

Report Kanabea visit, Kotidanga Rural LLG, Kerema district, PNG June 2019

I. Kanabea visit 2019 comprehensive report.

We visited Kanabea hospital with a team of five persons from Australia from 25 April up the seventh of May 2019.

Team leader was John Ward, director PNG Foundation, accompanied by Janny Goris public health dietitian, husband Jan Zomerdijs general practitioner, Sue Auchter nurse practitioner and husband Graham Auchter plumber/handyman.

Reports

Report Dr Jan Zomerdijs:

1. Graham Auchter repaired multiple taps and toilets in the hospital and staff hoses. He also installed the following items in the hospital

1 Four Solar barn LED lights in the wards and in the delivery room, that have a built in lithium battery and a small solar panel fixed on the roof, and should last at least three years. They can be turned on with a remote control we gave 4 of them to Sam Laurie: one to be used by the nurse on duty, the other 3 kept in reserve with Sam. It has already proven to be very useful for the delivery room at night

2. A separate solar light system in the theatre that consists of a large 120 WAh power battery with two solar panels with total of 160 Watt mounted on the roof. It connects to 6 LED light bars in the theatre room. The battery is installed in the old x-ray department and locked away to make sure it is not displaced, stolen, or used for other electrical items that can exhaust the battery.

We plan to extend this system with a DC power fridge next year.

alternative is to request UNICEF and NDoH (Dr Mathias Baure) to supply the most recent Solar direct drive vaccine refrigerator. As the old North Coast Vaccine fridge dates back from 1993, is too small and needs to be replaced.

3. We installed 4 soap dispensers in the OPD, the general ward, delivery room and a theatre washing section we have filled them with disinfectant soap we suggest that you can use Betadine soap to refill the soap dispensers. We have instructed staff how to open the soap dispensers when you refill. It uses a small metal lever, hangs above the soap dispenser in theatre

4. Sue Auchter who is a nurse practitioner has done extensive cleaning of all surfaces in theatre and instructed staff how to clean surgical instruments and properly prepare trollies in theatre

5. A serious concern is the finding that none of the instruments can be sterilised because of lack of proper sterilising packs they went out of stock almost a year ago.

Items are not sterilised at all, even steaming or boiling was not done. meaning that all procedures can become cause of severe infection.

The following was advised and actioned.

- we have urgently requested for new sterilising bags at Areal Medical stores and given the completed order form to Bishop Baquero, who hopefully can bring them in on the next flight from Kerema.
- The small electrical steam steriliser that was bought by Sister Beulah should be used again it needs electricity and therefore the missions diesel generator has to be used for up to 1 hour, 2 times per week to deliver the needed electricity.

6. Obstetrics.

Oxytocin: we noticed there were eight ampoules of oxytocin in the delivery room that had already expired and not stored properly note that oxytocin has to be stored in the refrigerator when not used this has not been done

The vacuum extractor for vacuum delivery was a useful item, it should however be properly cleaned and be ready to use when needed.

We have added oxytocin as an urgent item to be ordered at Areal Medical Store Badili.

- During the 3 stages of delivery proper notes should be made and the partogram should be completed

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- As discussed for those who deliver in the hospital the Child health record book should be given to the baby and be completed
- For deliveries please record BP and temperature mother before delivery
- Please record babies weight and head circumference at time of birth and its length as soon as possible the next day to be recorded in babies health book
- Two baby/child weighing scales were donated; Baby scale up to 10kg and toddler weighing scale. Also 2 stadiometers were donated and installed. Education on use was provided.

Report Sue Auchter, nurse practitioner:

1. Hygiene

All work areas and storage areas in medical rooms must be cleaned regularly

-Procedure trolleys delivery bed and her surfaces must be cleaned before and after every usage or Particular attention to blood and body fluids spills.

Use trolleys for dressings and procedures in theatre where there is good lighting and clean trolleys had a good working hand rather than doing dressings in the wards.

- Theatre beds need to be cleaned daily before and after each procedure .use soapy water in a spray bottle that is quick and easy . mattresses in delivery room need to be cleaned on both sides every time after a delivery. baby bassinets need to be cleaned daily.

theatre procedures.

-use one trolley dedicated for use with infection procedures to limit the spread of infection to other areas

Staff please remember when using sterile gloves do not touch the unsterile areas when practising sterile procedures

Organise equipment and medications in theatre in such a way that they are easy to access and stored in the same place every time.

-all beds require scrubbing with soap or washing powder with a brush

If needed bandages maybe washed and reused only by the same patient if no infection.

But burns need a clean bandage for every dressing

- Instruments and kidney dishes etc are not to be left to dry out on the sink
- Separate trolley bench next to the theatre should be set up as a drying trolley covered with a clean drape on the trolley Prevent dust coming down on the washed items and become contaminated
- After procedures wipe down the used trolley and put all equipment away for cleaning and sterilising in the room next to the theatre

TB- isolation ward:

Two patients with pulmonary TB were admitted in this ward.one of them has open TB, still actively coughing, probably it was multi drug resistant TB

We noticed no masks were worn by nursing Staff when entering their room.

Please wear masks, it should be the white, fine particle face mask.

You take a huge risk of contracting multi drug resistant TB , if you don't protect yourself. Also, these patients should not wander off to public spaces and definitely not visit babies in the post delivery ward!

2. Hospital as a whole.

Make a flow chart to guide the following cleaning advice

To be signed and ticked off by the responsible staff member.

a. every three months cleaners need to do a full clean of all the ward rooms

That means a full room scrub, remove and scrub all the beds, scrub all the shelves and scrub the windows and wash all containers

b. Weekly tasks clean theatre beds following both sides of mattresses clean all the trolleys remove all the dust

c. Daily tasks dust all services using a duster .Wipe over all the trolleys at the start of the day . make sure the baby scales are cleaned

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3 medications and medical supplies to be stored in the same place on the boards for you to have any time to be kept clean and free from dust

Report Janny Goris, public health nutritionist/dietitian:

1. Planned training by National Department of Health Port Moresby for all Kotidanga Rural LLG staff and Kaintiba health staff for the month of July/August 2019. They will charter a SIL plane. Topics include a range of National Department of Health programs including: a. distribution of iodine and vitamin supplements for children 7 to 59 months and women 15 to 49 years; b. Use of supplements to address malnutrition, F100 (<6m) and F 75 (>6m) formula for infants and Ready to Use Therapeutic Foods (RUTF-plumpynut; children >1y); c. Handing out weighing scales and measuring board length/height of infants and training and instruction how to use these and record in the Child Health Book. d. Other NDOH programs.
2. NDOH will inform and request permission from Bishop Peter Baquero about training at Kanabea for all health staff. They will also invite all health staff from Kaintiba health centre and from Kunai health centre. Since phone reception at Kanabea is poor, NDOH will send a message to Kunai HC when the proposed training will be held. They will inform Kanabea asap (Manindi, CHW at Kunai and Ishmael's wife-live at Kanabea). Hopefully this request will come at least four weeks prior to the training.
3. Training duration will be one week. Held at Kanabea which is close to the airstrip. They will request accommodation for up to 6 NDOH staff members. Included will be a paediatrician and a gynaecologist/obstetrician.
4. It is proposed to use the distance education hall for the training. All meals will be provided for by NDOH and some compensation for travel and time of staff members. NDOH will bring iodine supplement capsules for distribution to Kotidanga Rural LLG: 1 capsule/year for children 7 to 59 months and two capsules/year for women 15 to 49 years of age.
5. Contacts for training and iodine supplementation and other NDOH programs and resources are Mrs Eileen Dogimab phone 7211 4200, edogimab@gmail.com Mr Wilson Karoke phone 7339 2805, wilson_karoke@health.gov.pg, Mr Otto Tean, NDOH planning manager, otto_tean@planning.gov.pg, dr Guapo Kiagi, obstetrician, gkiagi@hotmail.com.
6. Unicef is funding and organising for two medical students to go and implement and monitor iodine supplementation in Kotidanga Rural LLG. They will live at Kanabea for several weeks. Contacts in UNICEF are: Dr Hanifa Namosoke, Nutrition specialist, phone +67570316364 (mobile), +256701685722 (whatsapp), email hnamusoke@unicef.org; Dr Wisam Hazem, nutrition specialist and paediatrician, whazem@unicef.org and Ms Margaret Rombuk, phone 7196 315, mrombuk@unicef.org
7. Contacts UPNG, School of Medicine are: Prof Victor Temple, biochemistry templevj@upng.ac.pg, Prof John Vince, chief paediatrician, johndvince@gmail.com, Prof Georgia Guldán, Public Health, email gsguldán@gmail.com
8. Child health books 1,000,000 child health books have been printed. Waiting to be distributed by NDOH from AMS Badili, Port Moresby. We have raised several times with the National Department of Health the urgent need of distribution of these resources. They could have been used for registration of OPV in the current Polio vaccination campaign. We also raised this issue with NDOH and Prof John Vince.
9. Report discussion (Polio) vaccine and Child Health Book issues with Prof John Vince, paediatrician: all vaccine fridges in Gulf province should already have been replaced with vaccine solar powered fridges. Contact Dr. Mathias Bauri who is in charge of EPI matthiasbauri@gmail.com. Gulf province in general has been neglected for so long.
10. Ongoing research in the area of malnutrition and iodine deficiency across Kotidanga Rural LLG with UPNG School of Medicine and Iodine Global Network. Two papers have been published and two more are in publication. See publications <http://apjcn.nhri.org.tw/server/APJCN/26/4/665.pdf> and <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0197647>. A third one has just been submitted. Following this research UNICEF is now funding and implementing an

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intervention with micro supplementation for women and children in the area. See above

Primary school Kanabea

- a. We donated 25 soccer balls, pumps to inflate balls.
- b. Sue and Janny provided eight interactive education sessions on health, nutrition and access to safe water and importance of sanitation (pit toilet and hand washing) to all classes. Included a practical session on hand washing with running water and soap.
- c. Facilitated a meeting with 7 Kanabea school teachers, deputy principal Dixon Yovani, Richard Tornabene, chair school board, Quito Pane, chair P&C, Peter Nobeda, ward councilor and Fr John Billy. Discussed was the urgent need for proper basic sanitation and access to safe clean water for students. Requirements are a minimum of 10 pit toilets, access to two water taps and good handwashing. At the meeting there was much confusion and discussion about land, approval mission, funding, participation of parents and students in digging and providing timber. Local Aquila timber (=merbau) can be used as a palisander lining. The school has a little milling machine. Best is to make a concrete slab on top. Cement would need to be purchased. Current pit toilets next to airstrip need to be removed/relocated.
- d. Provision of 2 water taps should not be too difficult (Advice Graham). We need to order a big roll of polypipe. Furthermore two taps with handles that can be taken off and safely stored. Request Bishop to assist. Students can dig trench for polypipe.

On Tuesday 7th of May we felt a tremor in Kanabea. We later heard another earthquake with magnitude 7.2 Richter scale struck Bululo, 60 km west of Lae, Morobe province at a depth of 127 kilometres.

Medication supply and logistics planning 2019-2020

Information provided by Paul Piol, manager of the L&Z Enterprise in POM, responsible for the medical kits delivery to Southern region =push system (no orders needed).

L&Z Enterprise have also been contracted (southern region only) to deliver the AMS Badili orders(=pull, only delivered if order-form from health facility has been received at AMS) into Kanabea and other health facilities.

1. Push system: 100% Medical Kits.

Last Round 5 (HCK) should be delivered around April - May 2020. Round 1 (HCK) delivery end of 2019. Round 3 (HCK) delivery February-March 2020.

Note: ALL SUPPLY OF THE MEDICAL KITS DEPENDS ON WHEN THE KITS ARRIVES IN THE COUNTRY.

2. Pull System. All Medical Supplies for Gulf Province are delivered directly to the health facilities from Port Moresby (By Road, Sea, River & Air transports). For inland Kerema transport of medical supplies by road to Kerema and on chartered flights to the health facilities on the same day. L&Z doesn't store supplies in Kerema. If there are many supplies for the inland Kerema they do multiple charters. They stay in Kerema until all airfreights are completed.

AMS Badili, Port Moresby has the following Order Schedule for Provinces in the Southern Region:

- January - Central, NCD & Gulf Provinces
- February - Western & Milne Bay Provinces
- March - Central, NCD & Gulf Provinces
- April - Western & Milne Bay Provinces
- May - Central, NCD & Gulf Provinces
- June - Western & Milne Bay Provinces

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- July - Central, NCD & Gulf Provinces..... continue for the whole year.

When L&Z logistics commenced in July 2018 delivering AMS medical supplies, they discovered:

- a. the **Health Facilities are not ordering medical supplies from AMS and as result they are running out of stock.**
- b. Following the AMS Order Schedules , Health Facilities are to send in their orders for medical supplies 6 times a year.
- c. Throughout the country it is a great problem that Health Facilities are very poor in ordering medical supplies from AMS. This is very concerning.
- d. For Kanabea HC they received only once an order form and consequently only delivered once during during July 2018 to July 2019.
- e. Delivery is Not a problem. Receiving regular orders for medical supplies is a problem. It is important to send in orders to AMS one month before the due month.
- f. As per AMS Order Schedule, health facilities are allowed to order 6 times per year.

3. All Medical Supplies designated to the PHO are delivered direct to PHO in Kerema by road transport and any supplies for the Health Facilities from that particular supply it is the responsibility of the PHO to send to the facilities. eg. Vaccines.

II. Information, logistics and contacts

Local Government

Kerema district, Kotidanga Local Level Government. Estimated population is 20,000-25,000 people. There are 4 divisions in Kotidanga LLG: Middle Tauri, Hangoya, Ivory Swanson, Kapilope. Distance between these divisions may be up to 3 walking days. There are 20 wards in Kotidanga LLG. Kanabea is ward 1 of which Peter Nobeda is local councilor. Villages in Kanabea ward: Kanabea, Kiamdia, Hoyu, Mini, Kopiawa, Papakota, Oroke. This ward has an estimated population of 1080, census 2012. Kaintiba is on other side of the Tauri river and has a population of 11000. Some Kaintiba people use health services in Kanabea.

Kanabea Ward councilor is Mr Peter Nobeda. Kotidanga LLG manager is James Morova. He is based in Kerema. Member Parliament is Mr Richard Mendani.

Church

Cardinal John Ribat, MSC..Contact: abjribat@gmail.com phone +675 71613672.

Archdiocese Kerema is Bishop Peter Baquero: pbaquerosdb@gmail.com; phone +675 7050 3939

Kanabea: Current Sisters de Cluny are: Sr Pia, Sr Rashni (education) and Sr Beula (health centre). Acting Father is Fr John Billy Wasso. He is a lovely young 37y old Kamea, who knows the community very well. He is very active and visits neighbouring villages frequently.

Contact details Sisters de Cluny PNG: clunypng@gmail.com.

Sr Rachel is key contact for Sisters de Cluny Pacific: sjcrachel@gmail.com , phone +675 323 7225 and +675 7121 5862. Address: Sisters of St Joseph of Cluny Javouhey Home, Section 19, Lot 13, Budoa Avenue, Boroko, Papua New Guinea

Health

Gulf province provincial Health Advisor is Bennet Bal; Rodney Vai is his assistant. Contact details Rodney Vai: +675 79435543, E vaiirodney2@gmail.com

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Kerema district Catholic Health Services Secretary is Dorothy Hailareville. Contact detail: Phone 744448167 landline /fax 6481062. Assistant is John Joseph.

Rural Health Director Gulf province (general planning) is Mr Bonnie Moiso, phone +675 6481120 (land line) or +675 73990949 (mobile).

Department of Health Contacts:

dr Mathias Bauri, EPI manager Department of Health, Port Moresby E matthiasbauri@gmail.com

Ms Eileen Dogimab, Technical Adviser Nutrition and Dietetics, Family Health Services
E edogimab@gmail.com ; eileen_dogimab@health.gov.pg

Mr Wilson Karoke, Technical Officer, Nutrition Lifestyle, Family Health Services
Level 3, Aopi Building, PO Box 387, WAIGANI, NCD, Papua New Guinea
Phone: BH: +(675)3013727 / AH - Digicel: +(675) 73392805 / AH - mobile: + (675) 75835413
wilson_karoke@health.gov.pg
Ms Jennifer Mati Luvahike Jennifer_Luvahike@health.gov.pg

Shirly Gaiyer-Kore is the Manager for Pharmaceutical.

Kerema hospital, paediatrician is Dr Paul War, email paulwari8@gmail.com

Medical supplies

Distribution from the main storage point to a lower level store or health facility may follow the **push or pull system** or a combination of both. In the pull system medicines requests are sent from the lower level to the higher level. In the push system a limited list of products is pushed from the higher level of warehouse to the health facilities during a defined time frame. See [Medical Supply Reform Impact Evaluation](#) by DFAT, 2013.

AMS Badili

Mr Philip Posou <pposou@gmail.com> ph +675 73425733

1. There seems to be no shortage of vaccines at the AMS
2. AMS supply vaccines to the Provincial and District Vaccines Stores(PVS/DVS) and it is the provinces responsibility to deliver to its facilities. The health centres do not order vaccines directly from AMS but through the Provincial Vaccine Stores.
3. The Provincial Cold Chain Logistics Officer (PCCLO) is responsible for the Cold Chain Inventory for its province. Upon providing the Inventory, the EPI program provides ongoing support
4. The NDoH has a contract with L&Z Logistics who are the sole distributors of , Medical supplies gasses and other medical supplies in the southern region (see below). The Logistic company delivers medicine orders , but vaccins and gasses directly to the Health Facility
5. Mr Ben Bal is the Logistics officer for Medical Gases at AMS +675 72664622 (?)
6. Supplies Supervisor number at AMS is 73723104 Mr. Pala Oika

Mr Peninah Masu, E peninahmasu@gmail.com Mr Johnnie Arava, E jonniearava4388@gmail.com>

As at 2019, there are 4 logistics companies contracted by the Department of Health through the Pharmaceuticals branch to do the medical supplies distributions for the 4 regions in the country. These logistic companies report directly to the Pharmaceutical branch who deal with their payment

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and queries. Any questions or grievances from the health programs in terms of logistics are raised with the Pharmaceutical Unit. This unit deals directly with the logistics companies.

L&Z Enterprise is the logistic company that does the medical supplies distribution for all the health facilities in the Southern Region. (includes Gulf province)

L&Z Enterprise_Operations Supervisor is Mr Paul Piol, phone office +675 7386 8888, mobile +675 72615255

Email: paulpiolzpentpng@gmail.com

They are also responsible for the yearly distribution of the Medical Kits to Health Centres and APO. 's. The Medical Kits system is a so-called push system = standard number of medicines and medical items are sent to each health centre in PNG annually. See information above.

Kanabea received 19 boxes (round 4 of 2018) delivered only in April 2019 .by helicopter . they will deliver the 2019 -2020 rounds.=see information above in section II

LD Logistics

LD Logistics used to be the SOLE DISTRIBUTOR of Vaccines, Medical Gases and Medical Supplies from AMS POM to all the 22 provinces in PNG. Operations Supervisor is Mr Gabutu Ranu, phone +675 72267827.

Provincial Vaccine Store and Cold Chain Logistics Officer Under Provincial Health Authority Kerema

The Health Centre has no electricity, no Internet and very limited intermittent phone reception (Digicel is only provider). A solar panel providing power to a tower nearby was stolen. As a consequence phone reception is extremely poor.

Kotidanga Rural LLG health centres

Kanabea Health Centre (has 20 hospital beds)

Building totally dilapidated. No maintenance or repairs have been done for many years. Resources to do any repairs are totally inadequate. There is an abundance of air conditioning, including through missing/broken floorboards and walls.

HEO is still Jenny Willie (jennywillie@gmail.com), other nurse is Ricahrd Yaro,. Community health workers are: Max Pane, James Mako, Cathrine Morowa (she also is member of school P&C). Pauline Hurava, Angeline Yowani (sister of previous school deputy school principal Dixon); Ishmael Hoinguo. For cleaning, maintenance and translation: Alphonse H (should look after refilling batteries vaccine fridge with distilled H2O); Jeremiah Tobias, who looks after water supply; Philip Nambo. Pharmacy dispensary: Sam Laurie.

The clinic OPD is open on Monday to Fridays from 8.00 am-4.00 pm. Usually staff do not arrive before 9.00 am. Ward rounds 9.00 am.

Immunisation on Tuesday and Thursday. Antenatal clinic on Tuesday.

TB-clinic and TB sputum-testing on Thursday.

Since 2 years out-clinic visits have been discontinued. If available, vaccinations are done at Outpost clinics by APO's =Aid Post Orderly who have a very basic medical training. They should have some supply of medication.

Kunai Health centre

Neighbouring Baptist Mission US 'That they may know' in Kotidanga (2 hrs walking from Kanabea).

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The easiest and fastest contact They run the Kunai health clinic. Contacts: Manager is Sarah Glover, phone +675 79881954, email sarahjglover@msn.com or Sam and Marybeth Snyder, phone +675 7271 2536, email snyder.samandmarybeth@gmail.com. They have electricity (solar system) and satellite internet and phone. They travel regularly to Kanabea where they also use the airstrip. We always use them to communicate with Kanabea health centre/hospital.

Community health worker at Kunai HC is Menandi. She is married with Ishmael, CHW at Kanabea. She lives at Kanabea and walks daily to Kunai HC.

Very useful contacts are John and Lena Allen, based in POM:

John Allen johnallensr@gmail.com

Lena Allen lenaallen@yahoo.com

Kamina Health Centre

- OPD from Monday to Fridays from 8.00 am-4.00 pm.
- Under five clinic and antenatal clinic, including vaccinations

Kaintiba Health Centre

On the other side of the Tauri river. CEO is Mr Tobias Uketango, phone +675 72839190.

Major issues medicine and vaccine supply

The delivery of basic medical supplies by L&Z logistics was done in April 2019 . Vaccine supply was done over 12m ago. At the moment low stock of Pentavalent. OOS : antibiotics Amoxicilline, Doxycycline, Co trimoxazol, Ethambutol, rifampicin,

Before departure and after returning from Kanabea to POM we met with the Department of Health, with Ms Eileen Dogimab (edogimab@gmail.com) and Mr Wilson Karoke (wilson_karoke@health.gov.pg). Other relevant DoH contact is: Mr Maluo Magaru <maluo_magaru@health.gov.pg>. We also communicated with the Chief Paediatrician, Prof John Vince (johndvince@gmail.com). See above. The Polio SIA program, Supplementary Immunisation Activity was funded by UNICEF/WHO/GAVI/DFAT and others. Routine vaccination should continue as usual. Based on information from Prof John Vince, a Measles and Rubella vaccination campaign will be conducted later this year. Details yet to be released.

Child health and vaccine supply

Immunisation

Referring to the PNG protocol. The following remarks:

- as 95% of children are born at home, no BCG and Hep B are given until the mothers visit the clinic which can be several months/years after birth. The rest of the PNG scheme is followed. The pneumovax at 1-2-3 months is now available in PNG,, however has not been delivered (yet). One also wonders how many children get 2 measles shots at 6-9 months.
- It would be better to go back immunising measles with a single shot at 12 months for late-comers, also not clear why no Booster immunisations are done at age 4 y to improve measles coverage for the population.
- No MR vaccine is provided to children entering school as per PNG immunisation scheme.
- Solar powered vaccine fridge (26 years old) from North Coast, Qld, Australia, installed by AusAid in 1993. It is however very small. As the cold-chain is always a big concern, we would like to investigate whether NDoH, UNICEF, WHO or GAVI can potentially assist in getting a new WHO approved Solar powered fridge (no need for batteries) for Kanabea, eg Solar direct drive refrigerator <https://sundanzer.com/product/bfrv55/>. As per info from Prof John Vince all vaccine

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fridges in Gulf province should already have been replaced with vaccine solar powered fridges. Contact Dr. Mathias Bauri who is in charge of EPI matthiasbauri@gmail.com

- 'Child health record' book-after limited supply out of stock again. Adequate registration and monitoring of growth and immunisation, in the absence of a child health record is impossible. One million of Child health books have been printed. Waiting to be distributed by NDoH from AMS Badili, Port Moresby. We have raised several times with the National Department of Health the urgent need of distribution of these resources. They could have been used for registration of OPV in the current Polio vaccination campaign. This is a missed opportunity!
- **Polio vaccination** campaign after identification of 26 Polio cases in PNG. During 2018
- -this polio outbreak took most people by surprise as PNG was declared polio free by WHO in 2000.
- It shows clearly that the present vaccination schedule did not cover the majority of the population. Health Centres are reluctant to go out on patrol to do immunisations.
- Unless they are paid extra money as has happened now with the polio vaccine campaign.
- We don't expect that behaviour will change unless staff is prepared to go out on patrol to immunise
- The lack of child-health-books and registration only magnifies the problem. How can we rely on immunisation coverage if no registration is being done??
- Adequate immunisation coverage has proven to be a logistical nightmare, where one can only fear for the next eg measles epidemic –to start
- The cold-chain requirements are not followed, most vaccine fridges are old and need replacement
- The polio outbreak also highlights the effects of poor hygiene and sanitation!
- Since 2018 The polio immunisation is done with 3 oral dosages with a with one month interval, and injectable IPV with the 3rd dosage. There has been confusion about this IPV vaccine staff using it as an oral dropper instead of injecting.

Solar hospital

- There were 4 Solar LED barn lights installed during our visit. See report above.
- A separate solar light system in the theatre that consists of a large 120 WAH power battery with two panels with total of 160 Watt mounted on the roof. It connects to 6 LED light bars in the theatre room. The battery is installed in the old x-ray department and locked away to make sure it is not displaced, stolen, or used for other electrical items that can exhaust the battery.
- the hospital has a vaccine fridge that works on 3 solar panels, donated by Aus-AID. The firm is North Coast Refrigeration from Caloundra, Australia. It has a number of dry-cell batteries for storage. It works well between 2-8 C. Temperatures are recorded daily by nurses (?). The freezer section was repaired in 2016 by us. Ongoing monitoring and maintenance of solar fridge and solar system is very important. Regular checking of batteries, cleaning of vaccine fridge (cockroaches...), cleaning of solar panels on the roof. This was explained to Jenny several times.
- Next to the vaccine fridge system there is another small solar with another 2-3 small solar panels that supplies solar power only to the office. It has only 2 wet cell batteries. Not enough to store power for lights at night, but enough to run a few laptops and a printer during the day, which is currently happening.
- Sr Beula has separate small solar system for lab equipment, microscope, centrifuge. Technician Hendry Topa, staff James Morova, assisted installing this.

Monitoring child health and growth

- Two baby/child weighing scales were donated; Baby scale up to 10kg and toddler weighing scale. Also 2 stadiometers were donated and installed. Education on use was provided.
- length/height board/stadiometer donated and installed.

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- no plotting of weight and height for age, weight for height on WHO graphs in 'Child Health Record' done.
- 'child health record' books- a small supply of 400 books was provided by Unicef-we funded freight to Kanabea.

Obstetrics

Antenatal clinic once per week by HEO

Most mothers don't know their LMP date. Not even their own age.

So the duration of pregnancy can only be guessed by fundal height. Very difficult to detect intra uterine growth retardation.

A second obstetric Doppler was donated to the clinic by us since previous one was stolen. Sr Beula locks it away each day after use.. another Doppler is in Jenny's office

Antenatal checks are 3-4 weekly From 32 weeks 2 weekly from 36 weekly check.

She checks weight, fundus height , BP, position child. Malaria prophylaxis is provided by means of Fansidar. They do Haemoglobin (HemoCue 201 donated by dr Malcolm Altson), provided they have HemoCue microcuvettes.

No checks are done for diabetes (low prevalence). Also pre-eclampsia doesn't seem to occur. This could relate to diet?

Head and breech positions can be delivered locally. Transverse positions are referred to Kerema.

The hospital has only 5 deliveries per month. During our visit there were 4 deliveries in 10 days.

There is a small hand pumped vacuum extraction.

Most babies are less than 3kg at birth. Therefore there is a low incidence of obstructed labour in cephalic presentation

A possible solution for the present problem of high perinatal and maternal mortality, would be to establish an antenatal lodge next to the hospital for pregnant women to stay from 2-4 weeks before expected date of delivery.

Advantages

1. Timely identify and preselect high risk cases for delivery to be referred to Kerema or Port Moresby for delivery or caesarian section.
2. Better perinatal care when more women deliver at the hospital rather than at home
3. Immediate immunisation with BCG and Hep B vaccine when delivered at home rather than postponing several months in case of home delivery.

Disadvantages

- a) cost of establishing building, ablution block and cooking facilities
- b) increased number of deliveries in the hospital would put high workload on nurses
- c) increased number of referrals to Kerema/Port Moresby would need increased number of medivacs with existing carrier North Coast Aviation.

Pharmacy

The storage rooms are quite big. Samson Laurie is in charge.

The supply is delivered by L&Z Logistics, a private firm in Port Moresby contracted by the PNG NDoH. See above.

1. Push system: The medical Kits system is a so called 'push system' = standard number of medicines and medical items are sent to each healthcentre in PNG annually.

2 'Pull system': ordering from Areal Medical Store (AMS).

The supply from POM AMS to Kerema comes in very irregularly, and sometimes not for over a year. See issues above. Air transport from Kerema to Kanabea is very irregular (NCA).

Ordering system: only items out of PNG-ordering book can be ordered eg Medication, bandages, surgical materials, laboratory testing, nutrition products for malnourished children.

Forms are submitted to Kerema, stamped and then sent to Port Moresby Area Medical Store. They

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pack the ordered items (if in stock). Next the packed supplies are sent by truck to Kerema. Once received at Kerema the acting diocese Medical secretary, Dorothy Hailareville, has to arrange the cargo flight from Kerema to Kanabea by NCA flight.

The logistics involved in ordering medications are complicated, and transport problems add insult to injury.

The system can be circumvented by bringing the order in directly to AMS in POM, , directly collecting and bringing it back to Kerema. Bishshop Baquero has done several trips to POM to do this , but sometimes in vain because AMS had nothing ready.

Theatre

Looks like a picture of the 50-ies. In those days dr Maurice Adams still did caesarean sections, and other surgical procedures, with electricity provided by the old hydroelectric power system.

Lots of surgical instruments. Unfortunately all scissor had disappeared.

Sterilising has to be done by boiling in a big pot because the electrical sterilizer needs the diesel generator to run enough power.

They have a good airway trolley with bag valves, guedels, endotracheal tubes. Though some items may need replacement.

They had no Oxygen at all as no new supply had arrived from Kerema (now been >5 yrs)

We donated many new scissors. And wound dressing materials

X—Ray room

Has not been used since the hydroelectric power system broke down about 8 years ago.

Would need a big overhaul If ever to be used again in future.

Laboratory

Done by Sr Beula. She had a training in lab technology in India. She has a good microscope that can work on the solar power supply from the vaccine fridge.

At present she can do the following tests :Haemoglobin (uses Hemocue) urine microscopy.

Malaria RDT test only. HIV rapid test. And syphilis rapid VDRL test

She is also can analyse electrolytes, FBC, and liver functions.

Primary school Kanabea

St John de Baptist, Kanabea (520 students grade 3-8). Principal is Mr Commelius Pointo. There are 8 (new) teachers, all Kamea. There are 3 vacant positions. The 3 new classrooms, for which cement was donated two years ago, look very good. Classrooms are nice and light and students enjoy working there.

III. Conclusions, recommendations and plans

Conclusions

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Key-issues that need to be addressed:

1 lack of reliable power/electricity source

2 lack of reliable communication; nearly non-existent phone reception and no internet .

A complete disconnect between local level, provincial and central government: nobody cares!

3 the general poor condition of the hospital buildings and staff houses

Health centre/hospital

1. Ask Bishop Peter Baquero what his vision is for Kanabea healthcentre/hospital and staff houses
2. Supporting Bishop Peter Baquero with renovation /or hospital building.
3. Supporting Bishop Peter Baquero with acquiring new solar powered vaccine fridges for Kanabea and Kamina health centre.
4. Ongoing monitoring, coordination and awareness raising and advocating of medical, primary health care and public health concerns between Kanabea/Kotidanga Rural LLG and NDoH and key stakeholders and Bishop Peter Baquero by PNG Foundation.

School

5. Supporting Bishop Peter Baquero, Fr John Billy Wasso and school staff with planning and constructing 10 pit toilets and 2 water taps at the school
6. PNG Foundation to purchase and install solar LED lights for 6 school classrooms.



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