

# Telehealth in Diabetes clinics: How to connect yours

Dr Sheila Cook  
Director of Diabetes and Endocrinology  
Toowoomba Hospital  
University of Queensland Rural Clinical School



# Definitions



## Telehealth:

“Use of telecommunication techniques for the purpose of providing telemedicine, medical education and health education over a distance”

- Improving healthcare access for rural people
- Better use of health care resources

## Telemedicine:

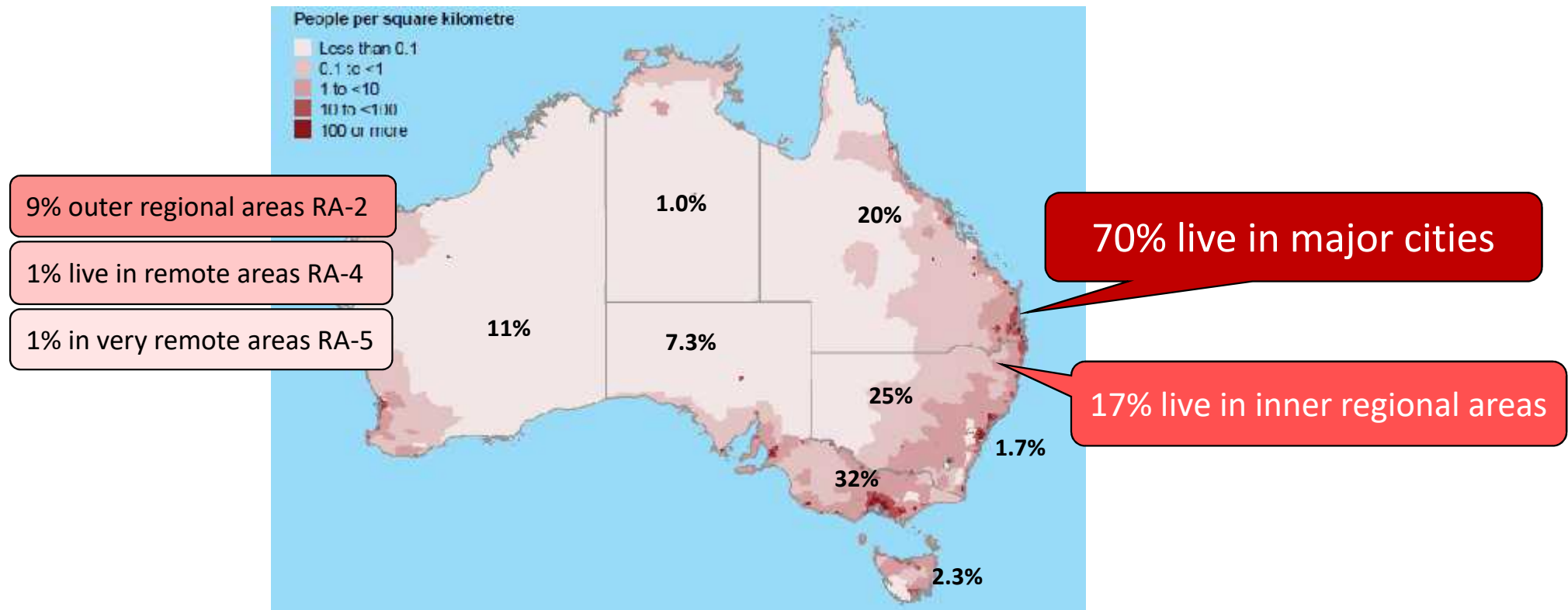
“Use of advanced telecommunication technologies to exchange health information and provide health care services across geographic, time, social and cultural barriers”



## The problem with living in rural areas...

- Lack of access to health care
- Travel large distances for care
- Lower levels of education
- Lower household income
- Lack of public infrastructure

# Where do people live?



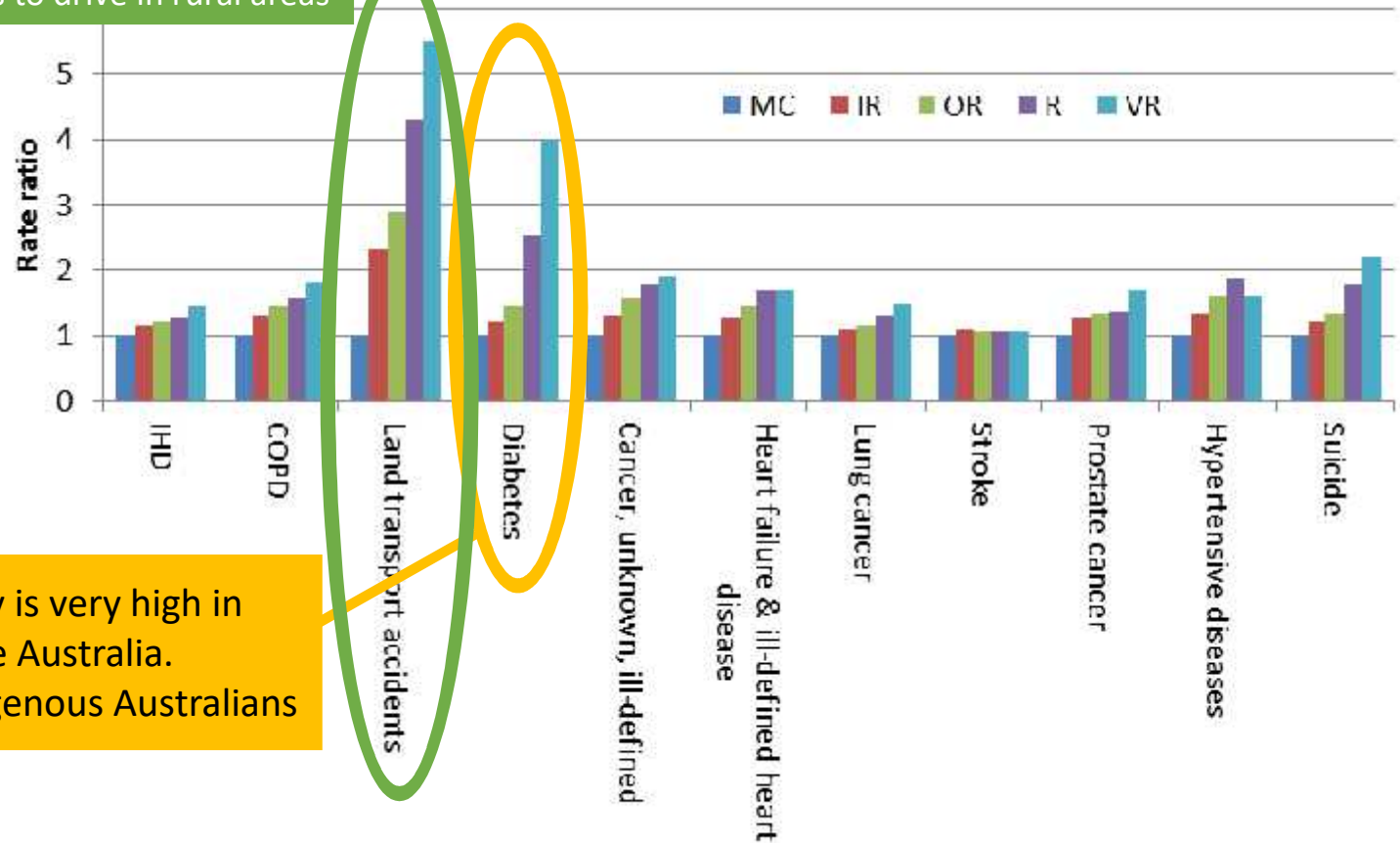
ABS Australian Standard Geographical Classification (ASGC) RA1-5



# Morbidity & mortality are higher in rural areas

It's dangerous to drive in rural areas

Number of deaths, by cause, in each area, in excess of the Major cities rate, for the 3 year period 2009-2011



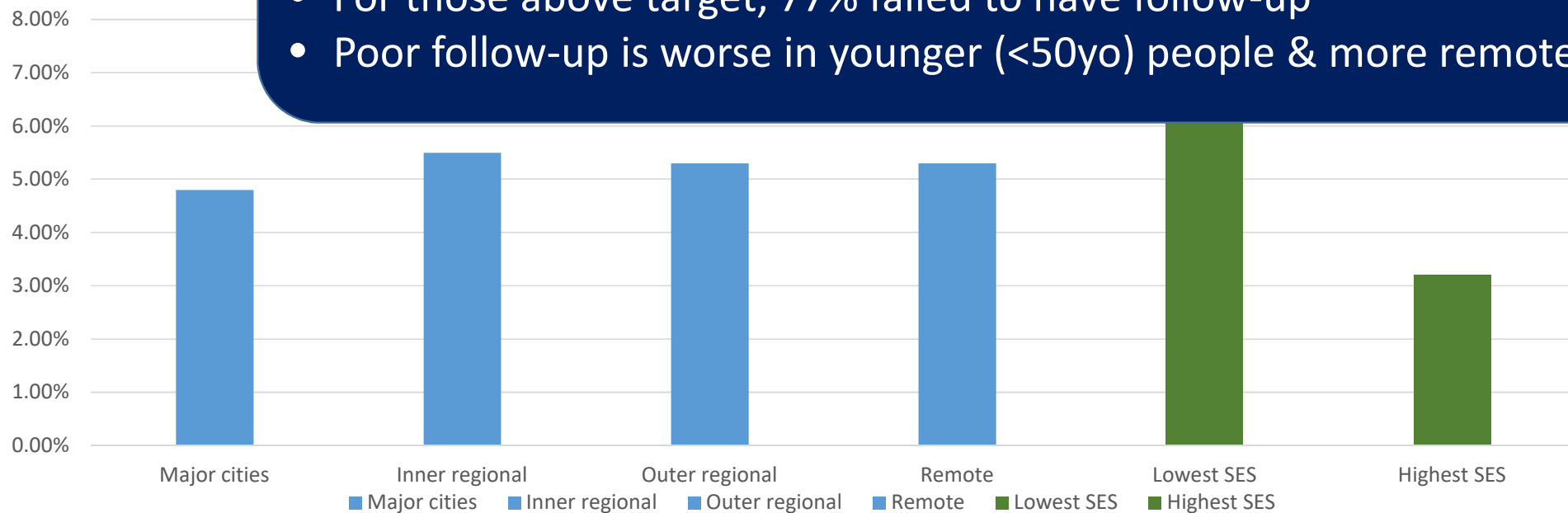
Diabetes-related mortality is very high in remote & very remote Australia. Not all accounted for by Indigenous Australians

# Diabetes Prevalence

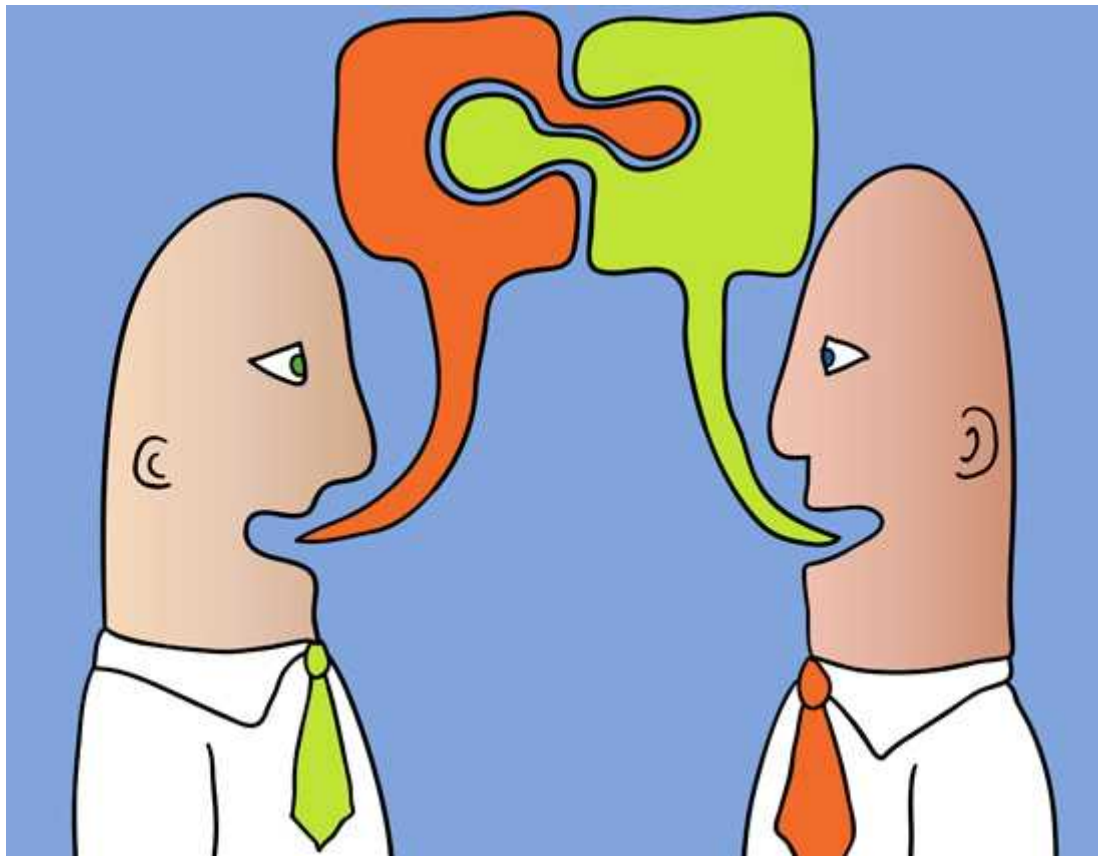
## Diabetes management is suboptimal:

- Lower levels of screening
- ~60% of rural Australians do not have regular HbA1c testing
- For those above target, 77% failed to have follow-up
- Poor follow-up is worse in younger (<50yo) people & more remote

We need to improve the care of patients in rural & remote areas



# Diabetes care is all about good communication



- Complex disease
- Significant social impact
- Self-management requires good education & empowerment
  
- Lifestyle changes
- Lots of medications
- **Lots to talk about**

Lots of patients & busy clinics

# Patients don't remember as much as we think

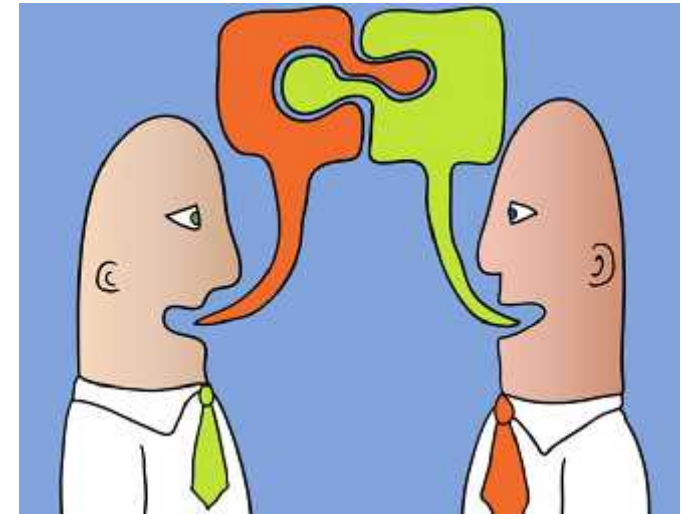
- Patients recall 10-20% of the information in a consultation
- On average, patients remember **1 out of 4 instructions**
- **Lower** levels of recall occur when:
  - Lower level of patient education
  - More than 3 instructions are given
  - Follow-up appointment is longer than 14 days





# What determines good doctor-patient communication?

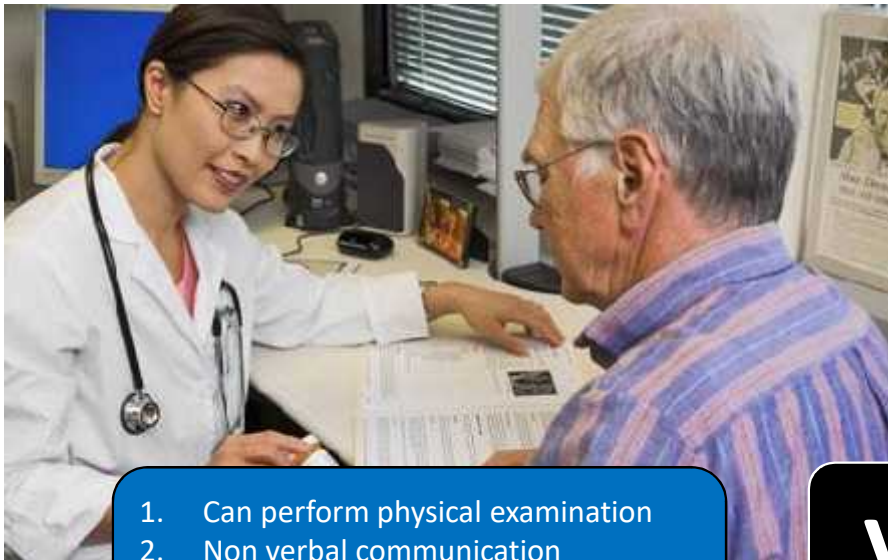
- Doctor's communication skills<sup>1</sup>
- Context – familiar environment & conversation topics<sup>1</sup>
- Social gradient between doctor and patient <sup>2,3</sup>
  - Patient's perception of doctor, communication style, relatability
  - Patient's **social disadvantage** predicts:
    - Patient provides less information
    - Less likely to be examined by doctor
    - Doctor provides less information *esp. diet, exercise, smoking*
    - Lower levels of understanding, motivation
    - Less satisfied by consultation



GP's really have the advantage

1. Essers G et al. Context factors in general practitioner - patient encounters and their impact on assessing communication skills - an exploratory study. *BMC Family Practice*, 2013 **14**:65
2. Verlinde E et al. The social gradient in doctor-patient communication. *Int J Equity Health*. 2012; **11**: 12
3. Street RL. Communicative styles and adaptations in physician-parent consultations. *Soc Sci Med*.1992;**34**:1155–1163

# Consider the typical diabetes clinic ...



1. Can perform physical examination
2. Non verbal communication
3. Whole team see the patient
4. We "own" the process, it's familiar

## Do patients really hear us?

- Stressful, overwhelming, too many messages
- Travel costs ++

VS

1. Improved communication
2. Continuity of care
3. Education of GP in DM care
4. Scripts written
5. Early follow-up arranged

The patient's GP & practice nurse participate too



# So, how about Telehealth?



- 65-70% patients report **high levels satisfaction** with technology <sup>1,2</sup>
- Significant increase in adherence to clinic recommendations:
  - BGL monitoring, lifestyle changes, medications <sup>3</sup>
- HbA1c outcomes same as for usual clinic
- Less time off school & work
- Improved attendance at clinic <sup>1,2</sup>
  - More frequent contact with healthcare team
  - Improved diabetes knowledge

## Limited studies

### Greatest successes occurred:

- Type 2 Diabetes
- Rural sites
- Included GP, practice nurses
- Telemonitoring

1. Wood CL et al. Use of Telemedicine to Improve Adherence to American Diabetes Association Standards in Pediatric Type 1 Diabetes. 2016 Jan; *Diabetes Technol Ther.* 18(1):7-14

2. Robinson MD et al. Measuring Satisfaction and Usability of Face time for virtual visits in Patients with Uncontrolled Diabetes. *Telemed J E Health.* 2015 Aug 21.

3. Ciemins E et al. Using telehealth to provide diabetes care to patients in rural Montana: findings from the promoting realistic individual self-management program. *Telemed J E Health.* 2011 Oct; 17(8): 596-602

# Cost Benefits: show me the money

- MBS subsidies & GP incentives were introduced in 2011
- GP incentives were repealed in June 2014



	MBS Item	Rebate	Telehealth MBS item	Telehealth Rebate
Initial consultation <10 minutes			114	\$113.20
Initial consultation >45 minutes	132	\$263.90	112	\$395.85 (+ 50%)
Review consultation <10 minutes	116	\$75.50	112	\$113.25 (+50%)
Review consultation 20 – 40 minutes	110	\$150.90	112	\$226.35 (+ 50%)
Review consultation >20 minutes	133	\$132.10	112	\$198.15 (+ 50%)

MBS June 2016

Patient travel subsidy scheme	\$654.00 paid per patient
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# Cost effectiveness of telehealth

- Preadmission clinic at Toowoomba
- Telehealth appointments compared with face-to-face clinic
- 4 years of data, 1478 patients
- Average savings per patient:
  - \$57 in service cost
  - \$289 in travel payments
  - 500km of travel
  - 6.5 hours
- High level of satisfaction – patients and clinicians





# Compare the telehealth & conventional clinics

## Conventional Clinic

- MBS rebates (new) = \$ 791.70
  - MBS rebate (review) = \$ 528.40
  - PTSS payments (4) = -\$2616.00
- = loss of \$1296.60 per clinic



## Telehealth Clinic

- MBS rebates (new) = \$1187.55
  - MBS rebate (review) = \$ 792.60
  - PTSS payments (4) = \$ 0
- = hospital revenue = \$ 1979.60

Cost of Video camera = \$630

Net loss = \$ 1296.60

Net gain = \$ 1369.60

That's a difference of  
**\$2658.20**  
in favour of telehealth



# How about the patients?



## Conventional Clinic

### Costs to each patient

- Carpark = \$ 25.00
- Petrol = \$ 60.00
- Hotel = \$ 250.00

Total loss = \$335.00 per patient



Seven patients from 1-2 hours away

- 3 new consults
- 4 review consults

- Time off work
- Wear & tear on car
- Effect on friendships (!)
- Risk of MVA

## Telehealth Clinic

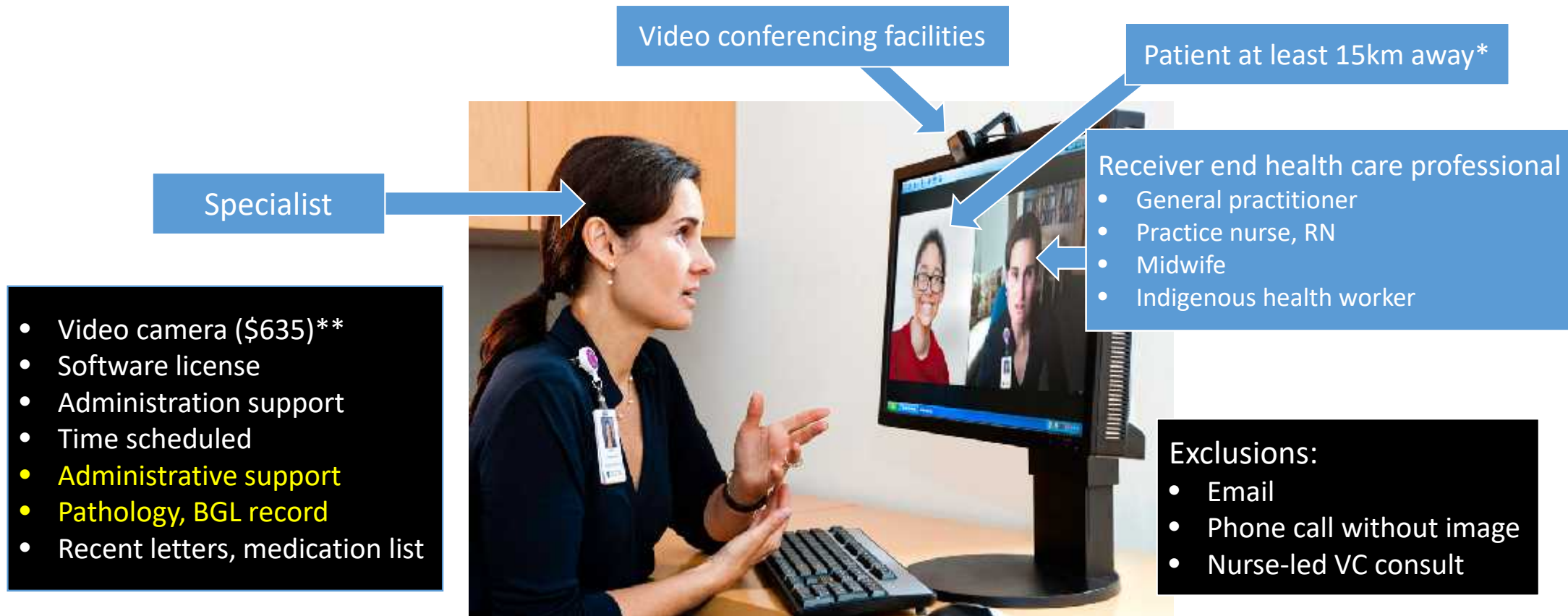
### Cost to each patient

- Carpark = \$ 0
- Petrol = \$ 10
- Hotel = \$ 0

Total loss = \$10 per clinic

- Less time off work & school
- Happy to come back next time

# What is required for a telehealth consultation?



\*\*VC systems can cost up to \$30 000 eg. Powerpack, wireless, dental probe, ENT probe etc.

\*Telehealth eligible areas = RA2-5

[www.mbsonline.gov.au](http://www.mbsonline.gov.au)

# How to fund a telehealth service

- Videoconferencing package **\$635**

- Video camera
- Software license

- *Administrative support*

- *DDHHS did not fund new positions or extra hours for AO's*

- *Clinician's time*

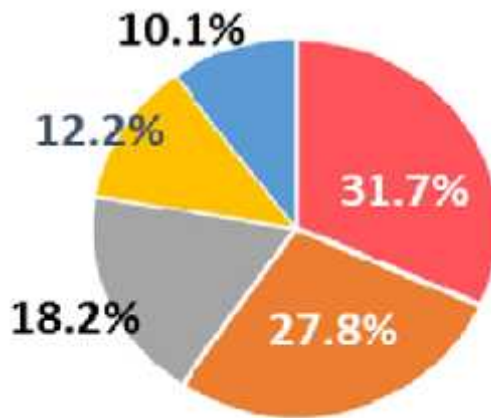
- *Telehealth appointments embedded in existing clinics*
- *Dedicated telehealth session*

**Administrative support is critical**

- Scheduling
- Compiling pathology, charts
- Communication with GPs, patients
- Contact for hiccups

# Toowoomba Hospital & Darling Downs

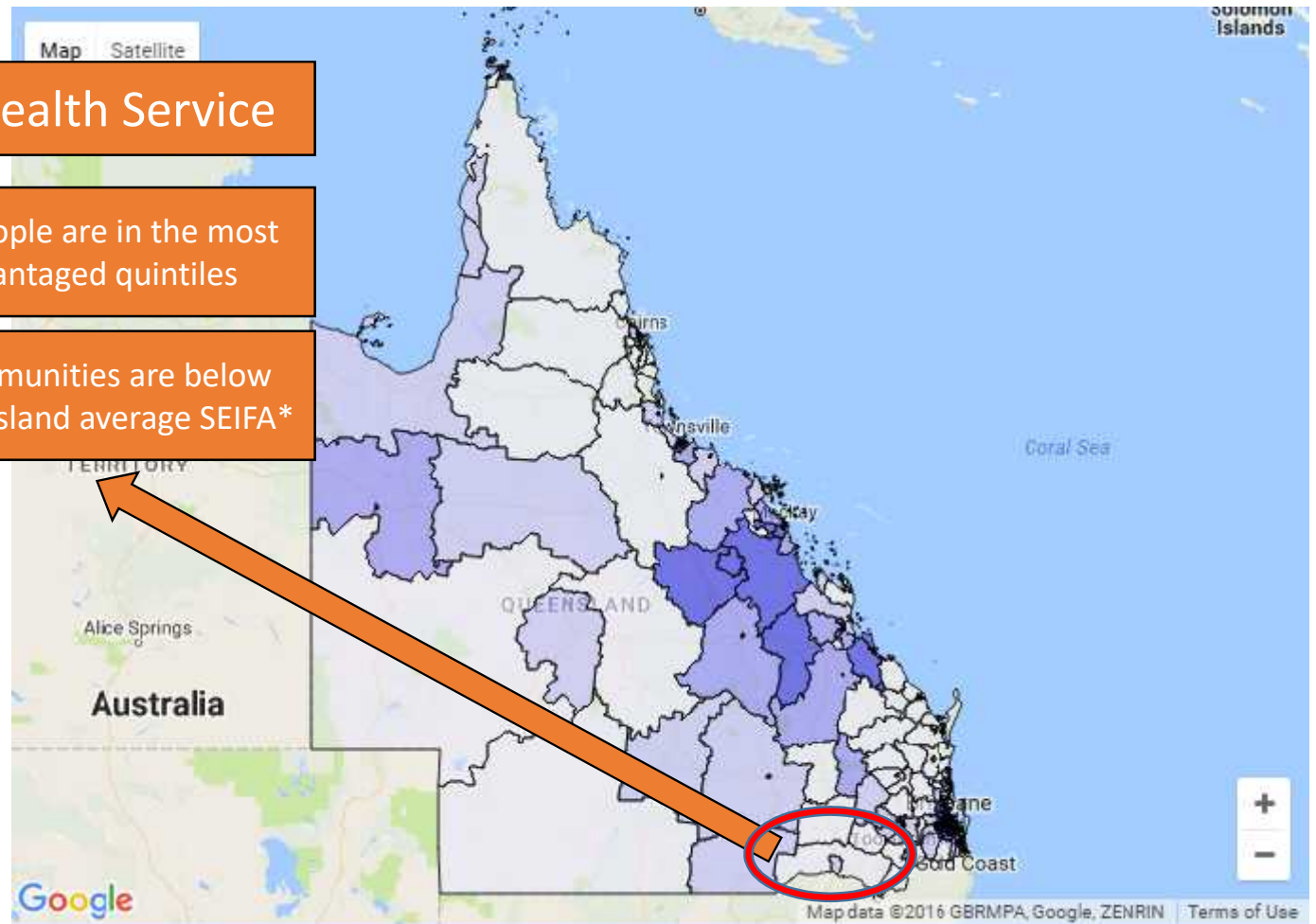
## Darling Downs Hospital & Health Service



59.5% people are in the most disadvantaged quintiles

75% communities are below the Queensland average SEIFA\*

ABS 2011 Median total household income  
Socio-Economic Indexes for Areas (SEIFA)

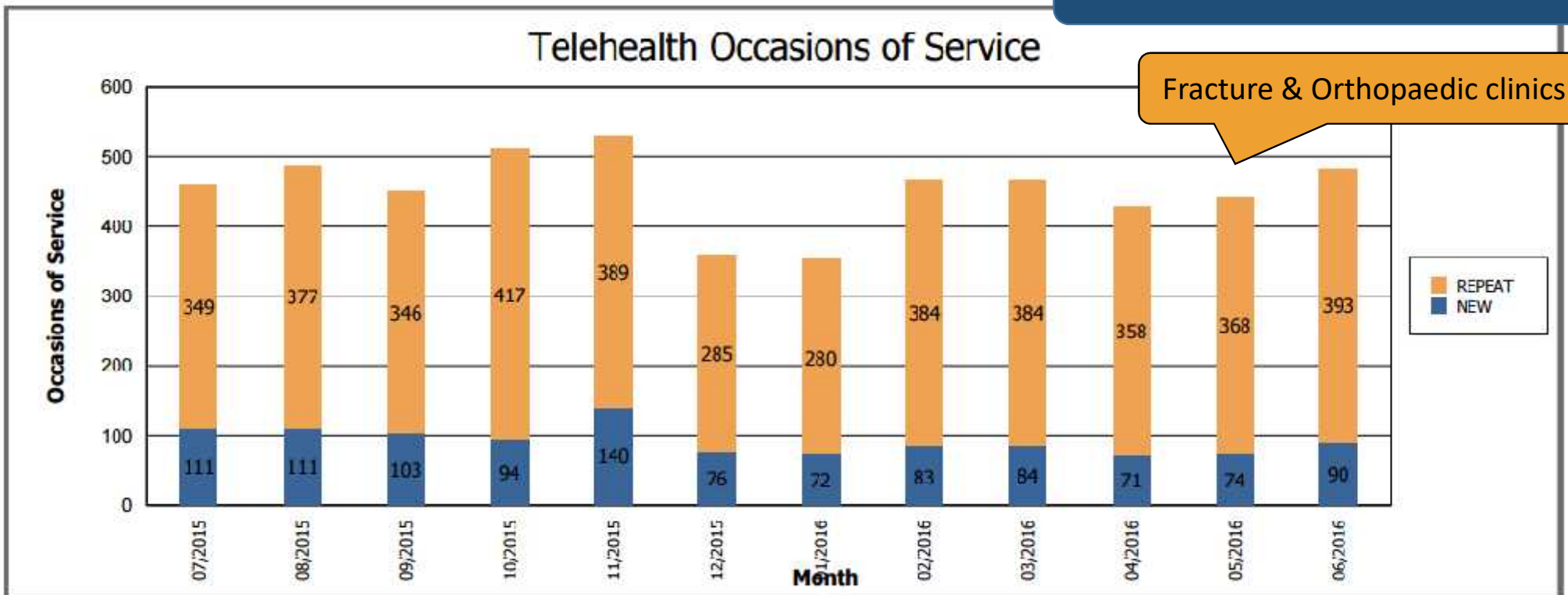




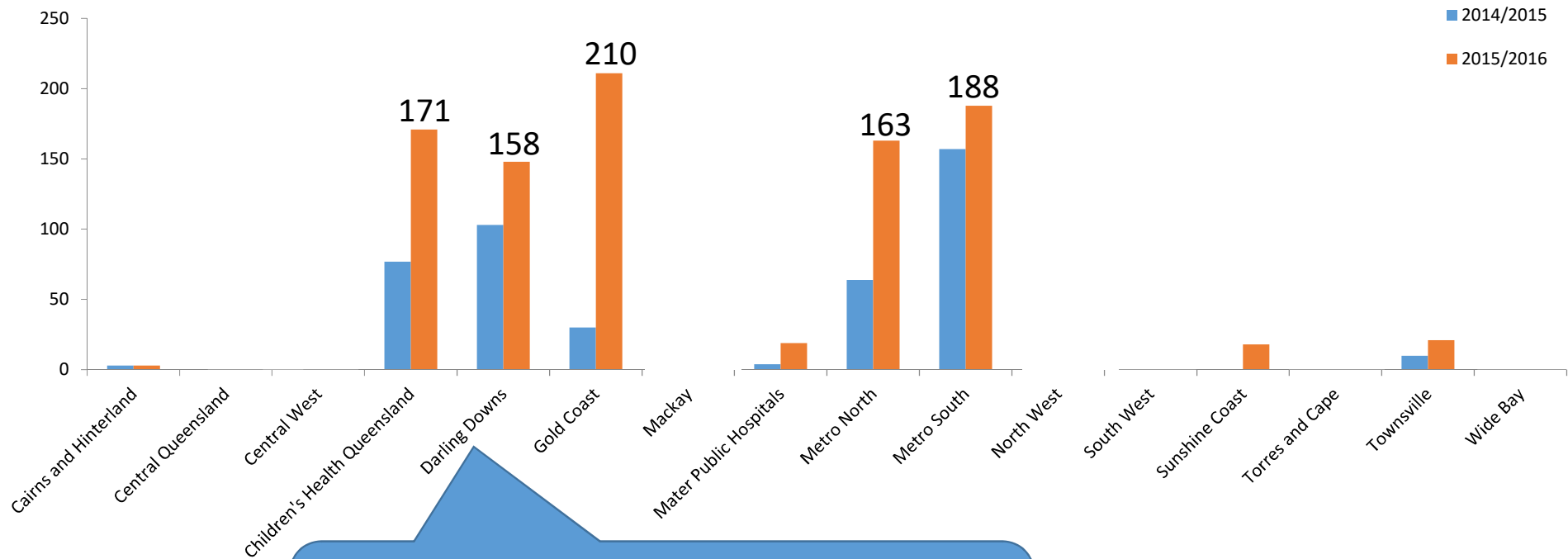
# Telehealth at Toowoomba Hospital July 2015-June 2016

Diabetes Clinic = 158 patients/year

Fracture & Orthopaedic clinics



# Telehealth Diabetes Clinics in Queensland



- Telehealth targeting key communities
- Regular visit – relationships, education
- Telehealth clinic & adhoc clinic appointments
- High risk foot telehealth clinic

# My experience & suggestions

- Administrative support
- Go out and meet your team
  - GP, practice nurse, and community health team
  - Get to know and trust each other
  - Understand their community & their role in it
  - Where do you fit in? What's your best effort?
- New patients visit in person if possible
  - Lot of non-verbal elements eg. Examination, building rapport, watch their response to you & your advice
  - "Open the account"
- Review as Telehealth
  - Data available for both sides
  - Update your care plan
  - You can trust the data if you have already built your relationship with the patient



# Summary

- Telehealth addresses access to care for rural people
- Well-accepted by patients
- Telehealth is more cost effective than usual care
  - *“usual care” is very expensive*
  - *How much do our patients really gain?*
- May improve the quality of primary care in remote communities
- It's not hard to set up





*“We now feel it’s cheaper to do surgery via Skype. So, go home and lie down in front of your computer.”*





**Questions?**

# Tara is 2½ hours' drive from Toowoomba



No electricity  
No running water  
No internet or mobile

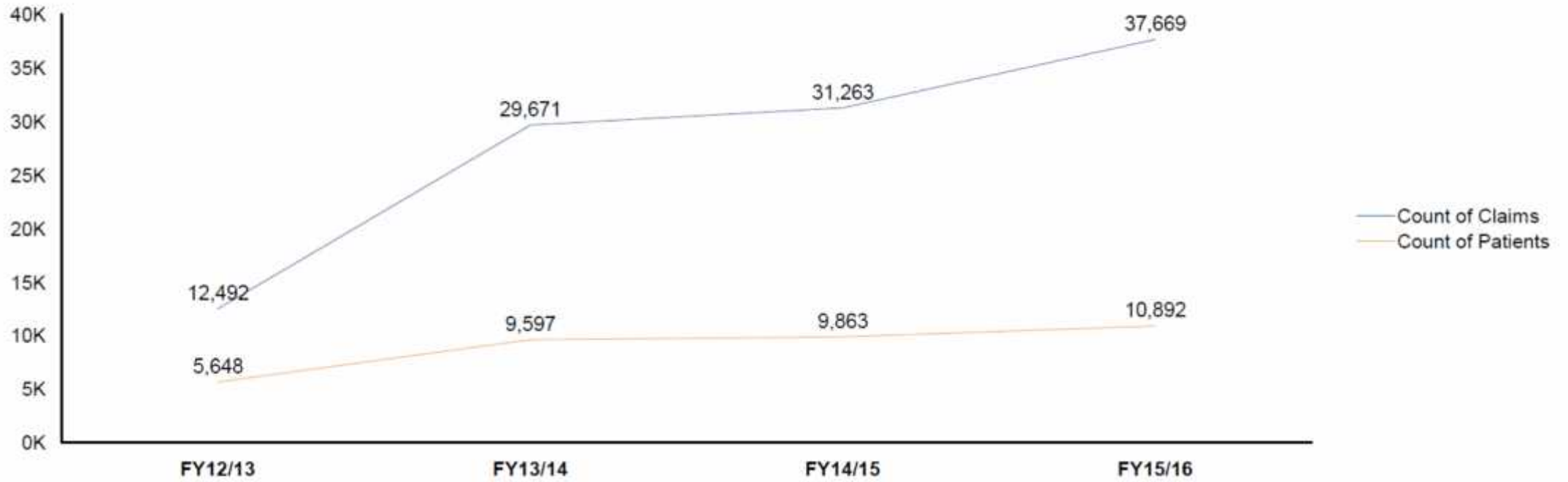


\$ 55 000



# All Dates - PTSS Trend by Approx Count of Claims and Patients by Fiscal Year

Darling Downs - Jan 2013 to Jun 2016



Graph 2