52</td>
<td>2</td>
<td>624</td>
<td>593</td>
</tr>
<tr>
<td>Yuendumu</td>
<td>1</td>
<td>6</td>
<td>52</td>
<td>2</td>
<td>624</td>
<td>593</td>
</tr>
<tr>
<td>Kintore</td>
<td>2</td>
<td>6</td>
<td>52</td>
<td>2</td>
<td>1,248</td>
<td>1,186</td>
</tr>
</tbody>
</table>

3,120       2,964

Table 4: Remoteness loadings applied to NEP for “admitted” patients

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer Regional</td>
<td>Is in respect of a person whose residential address is within an area that is classified as being Outer Regional.</td>
<td>8%</td>
</tr>
<tr>
<td>Remote Area</td>
<td>Is in respect of a person whose residential address is within an area that is classified as being Remote.</td>
<td>15%</td>
</tr>
<tr>
<td>Very Remote Area</td>
<td>Is in respect of a person whose residential address is within an area that is classified as being Very Remote.</td>
<td>24%</td>
</tr>
</tbody>
</table>

Table 5: Scenarios showing interaction of various adjustment factors

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>None</td>
<td>$554.49</td>
<td>$597.14</td>
<td>$634.46</td>
<td>$682.44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plus 6%medication</td>
<td>$711.11</td>
<td>28%</td>
<td>12%</td>
<td>12%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>Plus 12%medication</td>
<td>$751.36</td>
<td>36%</td>
<td>26%</td>
<td>18%</td>
<td>10%</td>
</tr>
<tr>
<td>Scenario - 95% Utilisation</td>
<td>None</td>
<td>$605.46</td>
<td>9%</td>
<td>1%</td>
<td>-5%</td>
<td>-11%</td>
</tr>
<tr>
<td></td>
<td>Plus 6%medication</td>
<td>$641.79</td>
<td>16%</td>
<td>7%</td>
<td>1%</td>
<td>-6%</td>
</tr>
<tr>
<td></td>
<td>Plus 12%medication</td>
<td>$678.12</td>
<td>22%</td>
<td>14%</td>
<td>7%</td>
<td>-1%</td>
</tr>
</tbody>
</table>
## Appendix B  Detailed financial assumptions

<table>
<thead>
<tr>
<th>Ref</th>
<th>Assumption</th>
<th>Value used</th>
<th>Source</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Recruitment &amp; Relocation</td>
<td>$3,500</td>
<td>FY2012/13 Accounts</td>
<td>Recruitment and relocation expenses coded to Alice Springs, Kintore, Yuendumu &amp; Hermannsburg in FY13 year were $3,324.94. This represented approximately 80% of WDNWPT spend on recruitment and relocation that year.</td>
</tr>
<tr>
<td>B</td>
<td>Staff Training</td>
<td>$7,000</td>
<td>FY2012/13 Accounts</td>
<td>Staff training expenses coded to Alice Springs, Kintore, Yuendumu &amp; Hermannsburg in FY13 year were $6,856.40. This represented approximately 78% of WDNWPT spend on staff training that year with much of the remainder being allocated to purple truck activity.</td>
</tr>
<tr>
<td>C</td>
<td>Staff Travel &amp; Accommodation</td>
<td>$12,000</td>
<td>FY2012/13 Accounts</td>
<td>Staff travel &amp; accommodation cost coded to Alice Springs, Kintore, Yuendumu &amp; Hermannsburg in FY13 year were $11,224.29.</td>
</tr>
<tr>
<td>D</td>
<td>Remuneration - Dialysis nurses</td>
<td>$770,000</td>
<td>FY 2012/13 Accounts</td>
<td>Staff wages and remote allowance, TIL and leave balances for all nursing staff assigned to Alice Springs, Kintore, Yuendumu &amp; Hermannsburg in FY13 year actual costs were $770,000.</td>
</tr>
<tr>
<td>E</td>
<td>Remuneration - Clinical management</td>
<td>$90,000</td>
<td>FY 2012/13 Accounts</td>
<td>Staff wages and remote allowance, TIL and leave balances for all clinical staff assigned to Alice Springs, Kintore, Yuendumu &amp; Hermannsburg in FY13 year actual costs were $90,000.</td>
</tr>
<tr>
<td>F</td>
<td>Remuneration - Administration and management</td>
<td>$135,000</td>
<td>FY 2012/13 Accounts</td>
<td>Management staff wages, TIL and leave balances and workers compensation, were considered for one senior staff (30%) and two junior staff (70%)</td>
</tr>
<tr>
<td>G</td>
<td>Superannuation</td>
<td>$78,250</td>
<td>FY 2012/13 Accounts</td>
<td>Superannuation is listed as a separate line item for the above and is applied to all salaries at 9% FY13 rate but excludes remote allowance. Whilst contribution rates will increase in future years we have used the FY13 figures as a point in time comparison.</td>
</tr>
<tr>
<td>H</td>
<td>Workers Compensation</td>
<td>$21,465</td>
<td>FY 2012/13 Accounts</td>
<td>Workers compensation insurance is calculated as a flat 2% rate on line items D, E, F and G. It is reflected in FY13 accounts.</td>
</tr>
<tr>
<td>I</td>
<td>Freight</td>
<td>$8,000</td>
<td>FY2012/13 Accounts</td>
<td>Freight expenses coded to Alice Springs, Kintore, Yuendumu &amp; Hermannsburg in FY13 year were $7,913.12. These were only WDNWPT freight expenses recorded in financial statements for that year.</td>
</tr>
<tr>
<td>J</td>
<td>Power, Water &amp; Gas</td>
<td>$40,000</td>
<td>FY2012/13 Accounts</td>
<td>Utilities cost coded to Alice Springs, Kintore, Yuendumu &amp; Hermannsburg in FY13 year were $41,071.97. This represented approximately 94% of WDNWPT spend on utilities that year.</td>
</tr>
<tr>
<td>K</td>
<td>Service consumables</td>
<td>$12,000</td>
<td>FY2012/13 Accounts</td>
<td>The cost of Service Consumables (food) coded to Alice Springs, Kintore, Yuendumu &amp; Hermannsburg in FY13 year were $21,501.09. Approximately 50% of this has been assigned as a treatment expense and included in the estimate.</td>
</tr>
<tr>
<td>L</td>
<td>Minor Medical Equipment</td>
<td>$3,750</td>
<td>FY2012/13 Accounts</td>
<td>Minor medical equipment expenses coded to Alice Springs, Kintore, Yuendumu &amp; Hermannsburg in FY13 year were $3,677.89.</td>
</tr>
<tr>
<td>M</td>
<td>Administration</td>
<td>$125,000</td>
<td>FY 2012/13 Accounts</td>
<td>Administration accounts for phone, internet, office equipment and supplies, IT support, accounting and audit services, repairs and maintenance, meeting expenses, legal fees, bank...</td>
</tr>
</tbody>
</table>
charges and other miscellaneous administrative costs. Administrative expense is approximately 15% of total WDNWPT costs, although non treatment activities have a relatively higher administration burden. Administration is assumed as 10% of total other site related costs.

N  Building cleaning  $2,500  FY2012/13 Accounts
Cleaning expenses coded to Alice Springs, Kintore, Yuendumu & Hermannsburg in prior year were $2,392. These were only WDNWPT cleaning expenses recorded in financial statements for that year.

O  Rates  $1,900  FY2012/13 Accounts
Rates paid and coded to Alice Springs, Kintore, Yuendumu & Hermannsburg in FY13 year were $1,962.62. These were only WDNWPT rates expenses recorded in financial statements for that year.

P  Insurances  $22,000  FY2012/13 Accounts
Insurance cost coded to Alice Springs, Kintore, Yuendumu & Hermannsburg in FY13 year were $22,189.87. This represented approximately 29% of WDNWPT spend on insurance costs that year.

Q  Motor Vehicle Fuel & Oil  $20,000  FY2012/13 Accounts
The following schedule was used to provide assumptions around motor vehicle usage.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount used in unit cost</th>
<th>Total expense coded to these sites</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel &amp; Oil (staff usage)</td>
<td>$20,000</td>
<td>$59,177</td>
<td>34%</td>
</tr>
<tr>
<td>Repairs and maintenance</td>
<td>$10,000</td>
<td>$27,354</td>
<td>37%</td>
</tr>
<tr>
<td>Rego &amp; Insurance</td>
<td>$7,500</td>
<td>$10,069</td>
<td>74%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$37,500</strong></td>
<td><strong>$96,600</strong></td>
<td><strong>39%</strong></td>
</tr>
</tbody>
</table>

The following factors were considered:
- Usage of motor vehicles in remote areas tends to be staff related usage and is ultimately necessary for providing treatment - this should be included in unit cost
- Usage in Alice Springs tends to be for providing community support and non dialysis services (such as trips for clients to the bank/supermarket etc) - this should not be included in unit cost
- Fuel usage and R&M in remote areas tends to be low as communities are very geographically small
- A relatively low proportion of fuel, repairs and maintenance costs should be considered as treatment related
- However, given that vehicles spend majority of time in remote locations, registration and insurance is more relevant there
- A relatively higher proportion of registration and insurance should be considered treatment related and included in unit cost
- Allocations between 34% and 74% were selected based on judgement of WDNWPT business managers and considering these factors

R  Motor Vehicle Repairs & Maintenance  $10,000  FY2012/13 Accounts

S  Motor Vehicle Rego & Insurance  $7,500  FY2012/13 Accounts
<table>
<thead>
<tr>
<th>Ref</th>
<th>Assumption</th>
<th>Value used</th>
<th>Source</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Depreciation - Buildings</td>
<td>$115,000</td>
<td>Estimate</td>
<td>The following schedule was used to calculate depreciation on buildings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Building</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>69 Flynn Drive ALICE SPRINGS (brick construction)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Parks St Yuendumu - Dialysis Unit (transportable)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>House Lot 332 Yuendumu (steel frame construction)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Visitor Accommodation Yuendumu (transportable)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Clinic at Kintore (brick construction)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Clinic at Hermannsburg - Dialysis Unit (transportable)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Totals</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Depreciation Per Annum</strong></td>
</tr>
<tr>
<td>U</td>
<td>Depreciation - Motor vehicles</td>
<td>$35,000</td>
<td>Estimate</td>
<td>The five vehicles used for remote sites included in calculations cost approx. $50,000 each, and the expected useful life is 7 years due to the road conditions and amount of use they get, resulting in depreciation of $7,200 per year per vehicle.</td>
</tr>
<tr>
<td>V</td>
<td>Depreciation - Machinery</td>
<td>$40,000</td>
<td>Estimate</td>
<td>Dialysis machines assumed to cost approximately $35,000 and be depreciated on a straight line basis over seven years. The total depreciation is $40,000 based on eight total machines.</td>
</tr>
<tr>
<td>W</td>
<td>Consumables per treatment</td>
<td>$76.24 per treatment</td>
<td>Estimate</td>
<td>The following were used in the estimate of consumables per treatment. Fistula Pack = $5.60, Dialyser FX80 (most common) = $32.00, 2008/4008 Blood-line = $9.50, Needles x 2 = $2.00, Normal Saline 1L = $1.34, BiBags 650g (most common) = $16.00, Part A Dialysis solution = $9.80. This was the basis for a total cost per treatment of $76.24.</td>
</tr>
<tr>
<td>X</td>
<td>Medication</td>
<td>Not included</td>
<td>Not included</td>
<td>Medication provided by NT Government at no cost. Estimates have been included as scenarios in the main section.</td>
</tr>
</tbody>
</table>
Appendix C  Reliances and limitations for financial analysis

The calculation of cost per treatment for dialysis provision for WDNWPT has been specifically been prepared for the purpose of providing an indicative view of the cost effectiveness of the treatment provided by WDNWPT. It should not be relied upon for any other purpose. Ernst & Young shall have no liability with respect to the use of the calculations outside of the purpose for which it was completed. The calculations do not provide an opinion on the cost of WDNWPT operations. Except where explicitly mentioned, all data has been provided by WDNWPT.

For many inputs, historic costs were examined and a percentage attribution is conducted over those costs to approximate the proportion of total cost related to dialysis treatment. Specifically, the chosen proportion is a judgement by WDNWPT staff and does not represent an opinion by Ernst & Young. Further, the exclusion and inclusion of certain categories of costs in our calculation was a judgement made by WDNWPT staff. Both the apportionment and exclusion of costs are designed to help separate treatment and non treatment related expenses. Our conclusions are based on the assumptions stated in this document and on the information provided by WDNWPT. Neither Ernst & Young nor any member or employee thereof undertakes responsibility in any way whatsoever to any person in respect of errors arising from incorrect information provided by WDNWPT.

Ernst & Young, nor the parties which have endorsed or been involved in the development of this report, accept any responsibility for use of the information contained in this report and make no guarantee nor accept any legal liability whatsoever arising from or connected to the accuracy, reliability, currency or completeness of any material contained in the report. Ernst & Young and all other parties involved in the preparation and publication of the Model expressly disclaim all liability for any costs, loss, damage, injury or other consequence which may arise directly or indirectly from use of, or reliance on, this report.

In the preparation of the calculation we have relied upon and considered information believed after due enquiry to be reliable and accurate. We have no reason to believe that any information supplied to us was false or that any material information has been withheld from us. We do not imply and it should not be construed that we have verified any of the information provided to us, or that our enquiries could have identified any matter, which a more extensive examination might disclose. We have however evaluated the information provided to us by WDNWPT as well as other parties through enquiry, analysis and review and nothing has come to our attention to indicate that the information provided was materially misstated.

In carrying out our work and preparing this report, Ernst & Young has worked solely on the instructions of WDNWPT, and has not taken into account the interests of any party other than WDNWPT.

In preparing our analysis, some costs have been excluded, which whilst treatment related, are not occasioned directly by WDNWPT. These are specifically the cost of medication and stores for treatment. Scenarios have been constructed to show the possible effects of including these costs in our estimate.

In accordance with normal professional practice, neither Ernst & Young, nor any member or employee thereof undertakes responsibility in any way whatsoever to any person other than WDNWPT in respect of the analysis. The analysis may not be relied upon or used by anyone other than WDNWPT in any matter whatsoever without the prior written consent of Ernst & Young.

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Members of Ernst & Young staff are available to explain or amplify any matter presented herein.
Appendix D  References


## Appendix E  Project participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Brief biography</th>
</tr>
</thead>
</table>
| Catherine Friday            | *Sponsoring Partner*  
  - Catherine leads the Firm’s Canberra Risk Practice, which includes internal audit, enterprise risk management, corporate governance, and compliance service lines  
  - Catherine has been operating in the Federal Government arena for three years, prior to which she led the Firm’s enterprise risk management team in Melbourne, servicing both Victorian Government and ASX Top 20 clients  
  - Catherine has worked for not-for-profits and NGO’s to develop bespoke risk management solutions that have resilience and flexibility to accommodate changing business dynamics yet are robust enough to support corporate governance obligations. |
| Ben Fielding                | *QA Partner*  
  - Ben is EY’s lead partner for the Commonwealth Department of Health.  
  - Ben has a noteworthy track record of leading change in health service delivery within both Australia and the UK.  
  - He has a strong background in the operational management of health services and brings this experience to bear in helping organisations pursue opportunities for performance improvement and strategic reform.  
  - His experience covers a broad range of issues facing health service delivery, including service planning, financial improvement and cost reduction, supply chain, organisational design and new operating models. |
| Mark Dingle                 | *Senior Manager*  
  - Mark works in EY’s Canberra Risk practice where he applies his significant risk, governance and compliance skills and experience with a range of Commonwealth public sector clients.  
  - Mark is a member of EY’s National Reconciliation Committee and is a member of the recruitment sub-committee to encourage Indigenous graduates to join EY.  
  - Prior to joining EY Mark’s career spanned teaching in schools and TAFEs, public sector management roles and executive positions in the not-for-profit sector. Through these various roles Mark has built a strong understanding of the community and public sector organisations. |
| Liesel Meinecke             | *Senior Manager*  
  - Liesel has 7 years of previous consulting experience within the area of financial and cost management services, where she focused on financial systems selection and implementation, business analysis, performance management and project management.  
  - Her consulting experience spans a range of countries and industries including automotive, telecommunications, packaging and the public sector. She has experience in working in small local engagements as well as large global projects with diverse teams.  
  - Since joining EY in Canberra, she has focused on a range of different engagements within the health industry, including grants funding and program assessments. |
| Sheena Wu                   | *Senior Consultant*  
  - Sheena is a Senior Consultant in Ernst & Young’s Canberra office.  
  - Since joining EY she has gained broad experience with a range of government departments and agencies and has developed industry experience in areas such as program evaluations, resource planning and project management.  
  - She has focused on a range of different engagements within the health industry. |
Alex Rowley
Senior Manager

► Alex is a senior manager within EY’s Actuarial Services team.
► His focus is on the application of quantitative and numerical skill sets to solve a variety of complex business problems.
► Alex has overseen the development of innovative workforce, cost and risk focused models in a variety of organisations including extensive work within the Government sector.

Prof Alan Cass
Director
Menzies Institute

► Professor Alan Cass is a leading Australian kidney specialist with extensive experience in Indigenous health and Indigenous communities, developed through his wide-ranging career as a kidney health researcher.
► Previously the director of the Renal Division at the prestigious George Institute for Global Health in Sydney, Prof. Cass is also a member of the Executive of the Australasian Kidney Trials Network; the president-elect for the Australian and New Zealand Society of Nephrology; and a leading proponent of academic collaboration in clinical research in kidney disease.
► In 2003, Prof. Cass completed a Harkness Fellowship at Harvard University in the USA. He is a chief investigator for the Kanyini Vascular Collaboration, which brings together researchers, health providers and communities across Australia to conduct research to improve health outcomes for Indigenous Australians with heart disease, diabetes and kidney disease.

Gillian Gorham
Program Manager
Renal Health
Menzies Institute

► Gillian has more than 30 years’ experience in health services with postgraduate nursing qualifications in a number of specialty areas. She has been a senior nurse manager for more than 20 years in the Northern Territory.
► Her main interest is renal health, particularly renal service planning, development and delivery. She has academic qualifications in health service management. Gillian was involved in the establishment of many of the renal services in the Territory including Australia’s first satellite facility in a remote community, the home and community-based dialysis program and renal services for the Barkly region.
► Gillian’s research area is Indigenous health and kidney disease and she has a particular interest in education and communication formats for Indigenous Australians. She has produced a number of renal educational resources for Indigenous Australians and has worked on several research projects exploring miscommunication in health care settings.

Sarah Brown
CEO
WDNWPT

► Sarah Brown is the CEO of WDNWPT and has been since its inception more than a decade ago.
► Sarah was a Remote Area nurse for 10 years in NT, WA and Tasmania.
► Sarah is also currently contracted as a casual lecturer in the school of Medicine at the University of New England.

Karen Edwards
Alliance Partner

► Karen is a skilled consultant who has leveraged her 22 years experience in health and human services delivery to provide relevant and practical advice for Commonwealth, State and NGO clients.
► Her extensive experience include 15 years in delivering community health services, including drug and alcohol services.
► During her 8 years as a senior primary and community health executive in rural Area Health Services, Karen was also responsible for area-wide drug and alcohol services.
► She is an experienced evaluator.
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