

# PEARLS

POCUS for Emergency and Acute Care  
in Resource-Limited Settings

Welcome to our  
**Monthly Newsletter**

**PEARLS  
turns TWO!**

Thank you ALL for  
your incredible  
work!



## REMINDERS

Upcoming:



**Monday 19th August  
+7AM GMT**

Image Review Session  
Dr Jono Henry  
<https://unimelb.zoom.us/j/89171569520>  
PW: 584496



**Monday 2nd September  
+7AM GMT**

Monthly Lecture series  
Prof Gillian Whalley  
Topic: Rheumatic Heart  
Disease screening  
<https://unimelb.zoom.us/j/81618424483>  
PW: 316519

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& developments

# Message from Jono



Dr Jono Henry

I read an interesting book recently: 'The Business of Changing The World' by Raj Kumar. It was largely focussed on the UN's Sustainable Development Goal of ending extreme poverty by 2030. Raj outlines the emerging world of New Aid, exemplified by practices such as:

- Be transparent and 'open source' - publicise what's being done, and what is/isn't working, in real-time
- Undertake continuous monitoring & evaluation using dashboards, so projects can be adapted on-the-fly, and targeted adjustments made in under-performing areas.
- Ask, and then respond to what those on the ground actually want
- Acknowledge and own up to errors
- Leverage cutting-edge technology and improving global internet connectivity to empower people
- Undertake audit and research in order to be data-driven, rather than merely acting with good intentions
- Be prepared to take risks and innovate

Though it is still early days, I believe that PEARLS is progressing towards embodying many of these principles.

As we turn 2 this month, it's incredible to reflect ... we are teaching clinicians globally to press a fairly small cheap device against patients' skin - and literally SEE inside their body in real-time!! Say what you want about our world getting crazier and crazier in 2024 - but the confluence of affordable high-quality handheld probes, user-friendly cloud uploading platforms, and improving WiFi/mobile data access makes this a truly historic moment to push our movement forward. I thank each and every one of you engaged in creating our journey together.

## Vacancies

PEARLS has mini-teams working on various projects in the background. We are on the lookout for anyone interested in contributing in these fields:

### HIGHEST PRIORITY:

- **PEARLS Fundraising team - sponsorships and grant applications**
- **PEARLS Tech Support team**
  
- *PEARLS Country Leads & Local Leads - spots open for senior leads and junior partners in multiple countries*
- *PEARLS Publicity, Marketing & Social Media team - coordinating social media accounts, promotional presentations, articles & website*
- *PEARLS Industry liaison*
- *PEARLS Remote Coaches*
- *PEARLS Cloud Coordination team - supporting Dr Ivan Chan*
- *PEARLS Lecture Series - speaker recruitment and coordination - partnered with medical student team*

To enquire or request a Position Description, please email us at [pearls.enquiries@gmail.com](mailto:pearls.enquiries@gmail.com). Many positions are open to medical students as well, often in partnership with a senior lead.

# A brief timeline of PEARLS's history



**AUGUST 2022**  
INAUGURAL PEARLS-ED  
WORKSHOP IN VANUATU  
**4 FACULTY AND 10  
LEARNERS.**



**MAY 2023**  
SECOND PEARLS-ED  
WORKSHOP - IN TONGA  
**5 FACULTY AND 11  
LEARNERS.**



**NOVEMBER 2023**  
PARTNERED WITH DR LEWIS  
MCLEAN AND THE ICU  
COMMUNITY TO LAUNCH THE  
PEARLS-CC WORKSHOP. THIS  
OCCURRED IN PNG ALONG WITH  
A PEARLS-ED COURSE  
**5 FACULTY AND 20 LEARNERS.**



**MARCH 2024**  
OUR FIRST EVER 'PEARLS  
RETURN TRIP' - TO  
VANUATU  
**6 FACULTY AND 23  
LEARNERS.**



**MAY 2024**  
OUR FIRST RETURN TRIP TO  
TONGA TO DELIVERY BOTH  
PEARLS-ED AND PEARLS-CC  
WORKSHOPS TO OUR LEARNERS  
**6 FACULTY AND 11 LEARNERS**



**JUNE 2024**  
FIRST 'SCOUT' SENT TO  
HONIARA, SOLOMON ISLANDS  
TO ESTABLISH INITIAL  
REMOTE TRAINING TO **4  
LEARNERS**



**AUGUST 2024**  
PEARLS IS EXTENDING BEYOND  
THE PACIFIC ISLANDS AND  
DELIVER THE FIRST PEARLS-ED  
COURSE IN BOTSWANA, PLUS  
THE FIRST PEARLS-CC COURSE  
IN FIJI.



# PEARLS IN NUMBERS

Dr Ivan Chan - PEARLS Cloud Coordinator and PEARLS Research team



## 76

Clinicians Trained

## 26

QA image reviewers on cloud

## 24

Clinicians who've travelled to teach PEARLS

## 34 + 6

Butterfly probes linked to cloud: Distributed through funding support of partners + self-sourced or funded by local health system

## 703

Studies uploaded to cloud

## 8

In-person workshops across 3 countries (5 PEARLS-ED, 3 PEARLS-CC): Vanuatu, Tonga, PNG



## Top 5 learners

Ranked by the number of successfully QA-ed uploads in the previous month.

1 - Dr Lawrence Boe



2 - Dr Ellison Bradley Manegehe



3 - Dr Ignatius Koukouras



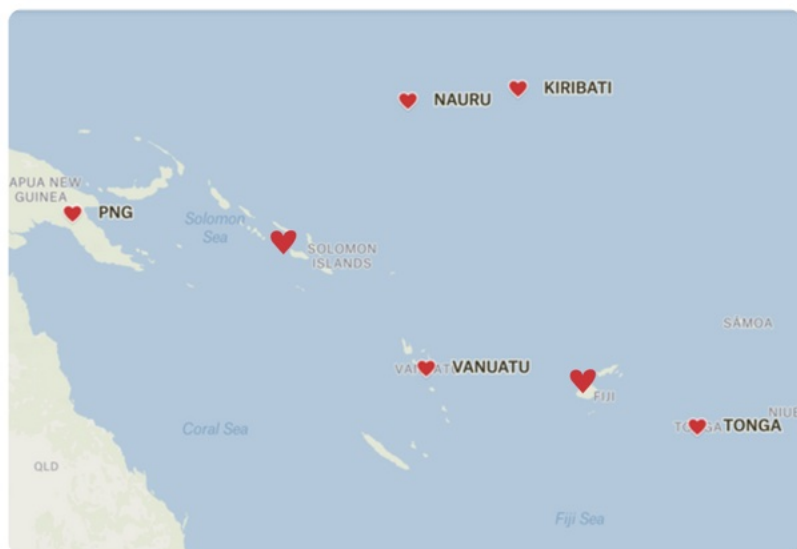
4 - Dr Josefa Tama Tokon



5 - Dr Losimani Taufa



Super amazing everyone! Keep up the great work and we look forward to reviewing more scans this month! 🙌



## 11

Learners began PEARLS training through remote coaching - from PNG, Kiribati and Nauru and Solomon Islands

## 20

Number of educational videos on Youtube channel

## 333

Number of social media followers including Twitter, Youtube

# People of PEARLS: Jo McCann

*For this special edition, we are featuring Jo McCann, one of our core faculties and a member of the steering group.*

*Jo is a sonographer extraordinaire who is concurrently serving multiple roles including President-elect of ASUM, Clinical Lecturer at the Otago School of Medicine, RAD-AID Program Manager of the South Pacific, among others. We have been extremely fortunate to have Jo as part of the PEARLS initiative from the very beginning of our journey. She has been an avid supporter and teacher for PEARLS, travelling multiple trips to teach PEARLS-ED courses in Vanuatu, PNG, Tonga as well as the upcoming workshops in Solomon Islands.*



*Jo and the team at the very first workshop in Vanuatu, 2022*



*Jo receiving her 'Sonographer of the year New Zealand' award by the Australasian Sonographers Association in June 2024*



I have been involved with PEARLS since the first visit to Vanuatu in 2022 - answering Jono's call for clinicians to donate Butterfly transducers. As I did not own a Butterfly I offered my POCUS teaching skills instead. I have been amazed by the huge growth since that first visit in 2022 with extra countries added, remote coaching, along with the development of PEARLS-Crit Care, PEARLS Lecture Series, YouTube channel, and of course the PEARLS newsletters.

I strongly believe that everyone deserves access to ultrasound, no matter where they live or what their personal circumstances may be. This belief has guided me through my career as a sonographer and ultrasound educator where I have actively sought opportunities to share my knowledge. PEARLS is a wonderful inclusive programme to be involved in, and its strengths lie in the multi-disciplinary nature of the team, and the post-course follow-up via the Butterfly cloud.

The local clinicians I work with through the PEARLS programme are inspiring. They attend the PEARLS ultrasound courses with a range of skills but leave being able to undertake FAST, early pregnancy, echo and lung ultrasound examinations. Quite amazing really, and a testament to their dedication.

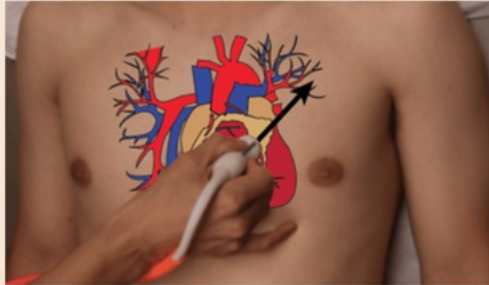
My involvement with PEARLS also offers me the opportunity to work with the local sonographers, offering support and extra education where possible through other Outreach programmes I am involved in - RAD-AID South Pacific, ASUM Outreach and WFUMB. They are enthusiastic, eager to learn extra skills and improve the local ultrasound service for their patients.

Thanks to Jono for his vision and including me in the PEARLS journey. It truly enriches my life!

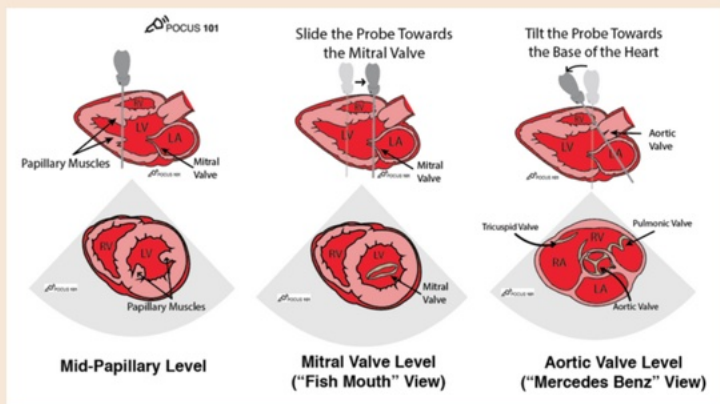
*Jo McCann*



## Tips of the month: Parasternal Short Axis (PSAX)



Hand and probe positioning



PSAX view structures - illustration

- **Step 1**  
Place the probe in the PLAX position (4th intercostal space with probe indicator towards patient's right shoulder)
- **Step 2**  
From the PLAX position, rotate the probe 90 degrees clockwise to point the probe indicator towards the patient's left shoulder - this will show the **Mid-Papillary level**
- **Step 3**  
To get the **Mitral Valve level**, sweep the transducer towards the sternum - towards the mitral valve (base of the heart)
- **Step 4**  
To get the **Aortic Valve level** from this point, fan the beam further towards the right shoulder.



### Fun Fact



The mitral valve resembles a fish mouth - while the aortic valve leaflets resemble the Mercedes Benz sign!

Reference: <https://www.pocus101.com/cardiac-ultrasound-echocardiography-made-easy-step-by-step-guide/> (accessed 13/7/2024)

## Monthly Image Review session

The Monthly Image Review sessions are hosted by Dr Lewis McLean and Long Nguyen, on the **third** Monday of each month at +7AM GMT.

For July, we went through great cases using eFAST scans in patients with significant intra-abdominal fluid from TB polyserositis and CKD, and a patient with obstructed bladder.

One of the cases was conducted by Dr Jemimah Masin on a patient with TB polyserositis presenting with pendulous abdomen, uncomfortable for pelvic scan. There are prominent signs of free fluid in multiple views - a great case to see classic indication of ascites around the liver tip (Image 1) and pleural effusion (Image 2).

We look forward to seeing you at the next Monthly Image Review session on Monday 19th August.

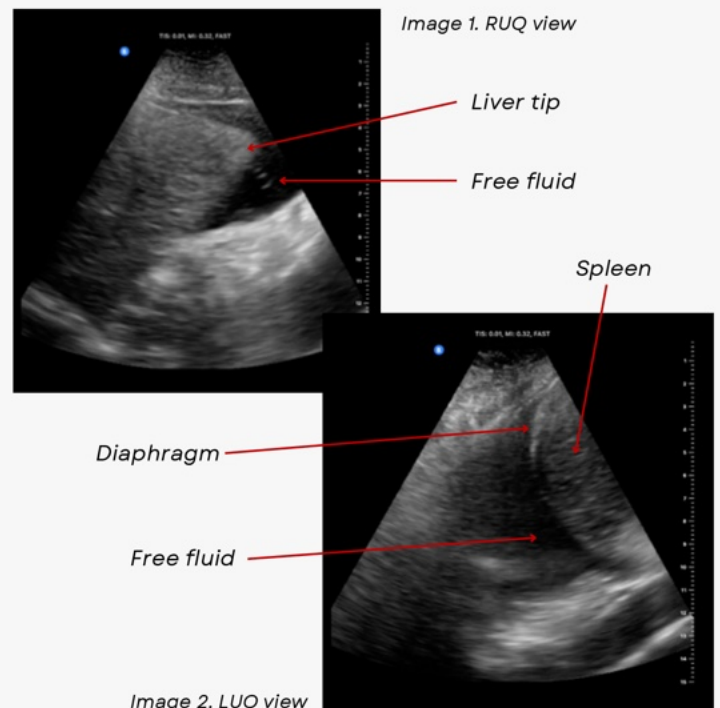


Image 1. RUQ view

Liver tip

Free fluid

Spleen

Diaphragm

Free fluid

Image 2. LUQ view

# ID cases from around the world



PEARLS has had the honour and pleasure of continuing to collaborate with more and more like-minded organisations and individuals around the world in driving the uptakes of POCUS in clinical practice in resource-limited settings. For this edition, we would like to introduce the new segment 'ID cases from around the world' which features cases contributed by ID specialists Dr Tom Heller and Dr Francesco Taccari.

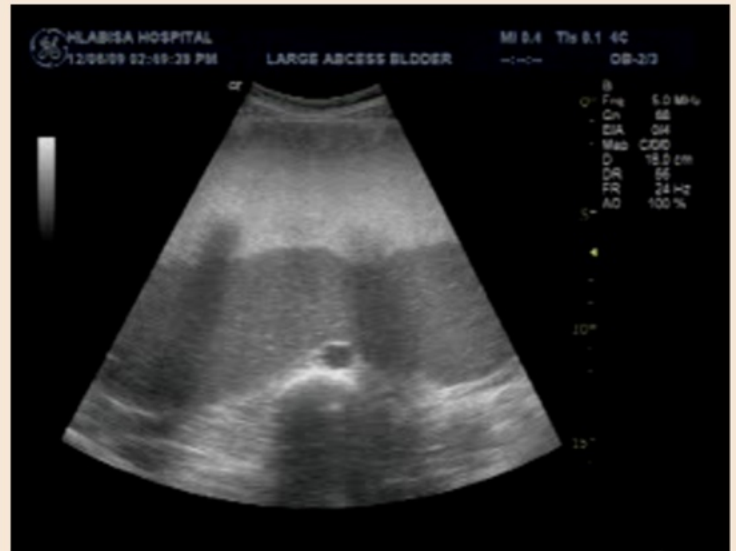
An HIV-negative young woman was seen in Southern Africa. She reported that she was pregnant as her abdomen was swollen for two years but "there was no baby coming". She otherwise felt well, no fever, no weight loss.

**Question 1: What do you think could be the most likely diagnosis?**

- a) pregnancy (overdue)
- b) large abscess or possibly bladder empyema
- c) large echinococcal cyst
- d) dermoid tumor
- e) ascites

**Question 2: Do you see the "shadows"? How could these be best explained?**

- a) calcifications
- b) gas
- c) bony parts and teeth
- d) air



Transverse view of her abdomen

## Answers:

The correct answers are 1 (d) and 2 (c).

It is a cystic tumor with a fluid-fat level. This "layered fluid" is due to different densities ("fat floating on top of water"). Ovarian dermoid tumors are among the most common ovarian neoplasm. These slow-growing tumors contain elements from multiple germ cell layers. They tend to be identified in younger women, typically around the age of 30 years or below. Most lesions are unilocular.

There is a wall around the structure, and there are no intestinal loops inside, so it is unlikely to be ascites. Abscesses can get large (although rarely that large), but they would likely be associated with clinical inflammatory symptoms.

The shadows are caused by echodense material (calcified bones, teeth or hair although not visible itself). The phenomenon is called "iceberg sign": echogenic, shadowing components that obscures deep structures: the tip of the iceberg sign.

The large tumor was removed surgically (image) and the diagnosis confirmed.



# Upcoming Events & Developments

## PEARLS Workshops

- **August 22-23** - PEARLS-CC to be delivered in Suva, prior to the Pacific Society of Anaesthetists' Annual Refresher Course  
(<https://www.psaonline.info/event-details-registration/psa-annual-refresher-course-2024-2>)
- **Early Oct 2024**: PEARLS course before and/or after Nepal NEMPHE Conference 2024 in Kathmandu
- **Early Nov 2024**: First in-person PEARLS workshops in Honiara, Solomon Islands
- **Nov 18-22 2024**: PEARLS Samoa
- **Late Nov 2024**: We're hoping to hold a PEARLS refresher course around the PMA conference (26-27th Nov) in Christchurch - if travelling, make sure to bring your probe!

## Other updates

- **14th September**: Dr Jono Henry is presenting on 'Rural Ultrasound Training - lessons from the PEARLS global health project' at ACEM's Victorial Annual Conference 2024  
<https://acemvicconference.arinex.one>
- **22nd-23rd Nov**: Dr Matt Born is presenting virtually at the WINFOCUS World Congress 2024 on the topic of "POCUS for abdo pain in resource-limited settings".

## External events:

**9-10th September 2024**: The Global Emergency Care Conference is a 2-day in-person and virtual conference focusing on global emergency skills building and symposia. Delegates from low and middle-income countries can apply for a full-fee scholarship, **Application deadline is Wednesday 14th August 2024**.  
Registration link: <https://www.alfredemergency.org/course/the-global-emergency-care-conference>



## PMA Scholarships

**Dr Sitaleki Finau Scholarship** - \$10,000 will be awarded to one Indigenous Pacific medical trainee sub-specialising in Public Health with an interest in Pasifika community-led research yielding convincing evidence to implement a public health project.



**The Sir Terepai Tuamure Maoate International Study Award** - \$20,000 will be awarded to one Indigenous Pacific-based Doctor or Nurse that has been enrolled and accepted into a course at an international institution for study.

**Dr Joe Williams Scholarship and Dr Robert Woonton Scholarship**- Each scholarship will award \$10,000 to one Indigenous Pacific medical training in their first or second year of specialist training.



For more information and to apply, please visit:  
<https://pmamembership.org.nz/scholarships>



Afternoon in Honiara, Solomon Islands - June, 2024

## SEND US YOUR STORIES AND PHOTOS

We would love to be able to share your photos and stories from PEARLS workshops or remote-coaching sessions, of you using the Butterfly probes in clinical practice or anything associated with PEARLS.

Have a message for your coach(es)? Successfully master a difficult scan? Scan something impressive? Wearing scrubs that fashionably match the probes? Or anything that excites you!

Please send them to [pearls.enquiries@gmail.com](mailto:pearls.enquiries@gmail.com). 😊



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**Youtube:** [www.youtube.com/@PEARLS\\_POCUS](https://www.youtube.com/@PEARLS_POCUS)

**X:** [www.twitter.com/PEARLS\\_POCUS](https://www.twitter.com/PEARLS_POCUS)

**Website:** Coming soon!

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