



PIPS Update and Vision

25 Years of Pacific Island Pacemaker Support Services

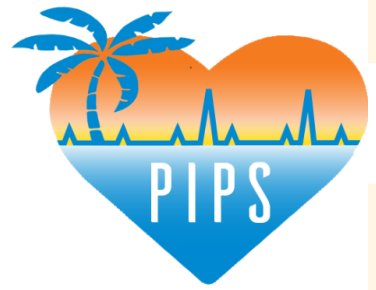
Fiona Riddell
PIPS Chairperson



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Historically

Fiji patients had pacemakers implanted by

- visiting cardiac surgical teams
- referred overseas to NZ/Australia/India

Overseas referrals funded by

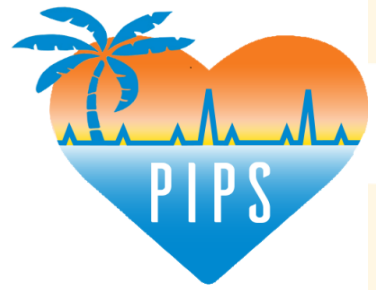
- patient/family self funding
- insurance
- FJ MoH

Green Lane Hospital

- checked Fiji pacemaker patients via trans telephonic system
- identify need for replacement or pacemaker malfunction
- few proceeded to pacemaker replacement

April 2001 request for someone to check pacemakers during Open Heart Fiji Cardiac Surgical team visit

- no-one else available to go
- no funding
- 2 weeks to organise
- ventured into the unknown



First Fiji visit April 2001

Changing international device standards

- 5mm / 3.2mm long pin / IS-1 / VS-1
- needed full range of header blocks / leads / adaptors
- all stock expired

Simple plan

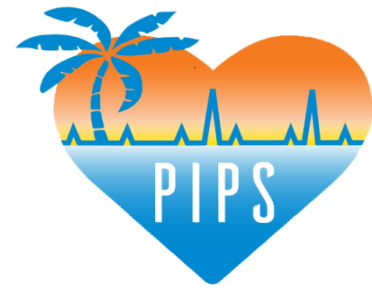
- check all known pacemaker patients
- assess need for replacement
- assist in any required new implants and replacements

Far from simple

- no implant information
- all patients need a CXR
 - X-Ray ID codes – device manufacturer and model
 - lead polarity - bipolar vs unipolar
 - pacemaker vs ICD
- extraordinary amount of time to complete each check

Patients

- many on clinic list deceased
- huge variety of manufacturers/models/lead connectors
- end of service behaviour or non-functioning pacemakers & ICD's



First Fiji visit April 2001

Cardiac surgical team

- GA for all pacing procedures
- resulted in ventricular standstill
- common to implant during CPR

Difficult to match available devices to range of implanted leads

- added down-sizer adaptors
- removed up-sizer sleeves
- different sized screwdrivers for older units
- some leads not identified

Volume

- 39 checks
- 3 new implants
- 6 replacements
- cardiac team unhappy with the increased workload



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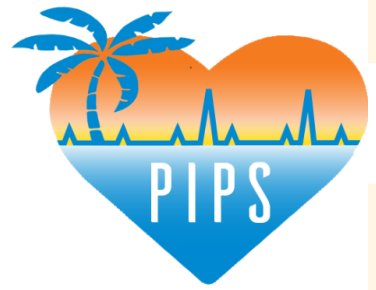
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First Cardiologist 2006





Evolution of Fiji visits

1. First 6 trips with Open Heart Fiji (Australia) team
2. Subsequent trips with FOFHF (NZ) team
3. FOFHF operated at Lautoka Hospital
 - relocated to CWMH (Suva) following fires in Lautoka Hospital theatres
 - discovered the CWM Cath Lab
 - subsequent pacemaker surgery only in CWM Cath Lab
4. Clinic expanded to match growing patient numbers
 - increased duration
 - Lautoka & CWM hospitals
5. 2008 NZ EP community committed ongoing support
 - additional team members
 - beginnings of PIPS
6. Medtronic donated pacing stock
7. 2016 second annual trip added
8. 2019 donation of a laptop & Paceart Optima



Pacific Islands Pacemaker Services (PIPS)

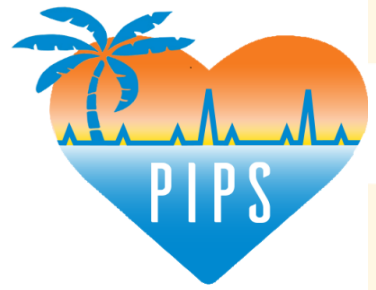
- Established in 2018
- Is an organisation of volunteers
- Objectives
 - a) to provide cardiology services to the Pacific Islands to implant heart pacemakers in patients that require them; patients are to be referred by the local medical services
 - b) the services may be provided in collaboration with Friends of Fiji Heart Foundation and/or Heart Rhythm New Zealand
 - c) to train local clinicians in the medical procedure and follow-up after pacemaker implantation to enable some local sustainability in the future
 - d) to recruit and retain volunteer cardiologists, nurses and cardiac physiologists to provide this voluntary medical service in any given year
 - e) to obtain donations of devices/equipment from medical supply companies
 - f) to obtain charitable donations to cover core expenses and expand the programme



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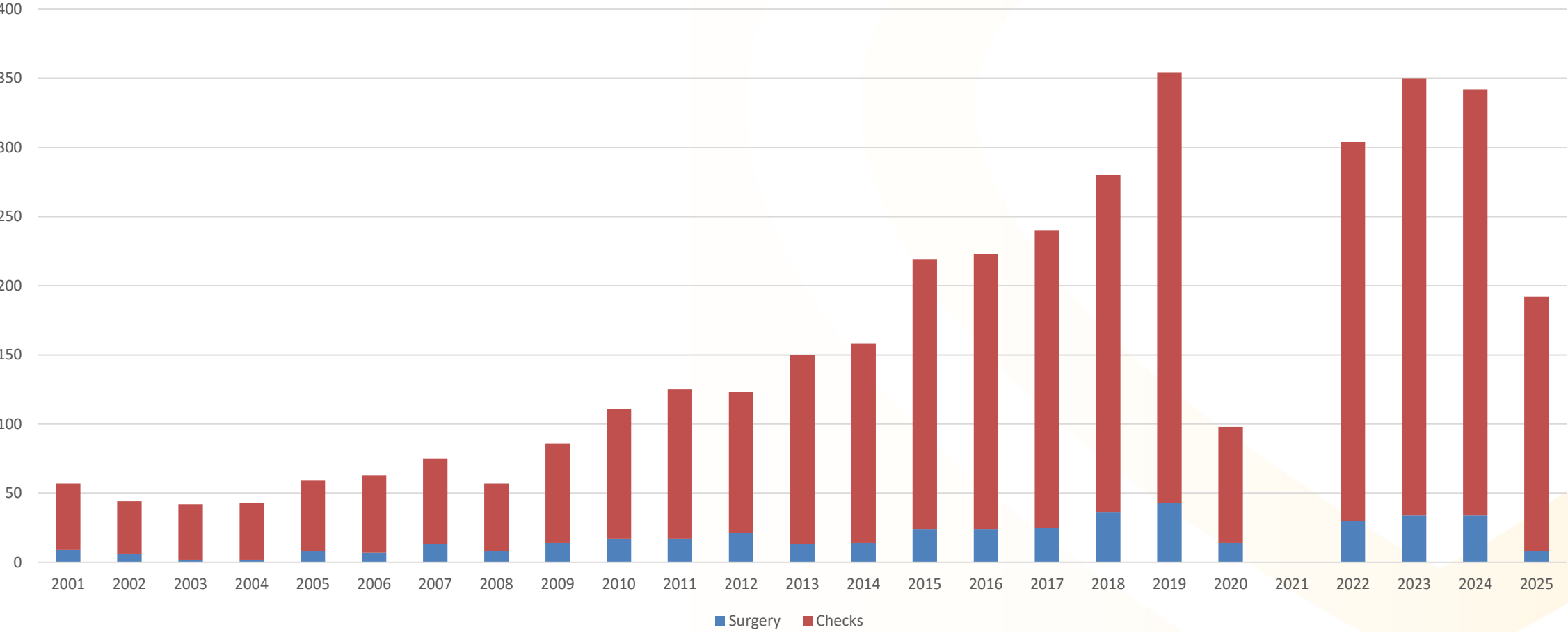


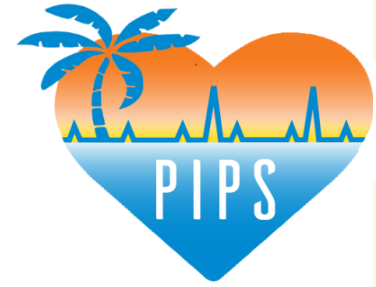
Fiji local team implanting during Covid





Fiji Pacemaker Surgery & Clinic Checks





The number of patients who are lucky enough to have a pacemaker implanted by our visiting teams is very small compared to the actual need in Fiji

- Patients die waiting for team visits
- Pacemaker implant rates 2021*
 - Australia 755/million/year
 - NZ 446/million/year
- Actual need in Fiji estimated to be 300 pacemakers/year
- To meet the immediate needs of Fiji estimate 100 pacemakers per year is required
 - unsustainable on a donation basis
 - 2022 submission to FJMoH for urgent funding of 100 pacemakers per year
 - 100 pacemakers & leads purchased & delivered in 2023
 - approximately 20 remain; request for next purchase is in process

*The Australian and New Zealand Cardiac Implantable Electronic Device Survey, Calendar Year 2021: 50-Year Anniversary 2023 Feb;32(2):261-268..

[Harry G Mond](#)¹, [Ian Crozier](#)², [J Graeme Sloman](#)³ doi: 10.1016/j.hlc.2022.09.016. Epub 2022 Nov 10.



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25 years of Pacing in Fiji

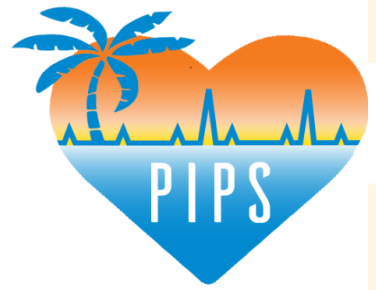
In clinic & post surgical checks	3372
PIPS visits pacemaker / ICD surgery	423
Fiji local team pacemaker implants	70
EPS	7
Pacemaker/ICD clinic patients	284



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Samoa, Tonga & Vanuatu

Small number of patients have devices implanted in NZ

- usually in private hospitals (Auckland)
- under very limited funding schemes
- committee review for all OS Medical Treatment

Samoa

- clinics started in 2015
- first pacemaker surgery in 2024

Tonga

- clinics started in 2016
- first pacemaker surgery in 2018 (unit replacements)
- first pacemaker implants in 2023

Vanuatu

- clinics started in 2019
- first pacemaker surgery 2024

Funding provided by NZMTS (administered by PMAG)

- still need donated supplies
- operate in theatre using portable image intensifier



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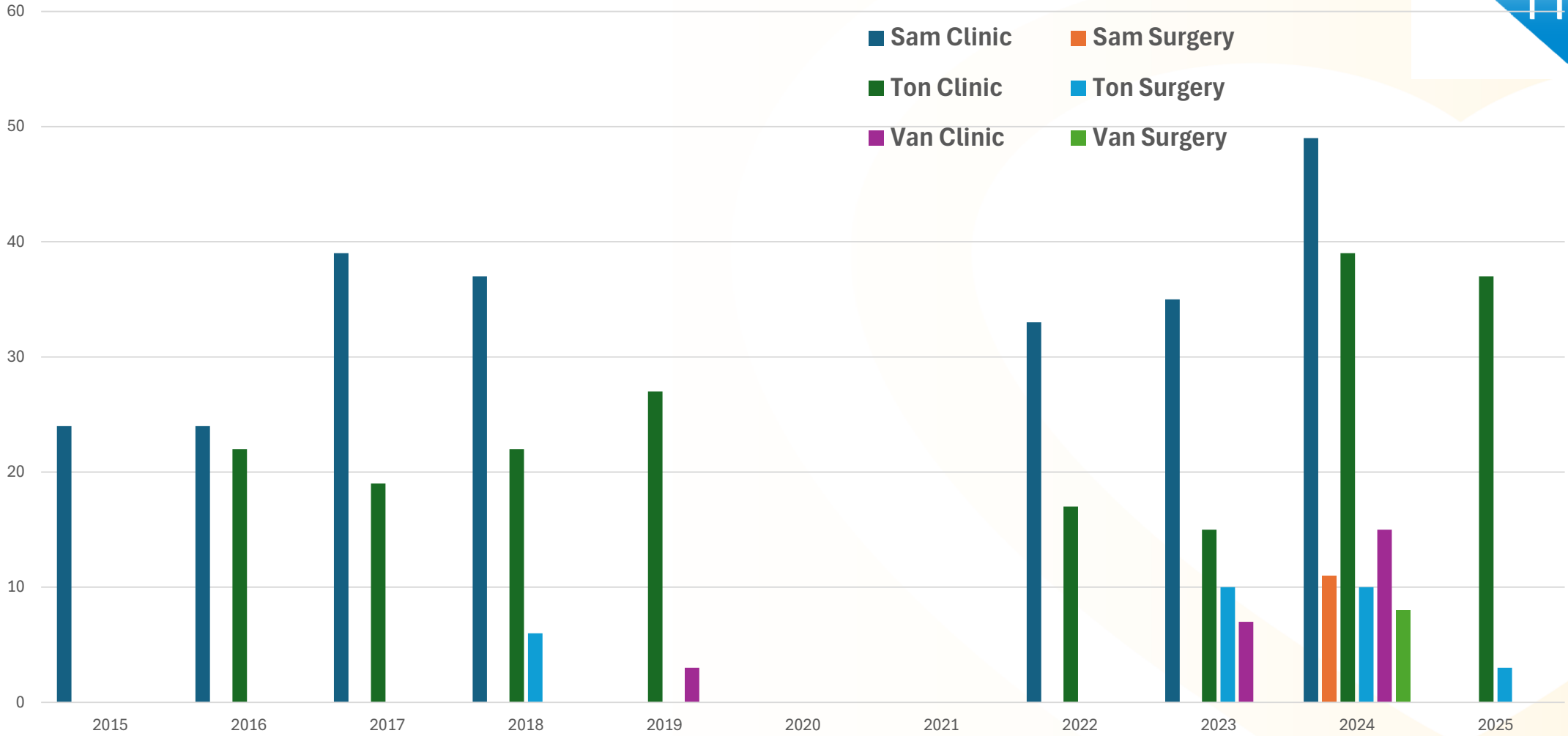
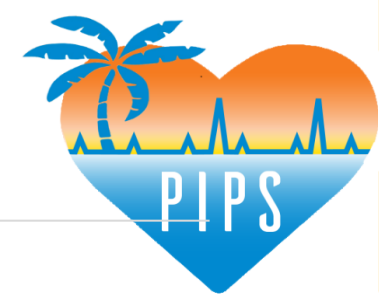
Matangi Tonga

Six Tongans are undergoing pacemaker surgery at Vaiola Hospital for the first time, performed by a team of volunteer medical practitioners from New Zealand on 15-16 August, marking a historic moment for health in Tonga.





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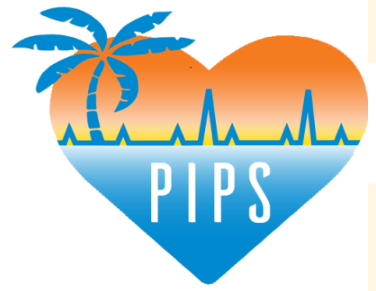




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Device support outside of the visits

Remote monitoring

- Poor cellular coverage
- Unreliable power
- Telecommunication providers change agreements
- Technology changes 3G/4G, obsolete monitoring
- Apps not the solution
- Troubleshooting and replacement of faulty monitors
- Communication with patients

Remote Interrogation





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Challenges

Limited resources

- matching patients to limited number of devices
- advance planning donations for replacement of ICDs
- donated supplies / expired supplies
- local supplies of medication (sedation, antibiotic, local anaesthetic, contrast)

Funding

- NZMTS funding
- funding for Fiji visits (airfares, accommodation, freight costs)
- ongoing fundraising activities (protein bars, marathons)

Planning & logistics

- changing Customs processes
- turnaround between trips

Sustainability of CWM Cath Lab

- second purchase of pacemakers
- vulnerability of team
- struggling to gain funding & certainty from FJMOH



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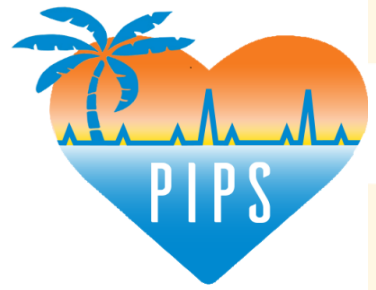




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The success of PIPS

- Highly skilled team members, safe practice
- Teams are a mix of experienced and novice members
- Adaptable to environment & equipment
- Respectful to each other & local staff
- Passing skills to local teams
- Committed to making a difference



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Future

Long term partnerships

- established with Medtronic / FOFHF
- need an MOU with FJMOH
- need to establish long term sponsors for other supplies & Fiji airfares / accommodation

CWM Cath Lab should be the hub of the Pacific

- other islands too small to be self sufficient
- must be appropriately funded including staffing
- able to accept acute referrals

PIPS team ongoing visits

- Pacemaker clinics
- unit replacements / ICD procedures / lead replacements
- continue pacemaker implants in the other islands
- EPS