



# Building Capacity in Epidemiology and Operational Research in the Pacific Islands

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Public Health Division

**Secretariat of the Pacific Community (SPC)**





## **Building Capacity in Epidemiology and Operational Research in the Pacific Islands**

- SPC – the Secretariat of the Pacific Community
- Building capacity for short and long term needs
- PPHSN – the Pacific Public Health Surveillance Network
- DDM – Data for Decision Making Programme
- Operational Research Course
- FETP - Field Epidemiology Training Programme – SHIP



## SPC – Secretariat of the Pacific Community

- **Founded in 1947** by the Canberra Agreement.
- **26 member countries and territories** (22 Pacific Island Countries and Territories - PICTs)
- **Our mission:** *help Pacific Island people to respond effectively to the challenges they face and make informed decisions about their future and the future they wish to leave for following generations*
- **Core business** – strengthening PICTs through:
  - capacity building
  - capacity supplementation
  - capacity substitution
  - coordinating trans-boundary/regional functions



**SPC delivers technical, scientific, research, policy and training support in:**

- Agriculture
- Aquaculture
- Culture
- Education
- Energy
- Fisheries
- Forestry
- Gender issues
- Health
- Geosciences
- ICT
- Infrastructure
- Media development
- Transport
- Statistics
- Demography
- Water and sanitation
- Youth



## Population & Development




**Browse Data** via the Following Themes:

- Population
- Poverty
- Education
- Economic Development
- Labour Force
- Social Services Provisions


## Agriculture & Forestry

**Browse Data** via the Following Themes:

- Households
- National Economy
- Natural Resources



## Public Health

**Browse Data** via the Following Themes:

- Vital Statistics
- Vector Borne Diseases (Malaria)
- Communicable Diseases (TB)
- Sexual Health (HIV/AIDS & STI)
- Maternal Health
- Child Health
- Non-Communicable Diseases
- Environmental Health
- Health Systems

## Human Development

**Browse Data** via the Following Themes:

- Gender
- Youth
- Culture

## Fisheries & Aquaculture




**Browse Data** via the Following Themes:

- Economics - Labour Market Activity
- Economics - Macro Aspects
- Sustainable Livelihoods and Food Security

## Bulk Data Downloads

- Summary of All Indicators
- NMDI Bulk Dataset (.ZIP)
- More Datasets to Follow...

## Communication & Infrastructure












**Browse Data** via the Following Themes:

- Information Technology (IT)
- Energy
- Transport

## Access MDG Data

Choose MDG Indicator below for cross-country comparisons

 1	 2	 3	 4
 5	 6	 7	 8

[View/Create Country Reports](#) [MDG List & Metadata](#)

## Child Health Indicators

Public Health NMDIs

[Click Indicator Names](#) for Regional Bar-Chart, and [Click Country Values](#) for gender disaggregations and time-series

[View Country Reports](#)



[Back to Contents](#)

Indicator	Cooks	FSM	Fiji	Kiribati	RMI	Nauru	Niue	Palau	PNG	Samoa	Solomons	Tokelau	Tonga	Tuvalu	Vanuatu
Immunization-Measles PH-CH.1.1 MDG.4.3	100 2010	91 2009	71.8 2010	89 2010	90.2 2010	65 2010	100 2010	39 2010	50 2010	60.6 2010	80.6 2007	100 2011	99.4 2009	84.8 2010	80 2009
Immunization-DTP PH-CH-1.2	100 2007	75.3 2001	74.6 2009	58.3 2009	37.9 2007	55.7 2007	100 2009	49 2009	66.8 2007	37.2 2009	87.1 2007	100 2011	100 2007	60.2 2007	58.2 2007
Immunization-HepB3 PH-CH-1.3	82 2009	89 2009	74.6 2009	86 2009	99.7 2009	100 2009	100 2009	69 2009	64 2009	72 2009	81 2009	100 2009	99 2009	91 2009	82 2009
Low Birth Weight PH-CH-1.4	3.9 2009	11.1 2009	7.9 2007	22.1 2010	12.2 2011	27 2002-07	0 2005	6.9 2010	8.7 2010	10.2 2004-09	12.5 2002-07	0 2011	2.8 2009	6.1 2002-07	10.2 2007
U5 Child-Underweight PH-CH-1.5		15 2005	7 2008	23.1 2009	13 2007	5.6 2007	0 2005	2.2 2010	27.2 2010	1.9 1999	14.2 2007	0 2011	2 1999	1.9 2007	15.9 2007

Please leave some feedback:




**Send**

In total there are **164** Values in the database for Child Health Indicators (Public Health). [Download Summary to Excel](#)

**25**  
Gaps

**79%**  
Complete

**49%**  
New Values

**22.9**  
2011

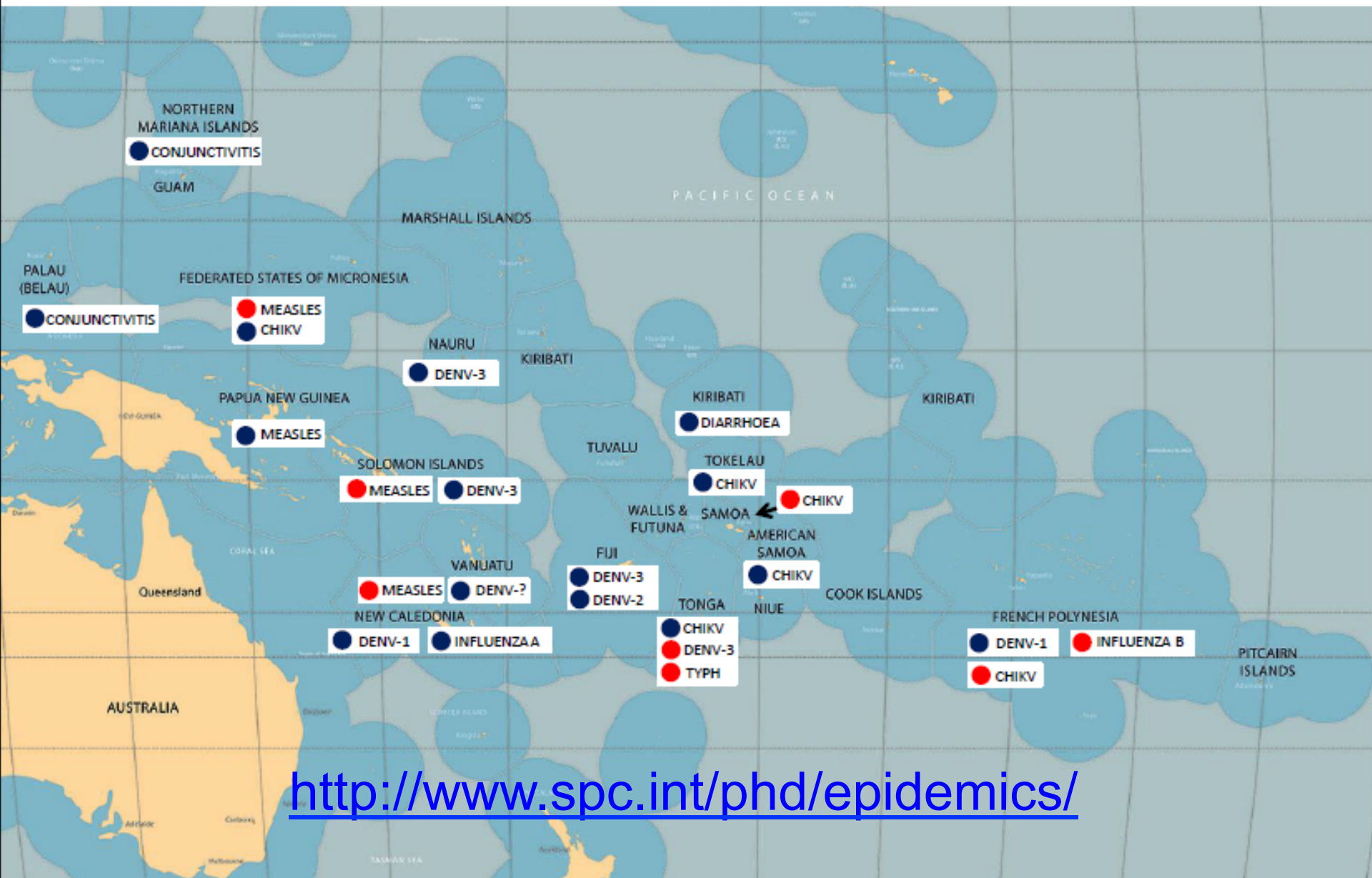
Recent Data  
(>= 2010)

**46.1**  
2008

Older Data  
(<= 2009)

No Data  
(Not Applicable)

# Epidemic and emerging disease alerts in the Pacific region as at 12 November 2014



<http://www.spc.int/phd/epidemics/>



SPC  
Secretariat of the Pacific  
Community  
for the Pacific Public  
Health Surveillance  
Network (PPHSN)

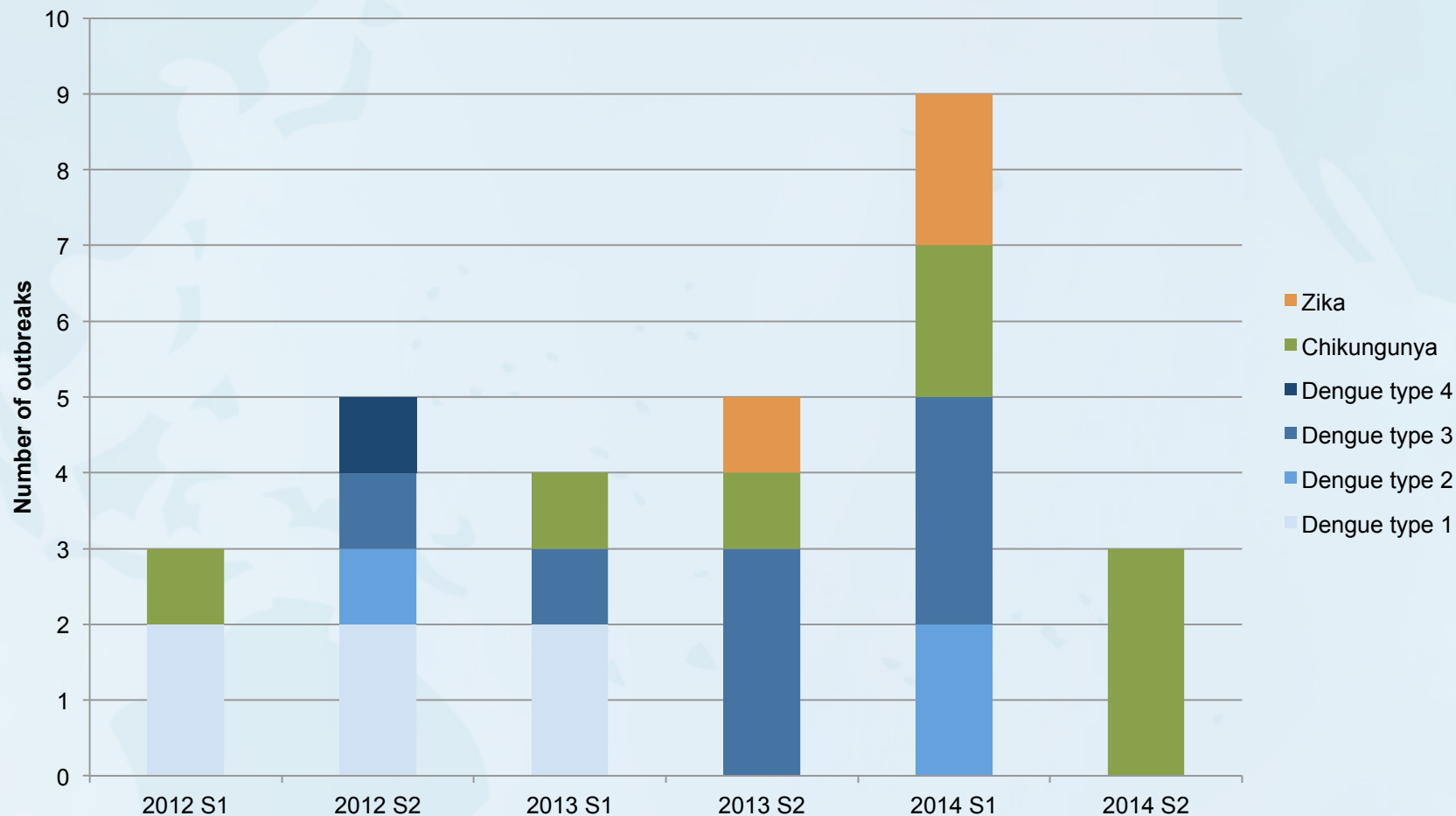
Legend

- Red circle: Cases reported are increasing or peaking.
- Blue circle: Cases reported are decreasing or viral circulation is ongoing
- Grey circle: Awaiting confirmation of aetiology.

DENV: Dengue virus  
CHIKV: Chikungunya virus  
TYPH: Typhoid fever



# New arboviral outbreaks and circulation 2012-2014



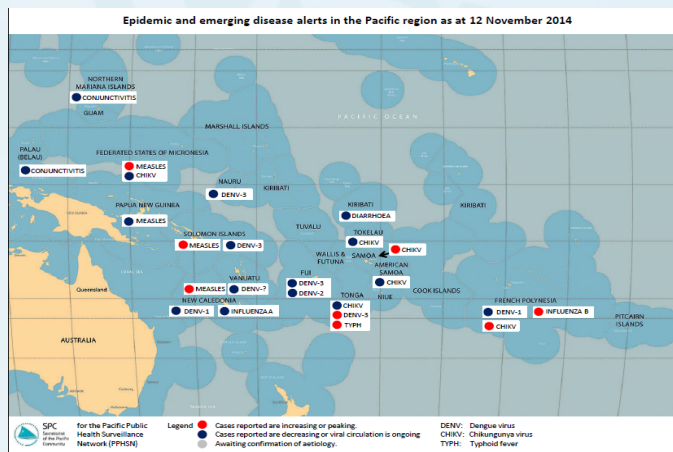




# Building capacity for short and long term needs

## Constraints and opportunities

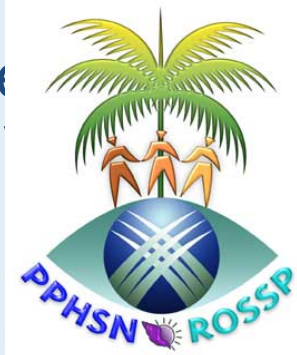
- Planned and unplanned activities
- Immediate and long term risks/threats/priorities
- National and regional planning
- Disease categories and Core Public Health Functions





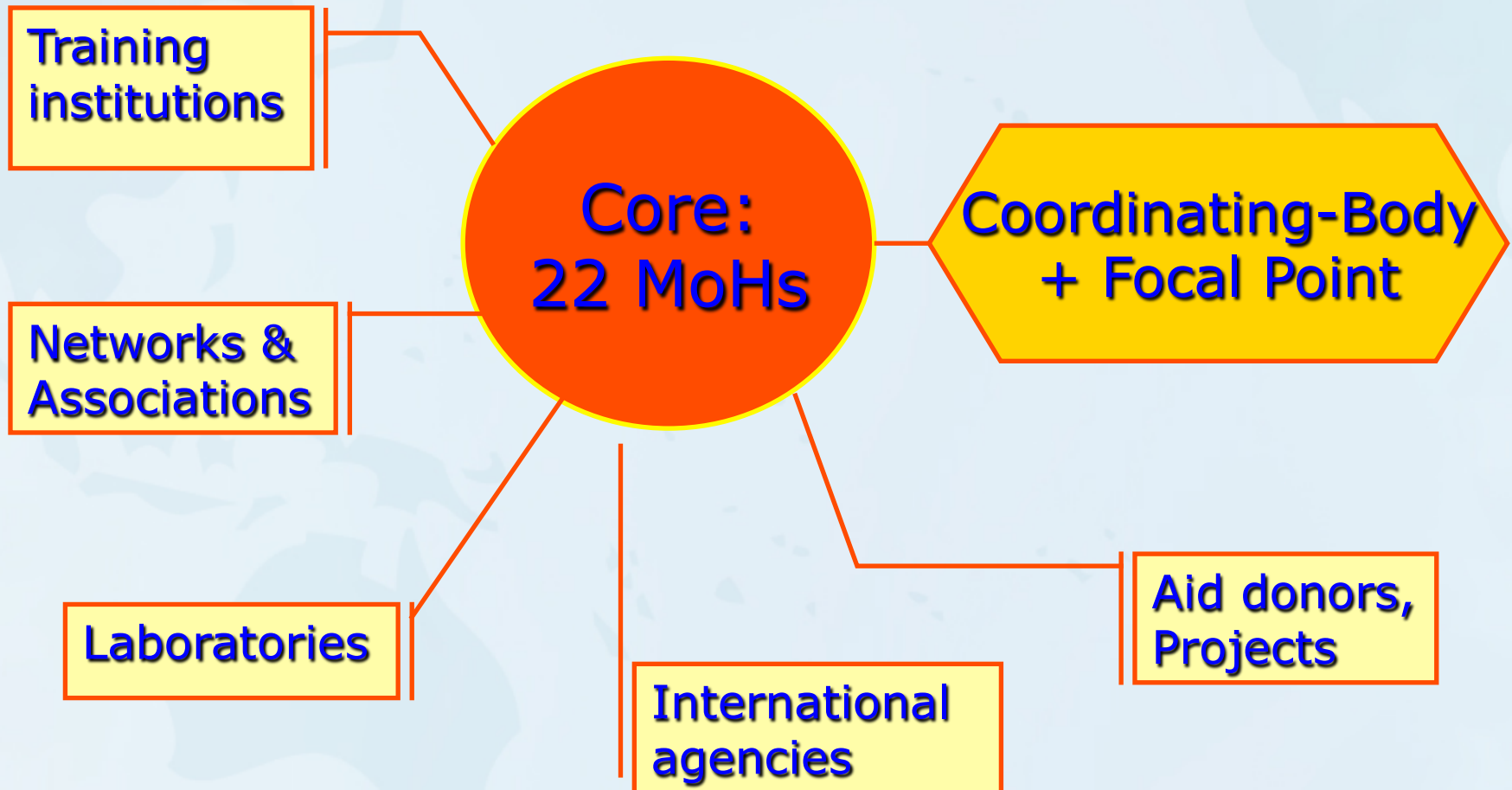
# Pacific Public Health Surveillance Network (PPHSN) Background

- PPHSN is a voluntary network of countries/territories and organisations – created in 1996 supported by SPC & WHO
- Promotes public health surveillance & response
- Outbreak prone CDs in focus. Should include all public health emergencies
  - Set priority target diseases: influenza, dengue, measles, leptospirosis, cholera, typhoid, HIV/AIDS, (TB)
- PPHSN goal is to improve public health surveillance and response in the Pacific Islands, in a sustainable way





# PPHSN Institutional Framework





# PPHSN Networking Services

## PPHSN services

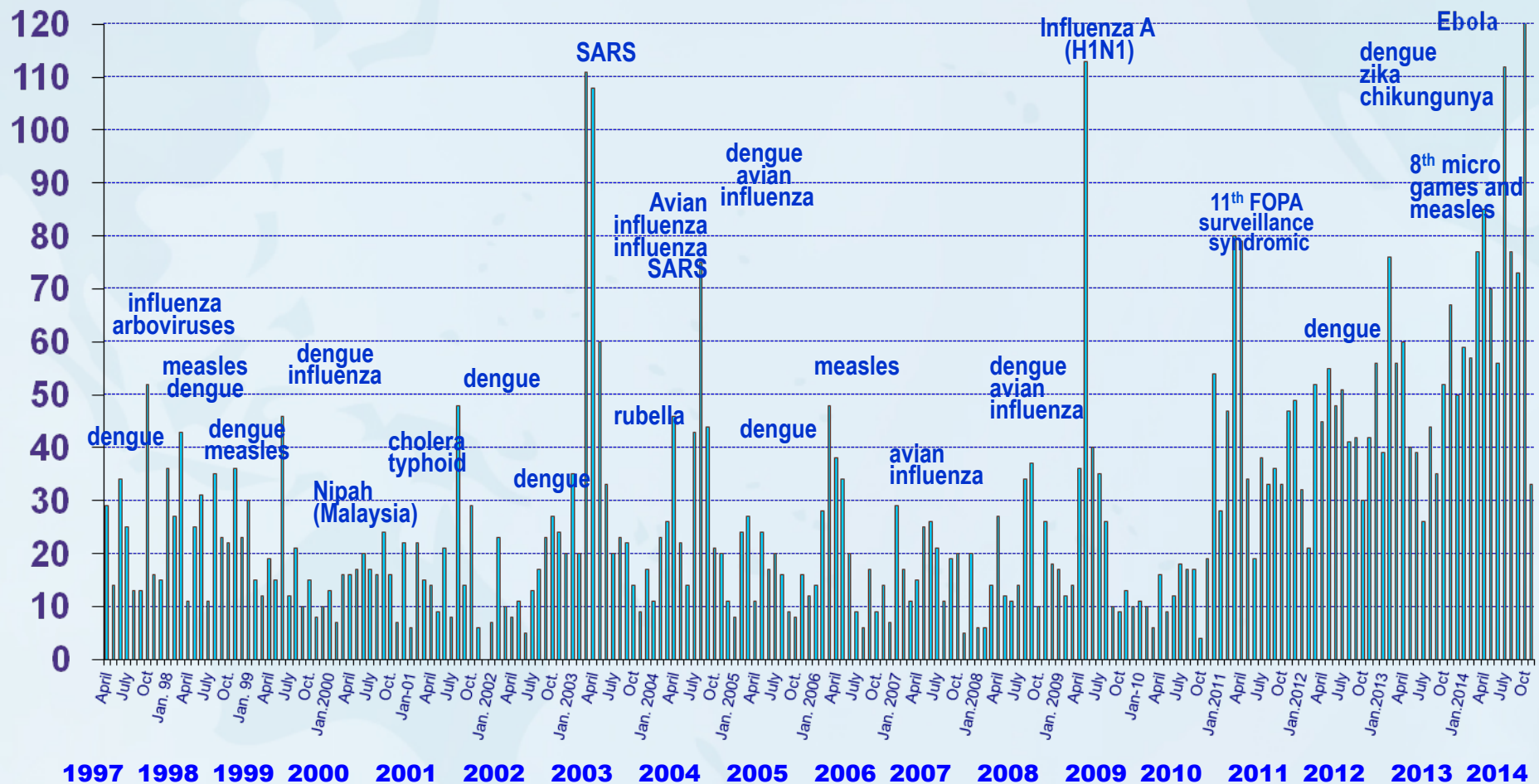
- PacNet
- LabNet
- EpiNet
- PICNet
- Syndromic surveillance

## Operational steps

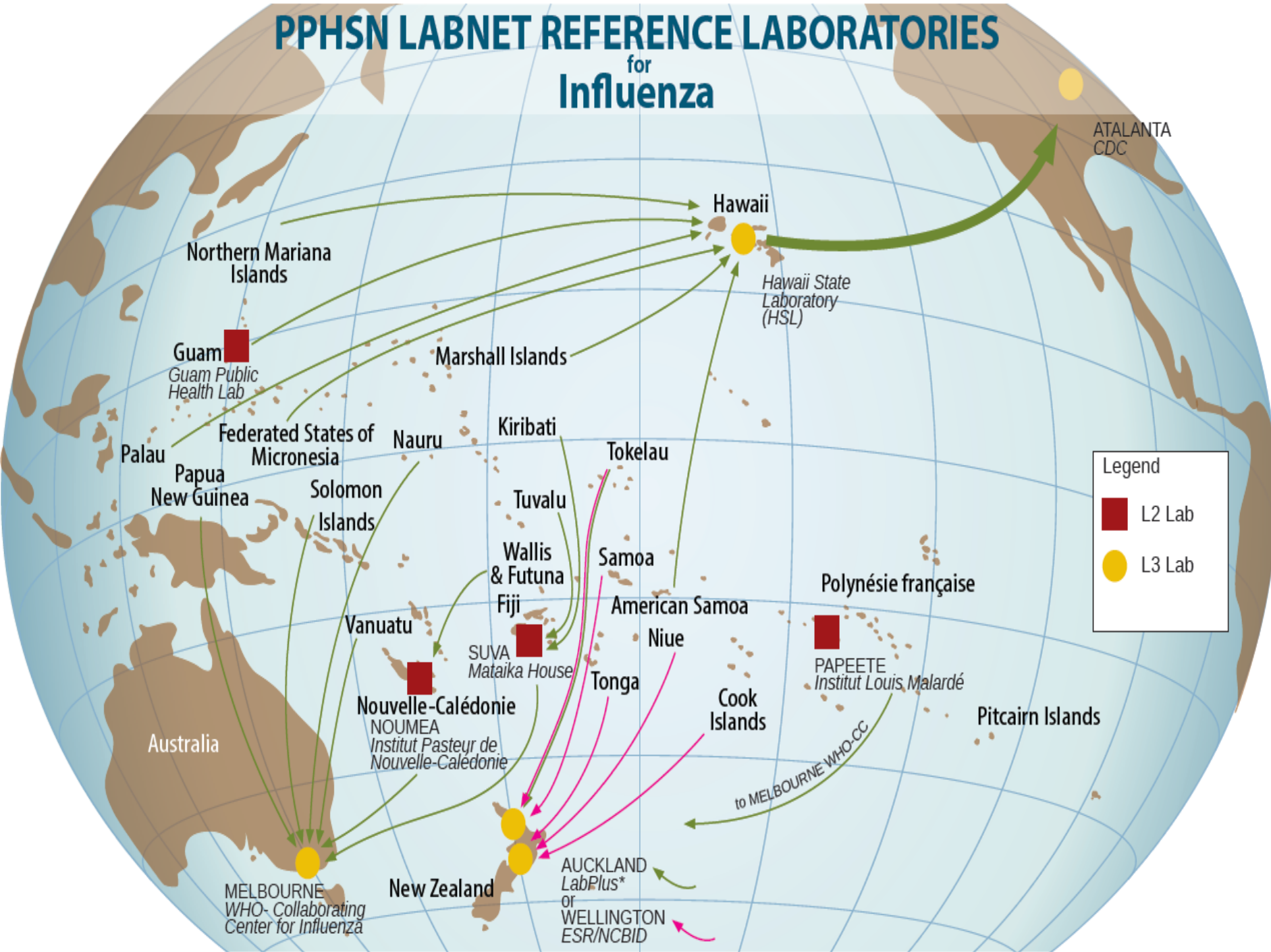
- Alert & Communication
- Verification & Identification
- Investigation & Response
- Infection control
- Outbreak detection



# Number of PacNet messages posted per month, April 1997 - November 2014



# PPHSN LABNET REFERENCE LABORATORIES for Influenza



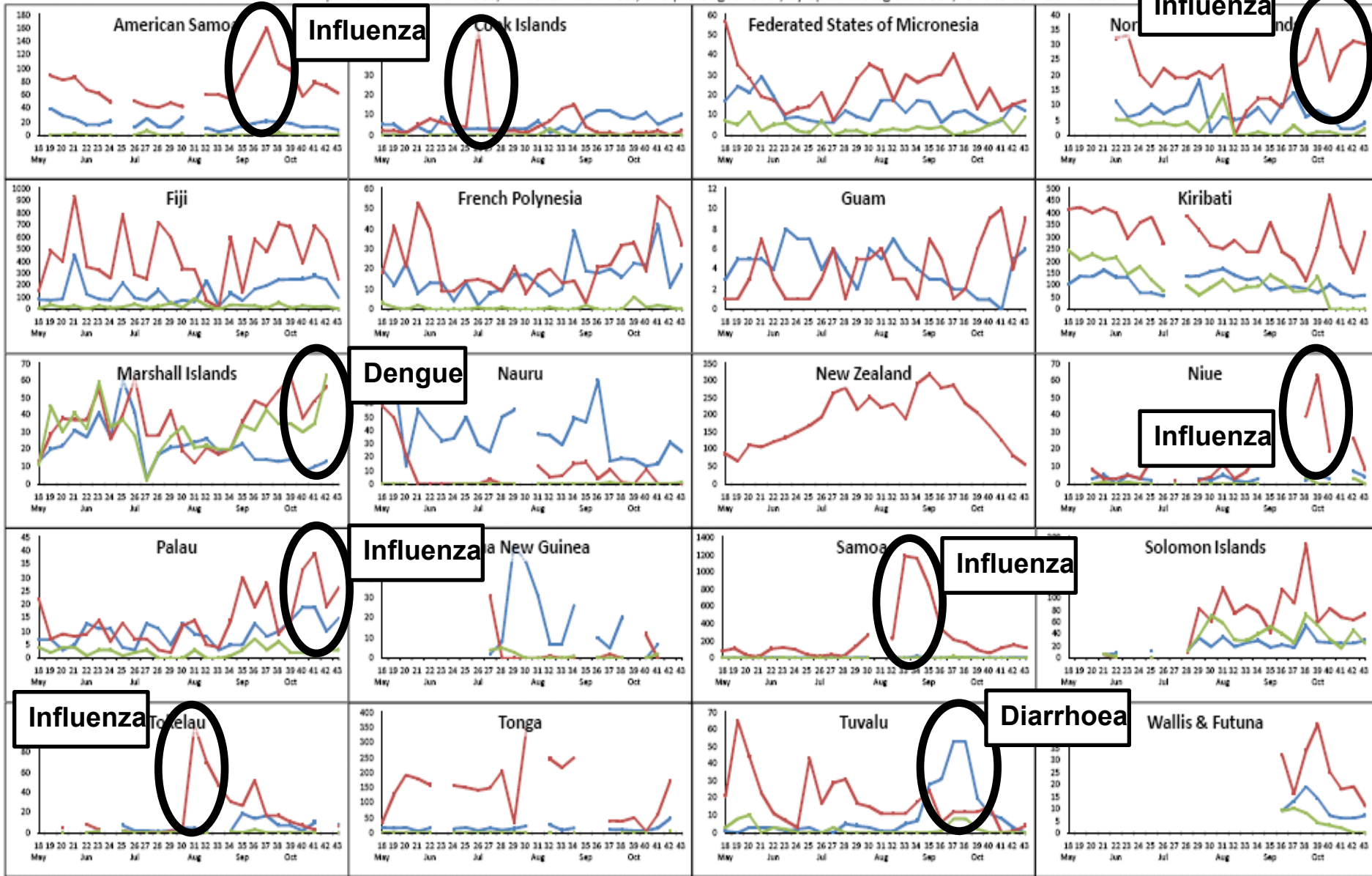
# Pacific Syndromic Surveillance System

2011

week 43

ending 30 October 2011

Reported cases of diarrhoea, influenza-like illness, and prolonged fever; by epidemiological week; for the last 26 weeks



**Influenza**

**Influenza**

**Influenza**

**Dengue**

**Influenza**

**Influenza**

**Influenza**

**Diarrhoea**

**Legend**

- Diarrhoea  
3 or more loose or watery stools in 24 hours
- Influenza-like illness  
Sudden onset of fever, plus: cough and/or sore throat
- Prolonged Fever  
Any fever lasting 3 days or longer

Note: Numbers of reported cases are not comparable between countries. The purpose of the charts is to show trends over time within each country/area.



# Regional capacity-building of Core Public Health Functions

In response to the call by Pacific Ministers of Health 2011 (Honiara Outcome)

- Feasibility study commissioned by SPC in agreement with PPHSN-CB for a Pacific FETP => SHIP Programme
- DDM – Data for Decision Making Programme
- Operational Research Course
- FETP - Field Epidemiology Training Programme

“from work, at work, for work”





# Data for Decision-Making (DDM)

A group of people are gathered in a workshop or training room. They are seated at long tables covered with red cloths, working on laptops and looking at documents. A man in a light green polo shirt is standing and addressing the group. The room has large windows in the background, and the atmosphere appears to be a collaborative learning environment.

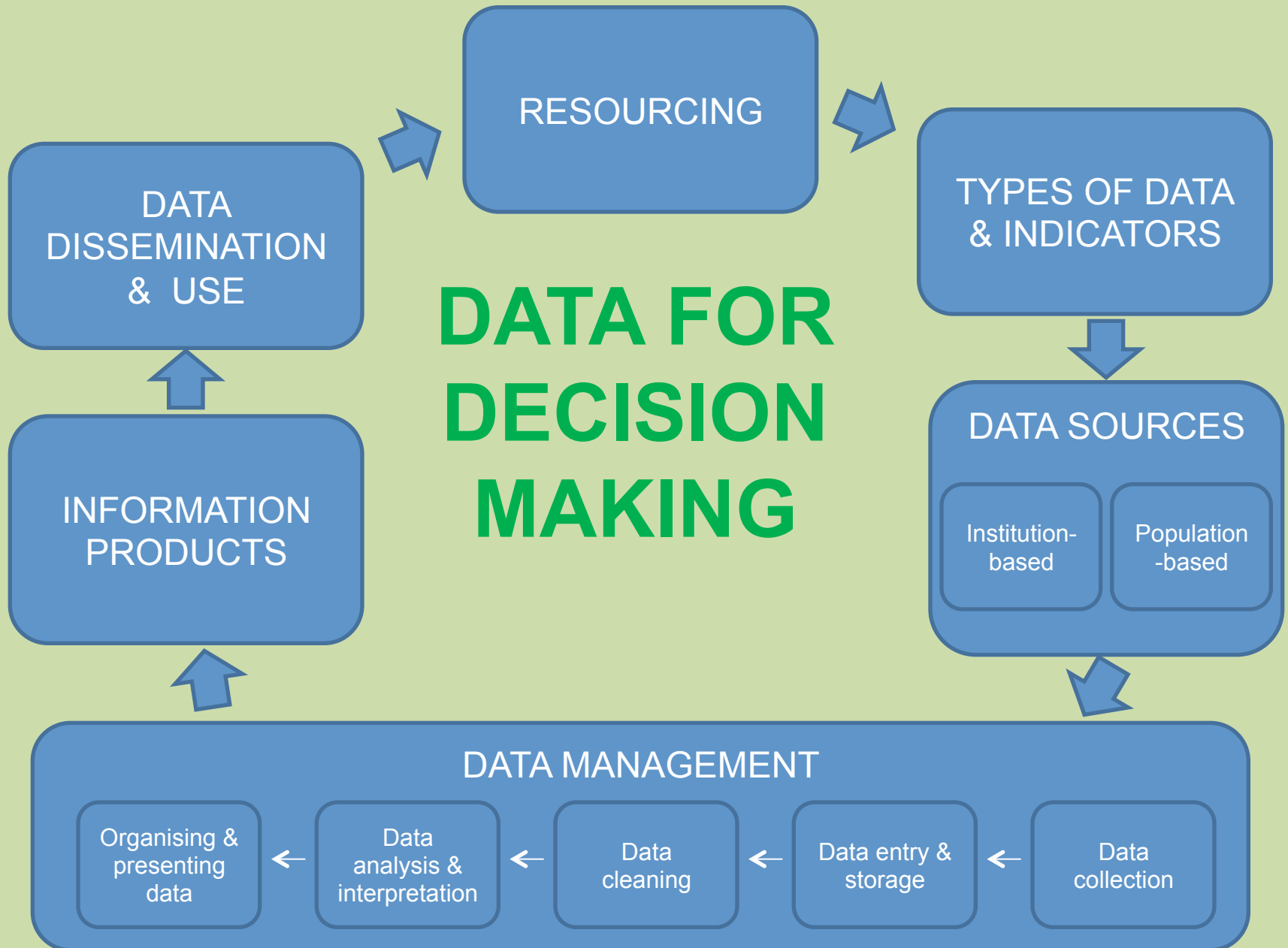
- Accredited (FNU) curriculum of four one week modules, previously developed by SPC and PIHOA
- Delivered by PPHSN partners in country or in subregional workshops
- Previously tried in the region for Solomon Islands, Fiji and USA
- Own data project required to accredit full program



# Data for Decision-Making (DDM)

- **Module 1** – Outbreak surveillance and response
  - 14 PICTs (120 students) in 2013-2014
- **Module 2** – Basic applied epidemiology and data analysis (in-country data)
  - 7 PICTs (50 students) in 2014
- **Module 3** – Intermediate epi and data analysis
  - 6 PICTs (26 students) in 2014
- **Module 4 and own data project - 2015**

# DATA FOR DECISION MAKING

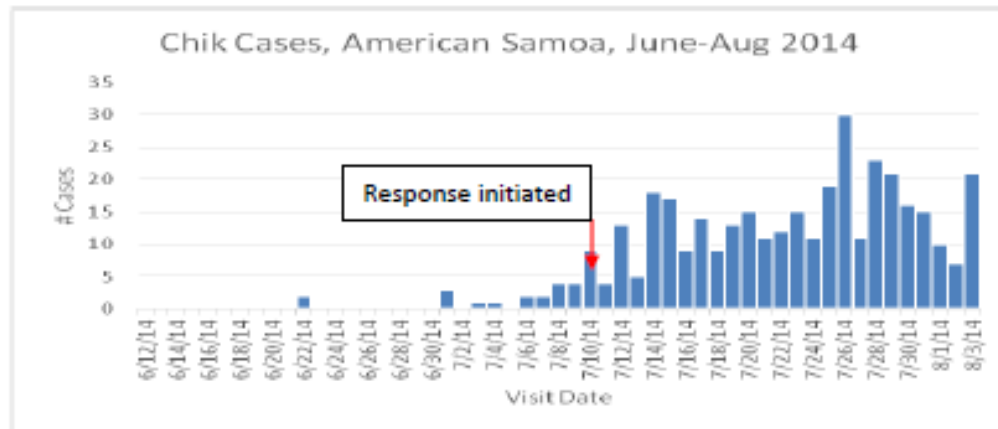




## Situation Report, Chikungunya Outbreak, American Samoa- August 4, 2014

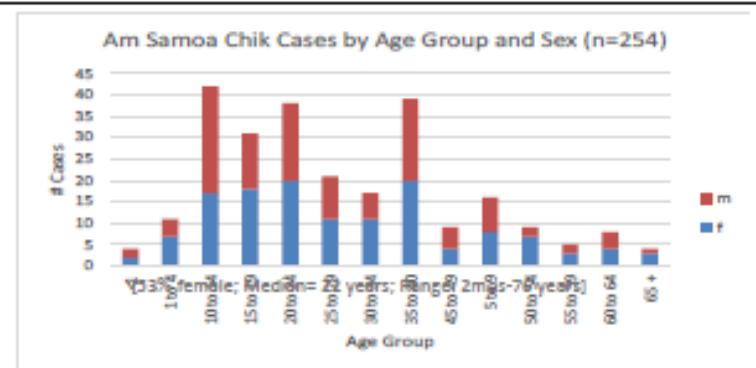
**Case definition (probable cases):** Acute illness since June 15, 2014 with at least two of the following: fever, rash, body aches.

To date there are 361 probable cases reported with 7 hospitalizations and 0 deaths (possible death from chik ruled out by reference lab testing). Reference lab testing confirmed positive for chikungunya (X of Y patients tested). Reference lab tests negative for dengue, Zika and measles with further testing in progress. *Note that Chikungunya is an Aedes mosquito-borne disease. (more info at: [www.cdc.gov/chikungunya/](http://www.cdc.gov/chikungunya/))*



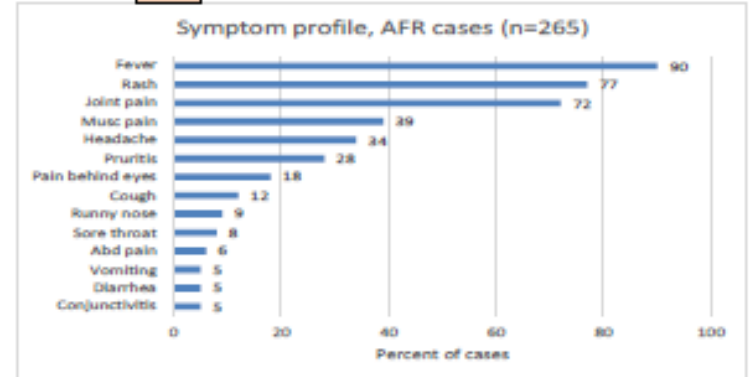
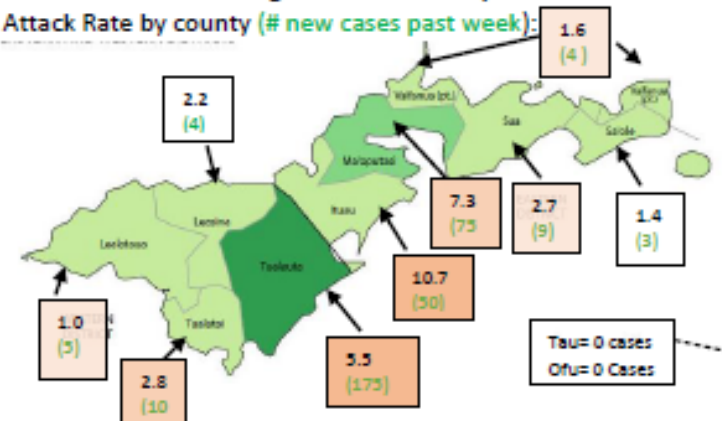
### Response measures:

Mass text messages and media releases done regarding risk of disease, probable mode of spread, encouraging clinic or ER care for patients with acute fever, rash and/or body aches, mosquito control and avoidance of bites. Working on setup & protocol for "Chik Hotline" for management of patients by phone. Alert and situation updates to physicians, nurses, key government agencies in American Samoa, PacNet. Stepped-up vector control messages by American Samoa EPA, ASPA and DOH Environmental Health Unit and one day-long clean up activity in the Pago area. Working on multi-agency village vector control plan. Fliers in Samoan and English regarding risk of disease and mosquito control to clinics and ER to distribute to patients. Travel advisories being developed. Clinical in-service training done for LBJ physicians re. Chikungunya on 7-23-14. Further CDC reference lab test results pending. Many thanks for assistance from CDC, WHO, Hawaii Public Health Lab, SPC, and ASCC.



American Samoa average attack rate= 3.4/1000

Attack Rate by county (# new cases past week):



Labs: WBC 3.6-12.3 (5 pts with WBC < 5K)

Plts 56-401 (one pt with plts < 100k)

(n=128)



# Pacific OR course

- Plan, conduct and publish operational research and to influence policy and practice with their results
  - Pacific: organized by the Union and SPC
  - Also run twice in Fiji
- Curriculum of 3 modules over one year (Sept. 2012-Aug. 2013)
  - Protocol – Analysis – Write-up
- 11 studies published ranging over CDs and NCDs in Pacific Islands



# Pacific OR course

## Public Health Action

International Union Against Tuberculosis and Lung Disease  
*Health solutions for the poor*



VOL 4 SUPPLEMENT 1 PUBLISHED 21 JUNE 2014

- Tuberculosis case burden and treatment outcomes in children, characteristics of government workers and association with diabetes mellitus**  
Screening adult tuberculosis patients for diabetes mellitus in Ebeye, Republic of the Marshall Islands  
K. Tairea,<sup>1</sup> B. J. Langidrik<sup>6</sup>
- Screening for tuberculosis and LTBI in diabetes patients, Pohnpei, Federated States of Micronesia**  
R. R. De
- Tuberculosis notifications, characteristics and treatment outcomes: urban vs. rural Solomon Islands, 2000–2011**  
Sputum smear microscopy referral rates and turnaround time in the Tonga Islands
- Burden and spectrum of disease in people with diabetes**  
Describing the burden of non-communicable disease risk factors among tuberculosis patients with delayed sputum smear conversion in the Pacific island of Vanuatu  
N. Girin,<sup>1</sup> R. Bros S. Fanai,<sup>1</sup> K. Viney,<sup>2</sup> L. Tarivonda,<sup>3</sup> C. Roseveare,<sup>4</sup> M. Tagaro,<sup>1</sup> B. J. Marais<sup>5</sup>

# FETPNG



- 6 months program: 2+1+1 week schedule
- National & provincial focus
- Competitive selection
- Training – project planning – M&E of intervention
- Cohort 1
  - started in April 2013
  - 12 fellows finished in November 2013
- Cohort 2
  - Ongoing for 13 fellows
- Several success stories





# **SHIP <sup>(1)</sup>:**

## **Mandate**

### **Meeting of the Pacific Island Health Ministers, 2011**

- Training programs for all levels of the health workforce
- Address range of service needs, including:
  - IHR/APSED core capacities
  - Strengthen communicable disease control
  - NCD surveillance and control
  - Accelerate progress towards achieving MDG 4 (child health) and 5 (maternal health)



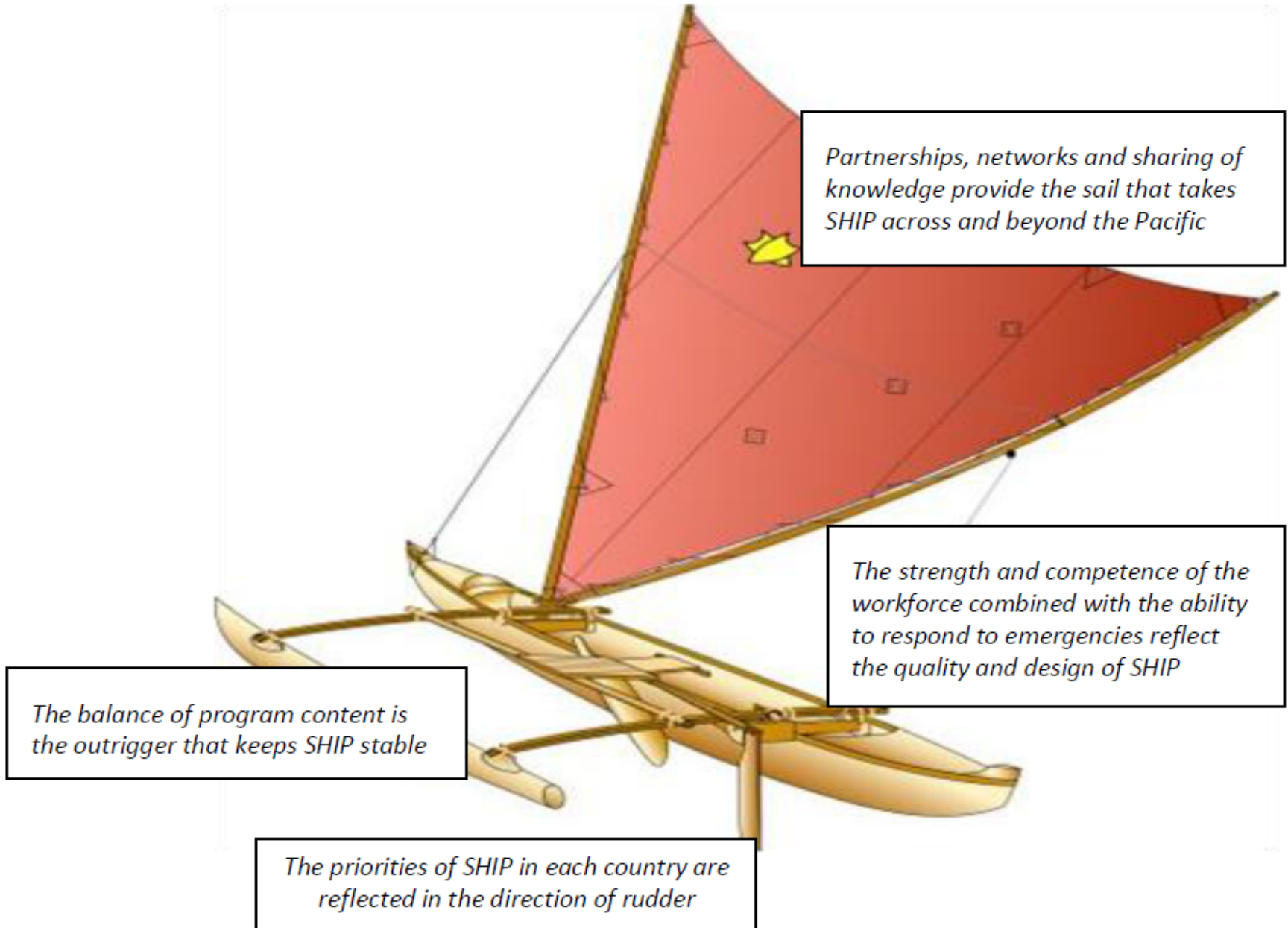


# SHIP (2)

## *Strengthening Health Intervention in the Pacific (SHIP)*

- Improve population health outcomes in PICTs by increasing the effectiveness of core public health services
- Develop and implement a training program integrated with capacity development initiatives
- Address the immediate and long term needs, bridges national and regional planning
- Builds on the achievements of the PPHSN
- Trainees study and work full-time in their home-country for 2 years, and qualify (FNU) for a master level

# SHIP - Strengthening Health Interventions in the Pacific



# Thanks to

- PPHSN core members: all PICTs and especially those providing time allowing facilitators of DDM to contribute
- For DDM contributions: PPHSN partners: PIHOA, WHO, CDC, FNU, RAPID
- For OR contributions: the International Union Against Tuberculosis and Lung Disease
- Mr. Berry Ropa, Programme Manager for Surveillance and Emergency Response, PNG National Department of Health and Boris Pavlin WHO PNG for info on FETPNG
- The various funding agencies for these initiatives: Ausaid, Nzaid, CDC, EU
- SPC colleagues

