

# Fifty Years of Adverse Drug Reaction Reporting in New Zealand.

Primary care involvement and the developing use of e-  
health

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# Adverse Drug Reactions a public health concern

## International:

Account for 3 - 6 % of hospital admissions

## New Zealand:

Accident Compensation Commission

~16% of claims for medication

~ \$6 million (2013/14)

44% ADRs causing hospital admission are preventable

Davis P et al, N Z Med J, 2003.

## Australia:

5-fold increase in hospitalisations due to ADR's in >65yr olds 1995-2002.

Burgess CL et al, Med J Aust, 2005.

## Sweden:

3% of deaths in general population due to ADRs

Wester et al Brit J Clin Pharm 2008

# New Zealand Pharmacovigilance Centre

- National monitoring centre established in 1965
- WHO monitoring programme founding member in 1968
- Monitoring programmes
  - spontaneous reports  
medicines, vaccines, NHP's
  - selected medicines
  - selected vaccines
  - medication error

CARM

1965

IMMP

1977

IMMP

2004


Intensive Vaccine Monitoring Programme

2009

MERP


## New Zealand Pharmacovigilance Centre in 2003

# NZ Pharmacovigilance components



New Zealand Pharmacovigilance Centre

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**Welcome to NZPhvC**


The New Zealand Pharmacovigilance Centre consists of synergistic monitoring programs that contribute to and support the safety of medicines and related products in New Zealand through voluntary reporting of adverse events

Centre for Adverse Reactions Monitoring




Report an Adverse Reaction

Medication Error Reporting Programme




Report a Medication Error

Pyschoactive Substances, Recreational Substances & Legal Highs





Report a Reaction

**News**

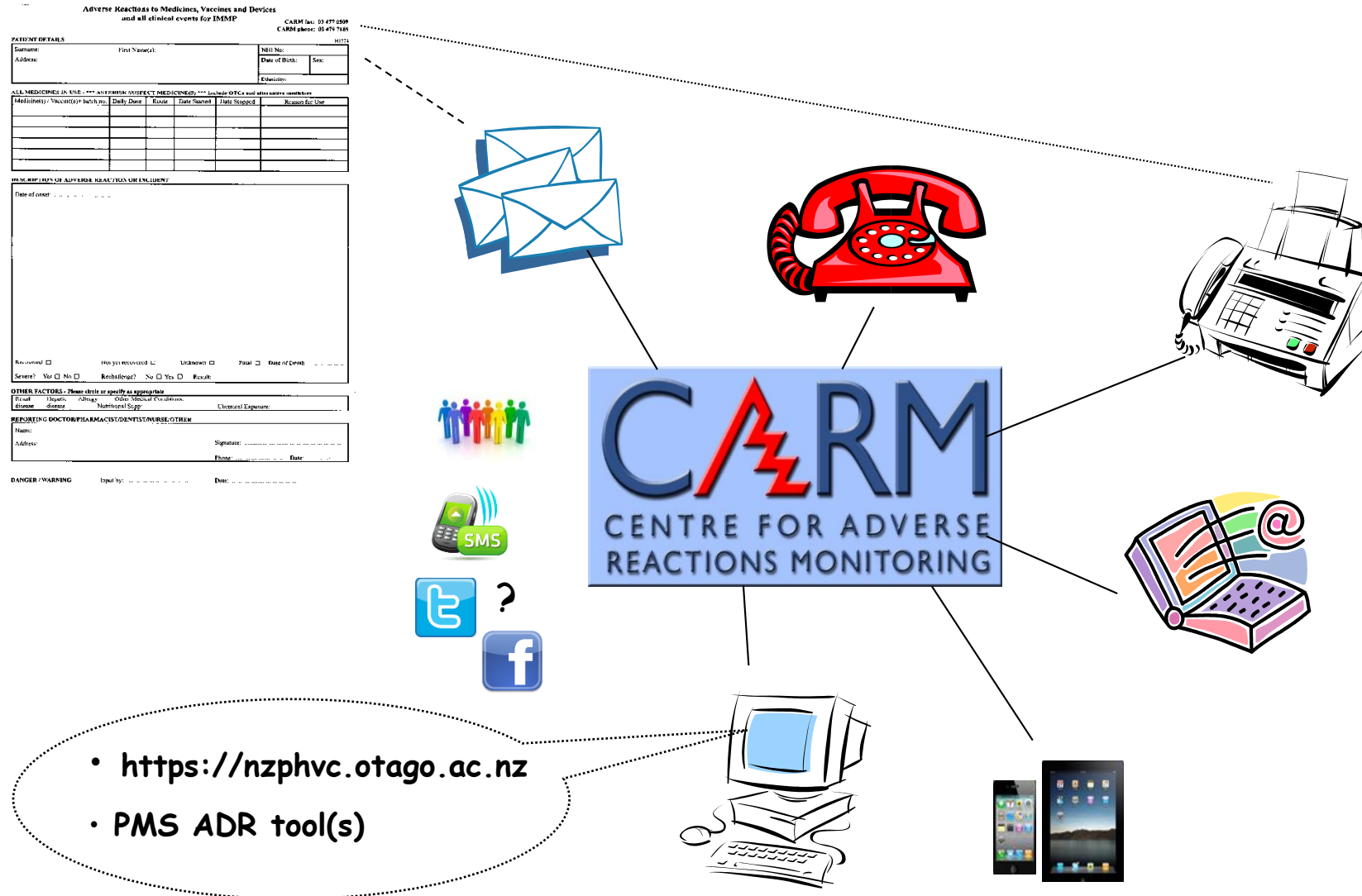


The IMMP closed in December 2013. Visit the [archived site](#)

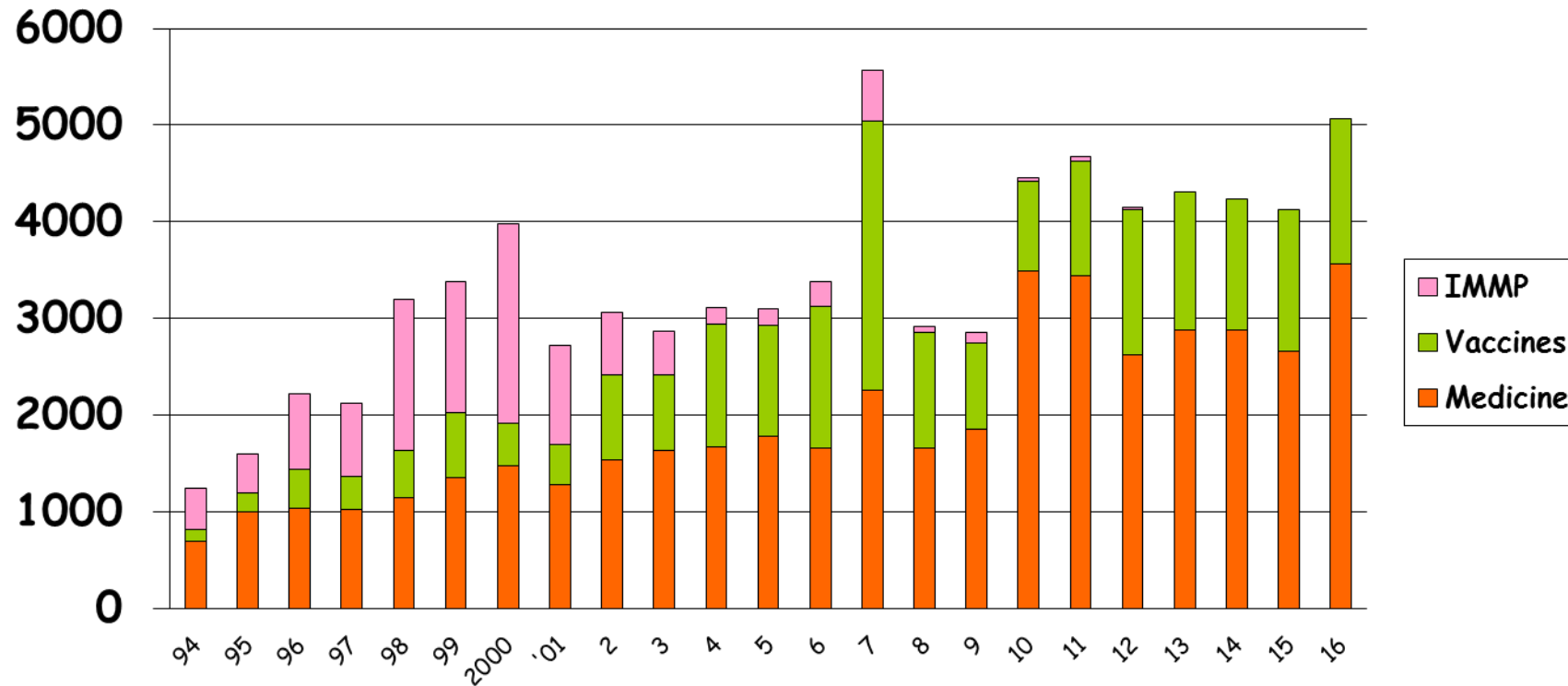




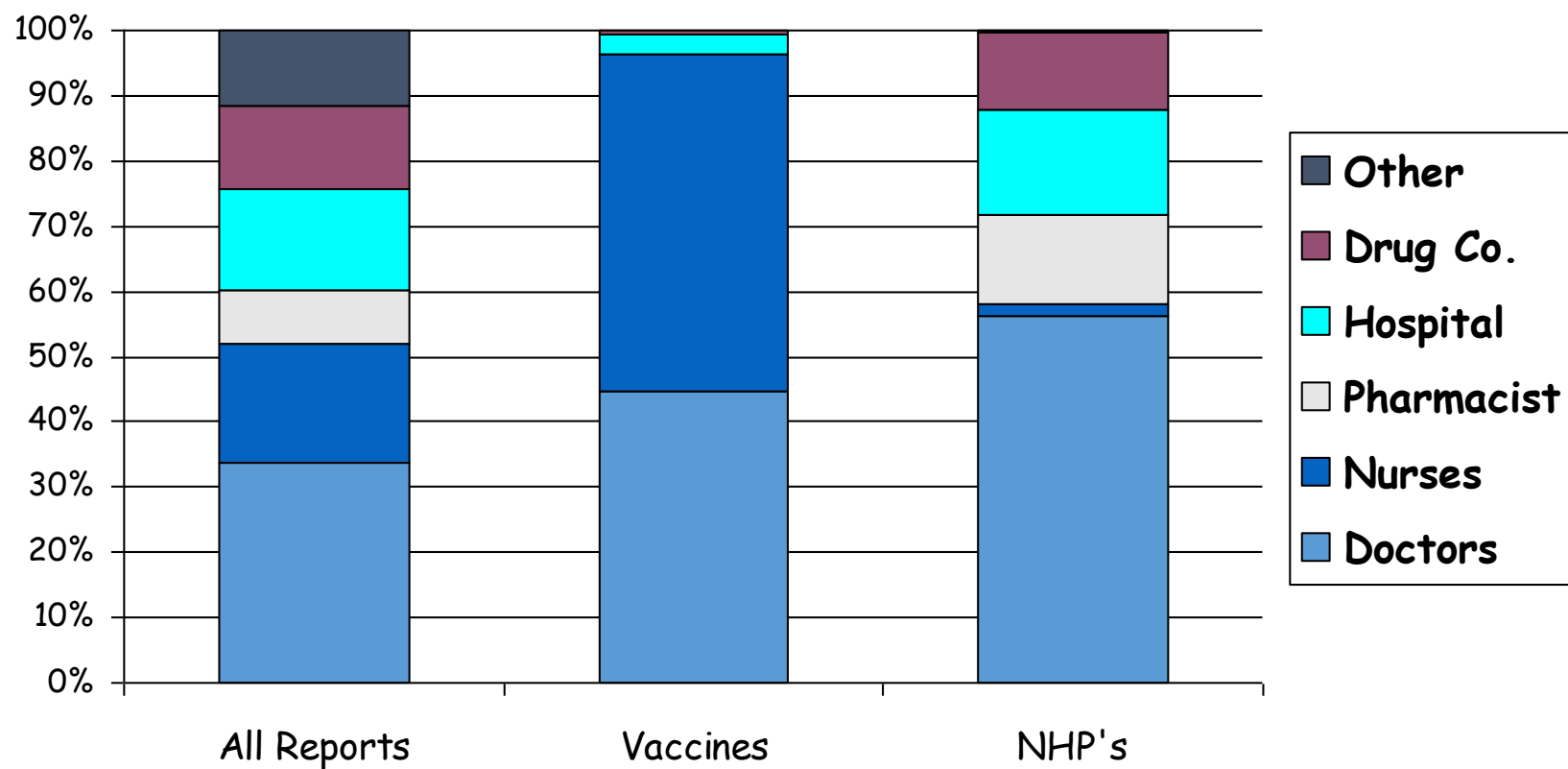
# Report Sources



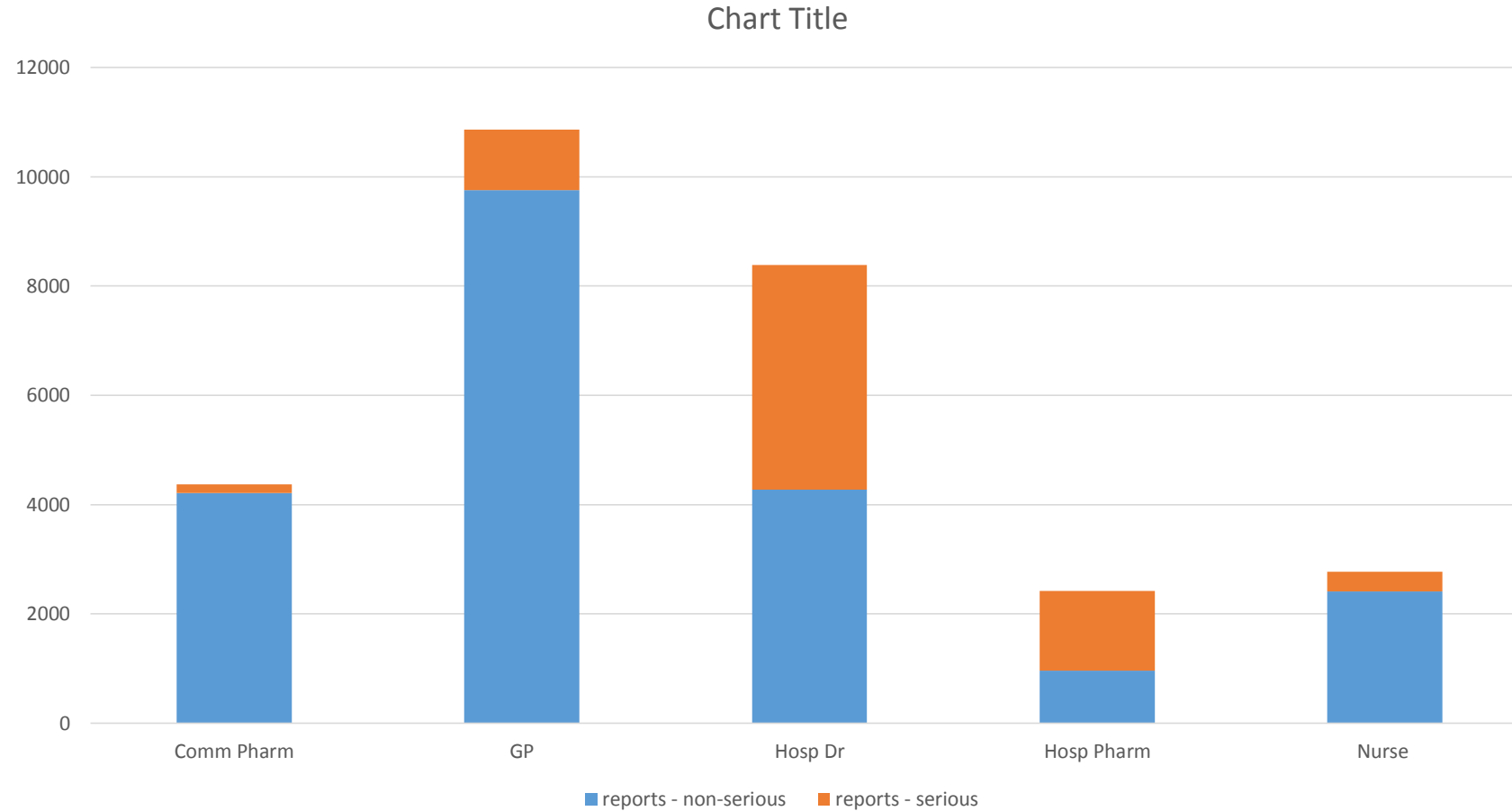
# Annual Total Reports Received by NZPhvC



# Source of ADR/AEFI reports

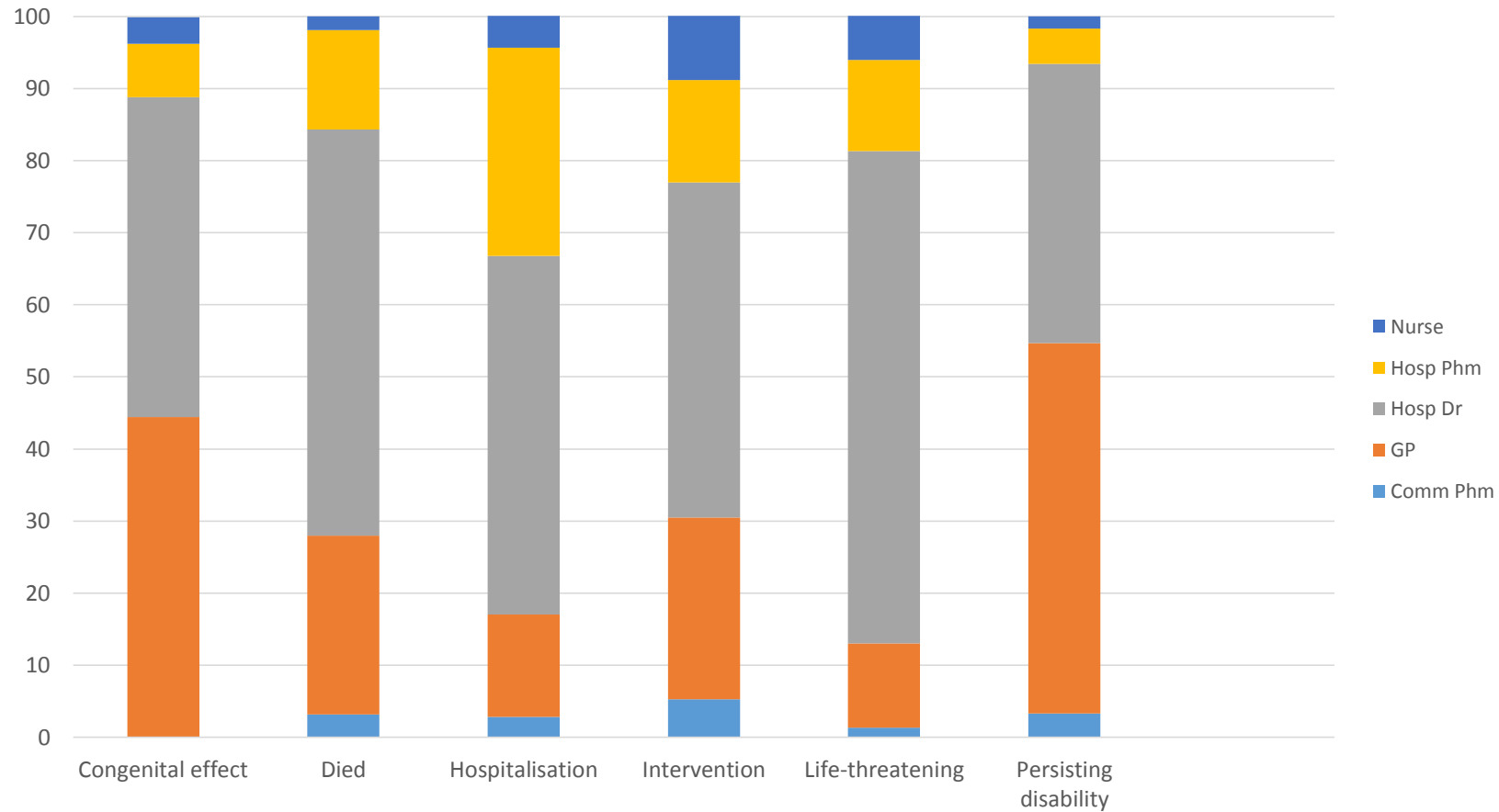


# Serious Reports for Medicines by Reporter Type 2000-2016





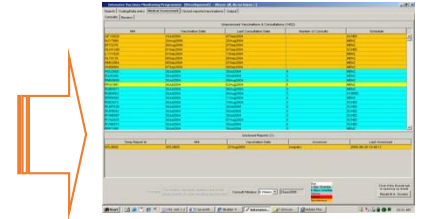
## Seriousness Categories by Reporter Type 2000-2016



# Report Processing

## EACH EVENT or REACTION IS:

- coded according to WHO criteria using WHOART
  - reaction terms applied
  - assessed for severity & seriousness
  - assessed for relationship/causality



## FOR ALL SPONTANEOUS REPORTS

- tailored response is sent to every reporter
  - causality
  - number of similar reports in N.Z. /WHO/literature
  - relevant additional information
    - ... at risk groups
    - ... prevention issues
  - cautions warnings or danger alert / advisories
  - follow-up information if required



# The value of spontaneous monitoring

## 1. Patterns of reactions

- Reinforce established knowledge
- Local context
- Changing patterns of use
- Monitoring for patient safety
- Product quality issues

Clinician Queries ...

Impetus for prescriber reminders

# The value of spontaneous monitoring

## 1. Patterns of AEFIs/Reactions

- Re-inforce established knowledge
- Local context
- Impetus for prescriber reminders

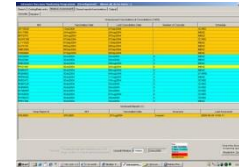
## 2. Signal new AEFIs/Reactions

## 3. Contribute to individual patient safety

- medical warning system
- NZ specific



PRR  
ROR  
Line listings



# *National Medical Warning Register*

- Patient-unique health Identifier links to core health information with national health-intranet access
- NZPhvC records Drug/Vaccine-Specific AEFI/ADR alerts as
  - **Warning** (precaution)
    - (potentially) significant morbidity for patient
      - > caution for future use
      - > impact on daily living
  - **Danger** (contraindication/life threatening)
    - Life-threatening event or other contraindication to future use
- Purpose to prevent re-exposure through alert

# Hospital-side MWS alert

Clinical Documents

11:14 5/9

Showing all documents

View By Category Look For Status All Clear

Mark selected document as unread

Mark all documents as read

Date Title Author

Dynamic Patient Summary

Clinic Letters - Medical (4/4)

Emergency Dept (1/1)

Laboratory (8/8)

Patient Reports (1/1)

Unclassified Historic Documents (3)

Alerts

Alerts & Allergies

DICLOFENAC - ANAPHYLAXIS (AVOID NSAIDS) IBUPROFEN - ANAPHYLAXIS NSAIDS

Planned Appointments

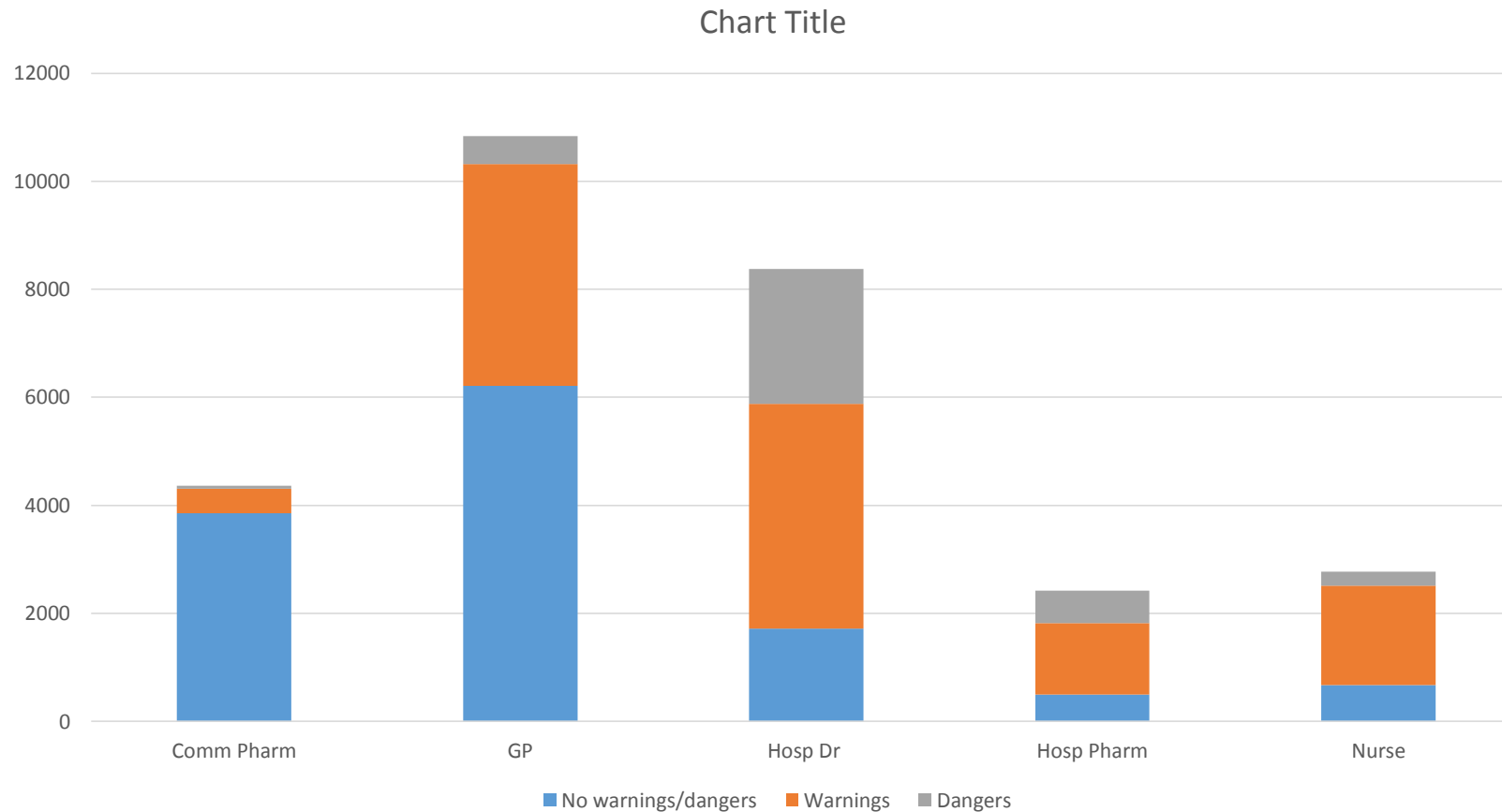
No Results Found

Visit List

Admit Date	Discharge Date	Specialty	Clinician Name	Ward	Visit Number	Type
15-Aug-2012	15-Aug-2012	Immunology	Dr. [Name]	Intern'l Recovery		IP
06-Aug-2012		Immunology	Dr. [Name]			OP
14-May-2012		Eye Outpatients	Dr. [Name]			OP
14-Oct-2011		Eye Outpatients	Dr. [Name]			OP
11-Oct-2011	11-Oct-2011	EmergencyMedicine	Dr. [Name]			ED

>>

# Medical Warnings and Dangers for Medicines by Reporter Type 2000 -2016



.... *but*

- National MWS currently only accessible by DHB's (except South Island)
  - Primary Care access critical
- Low value entry format by some DHB's
  - 'Diclofenac'
- Critical carers cautious of entries
- CARM records valued - '6001'

- New EHR proposals include wide access
  - View records ✓
  - Enter alerts ±
- Need for:
  - clear operating guidelines so that quality alerts are entered.
  - ensuring alerts are clearly visible in DHB and other HCP software

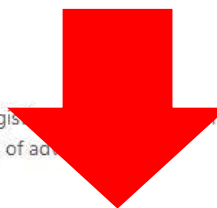
... and prescription visibility will  
complement the safer use of medicines





## Welcome to NZPhvC

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Centre for Adverse Reactions Monitoring



[Report an Adverse Reaction](#)

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Substances & Legal Highs



[Report a Reaction](#)

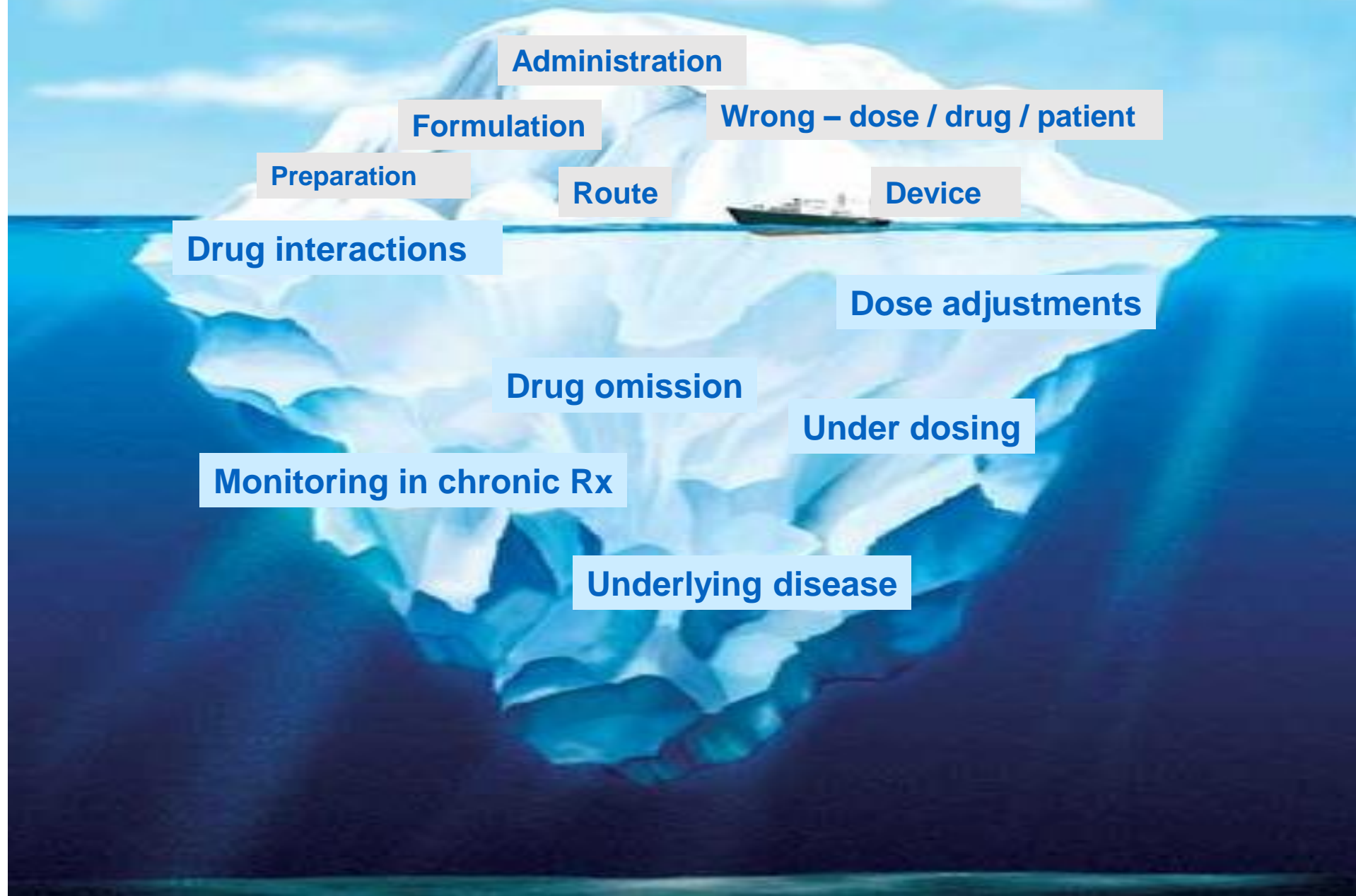
## News



The IMMP closed in December 2013. Visit the [archived site](#)



# The Medication Error iceberg?



Medication Error Reporting Pilot - Mozilla Firefox


File Edit View History Bookmarks Tools Help

otago.ac.nz https://nzphvc-01.otago.ac.nz/merp-pilot-snapshot-1-oct-2011/

national transport assistance nz

Outlook Web Web Kiosk Phonebook Otago Uni... Medsafe MICROMEDEX® 2.0 ADR Search Vigisearch PubMed Home Natural Medicines Co... U of O Library Mims Online UMC

Medication Error Reporting Pilot



## Medication Error Reporting and Prevention

a pilot project by the NZ Pharmacovigilance Centre

[Report a medication error](#)[FAQ](#)[Contact Us](#)

All fields are optional but please complete as many fields as possible as the more information you provide, the more useful the report. Information submitted will be handled in confidence. Please do not supply identifying information (e.g., patient name or date of birth, pharmacy name, or healthcare provider names).

Please advise who is making this report

Please select...

**1** Date event occurred

December 2011

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

OR ☐ date unknown

**2** Time event occurred

Unknown

**3** Event Type

Select...

**4** Medication system stages involved

(select all that apply)

☐ prescribing

☐ dispensing

☐ administration

☐ monitoring / follow up

☐ supply/purchasing

☐ presentation/packaging

☐ delivery

☐ not applicable (unable to determine one or more of the listed stages)

**5** Medications

Incorrect medicine

Medication name

Batch/expiry

➤ CARM origin reports forwarded to MERP

➤ Integration of CARM & MERP a unique model



# Medication Error Harms

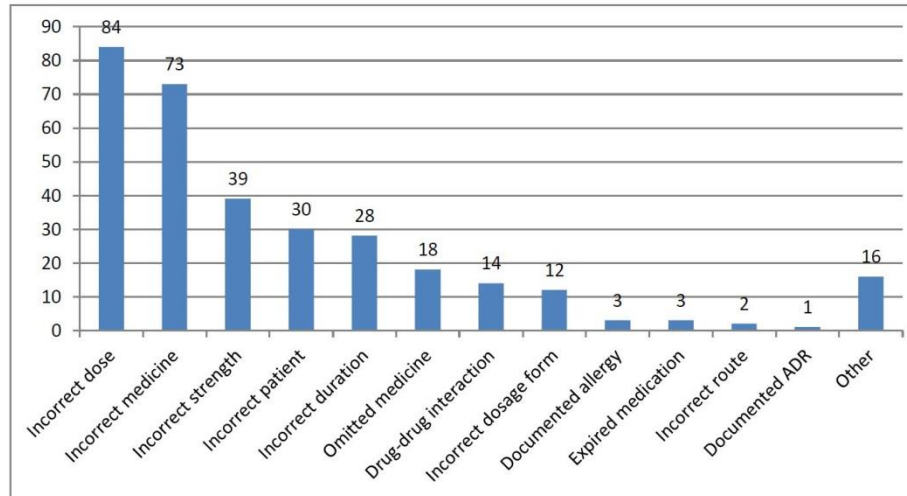


Figure 4: Number of reports by medication error type

*? opportunities for arranging  
PHO-specific feedback*

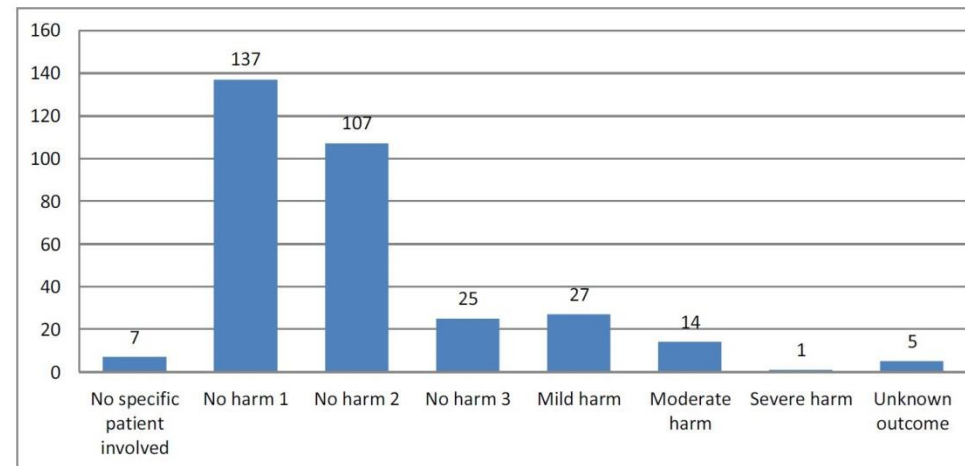
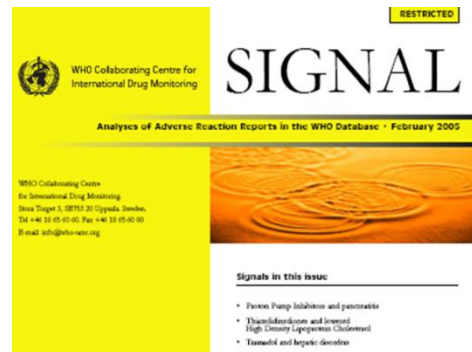


Figure 5: Number of reports by patient outcome

# Interactive Pharmacovigilance

- Support and Communication
  - Online/Telephone on-demand access by clinicians for ADR/AEFI discussion
  - Supporting clinical decision-making through ADR/AEFI data
  - Interaction with Health Care Providers & Patients
  - Media




? opportunities for more suitable PHO communication





# Interactive Pharmacovigilance


- Support and Communication
- Reporter and Patient-Centred Focus
  - Ease of reporting to suit all
  - Tailored feedback on each report
    - Highlighting relevant risks related to Drug/Vaccine-ADR/AEFI and comorbidity
  - Follow-up for clarity or Outcome

*? Opportunity for integration into the EHR*

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Website: [www.nzpc.org.nz](http://www.nzpc.org.nz)

29 April 2016

 ADR Ref No.   
Please quote Ref No. if you contact us.

Dear 

Thank you for your report concerning a complex array of symptoms and problems that you have documented which are considered to have occurred subsequent to having received the first HPV vaccination in October 2013. I note that you went on to receive the second HPV in January 2014 but that the problem list that you identify dates to the first vaccination. The National Immunisation Record notes that both these vaccines were administered in the left deltoid.


The issues that you describe document that you were ill on the same day you received the first HPV vaccination and that at the time you had sore ears, sore throat, cold symptoms, congestion and essentially symptoms of an upper respiratory tract infection when the vaccine was given. About an hour later you developed a painful stiff sore arm which persisted for a week and thereafter you describe an extensive list of problems which are of a diverse nature affecting many organ systems and remain present to this time. I also note you record that you have been tested for aluminium and that this is present in your body.

The first symptoms that you describe about an hour following vaccination are not unreasonably attributable as potential adverse events to the HPV vaccination. Local events including arm pain are transient that are often observed in some vaccine recipients – not only for the HPV vaccine but any vaccine and in any age group from the routine childhood immunisation series through to influenza and tetanus vaccines given to adults.

However, the other extensive list of symptoms that you describe includes chronic fatigue syndrome and fibromyalgia. To my knowledge these events have not been identified in any robust scientific study to have a causal association with HPV vaccination. However, I can understand the problems that you describe have significant impact on you and your lifestyle. I had wondered you had undergone any investigations to determine possible underlying causes for these events which in themselves are very diverse for the potential underlying systems and mechanisms?

I have recorded these events into the CARM database and I am grateful for the time and effort that you have taken to let us about them.

Yours sincerely





# Interactive Pharmacovigilance

- Support and Communication
- Reporter and Patient-Centered Focus
- Supporting Medsafe and Immunisation programmes
  - Weekly teleconference with Medsafe on current developments
  - Weekly and *ad hoc* summary reports on specific vaccines or medicines
  - Quarterly reports to the Medicines Adverse Reactions Committee (MARC)

# Interactive Pharmacovigilance

- Support and Communication
- Reporter and Patient-Centered Focus
- Supporting Medsafe and Immunisation programs
- Medicines monitoring .. M<sup>2</sup>
  - Highlight *potential* safety issues from reports of *suspected* ADR's/AEFI's
  - Stimulate further reports & information about these issues



# M<sup>2</sup>

## Medicines Monitoring



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Reviewed: September 2012

Medicine	Potential safety issue	Active monitoring period ends*
SRIIs	Thunderclap headache/RCVS	31 December 2012
Triptans	Thunderclap headache/RCVS	31 December 2012
Lithium	Diabetes mellitus	31 December 2012
Lansoprazole, Pantoprazole, Omeprazole	Hypocalcaemia	31 December 2012
Ibuprofen	Hypokalaemia/Renal tubular acidosis	31 March 2013

\* Although active monitoring will cease at this date please continue to submit reports for these medicines after this date as with all medicines.

#### What is M<sup>2</sup>?

This is a medicines monitoring scheme, the aims of which are to:

1. Highlight potential safety issues identified from reports of suspected adverse medicine reactions sent to the Centre for Adverse Reactions Monitoring (CARM).
2. Stimulate further reports and increase the information on these potential safety signals.

This helps CARM and Medsafe to investigate possible safety signals and decide if any action needs to be taken.

The appearance of a possible safety issue to a medicine does not mean that Medsafe and CARM have concluded that this medicine causes the reaction.

Medsafe emphasises that the listing of a medicine and possible safety signal on M<sup>2</sup> does not mean that Medsafe is suggesting that healthcare professionals do not use these medicines or that patients should stop taking any medicine highlighted here.

Medsafe and CARM are seeking further information on these possible safety issues to investigate whether there is in fact a causal relationship.

Patients with any concerns about medicines they are taking should talk to their doctor.

This scheme does not replace the Intensive Medicines Monitoring Programme (IMMP) or spontaneous reporting of suspected adverse reactions in New Zealand.

? Opportunity for integration into the EHR

# Interactive Pharmacovigilance

- Support and Communication
- Reporter and Patient-Centered Focus
- Supporting Medsafe and Immunisation programs
- Medicines monitoring .. M<sup>2</sup>
- Publically accessible database of Adverse Events
  - Suspected Medicine Adverse Reaction Search (SMARS)

<http://www.medsafe.govt.nz/Projects/B1/ADRSearch.asp>

### Detail for Human papillomavirus vaccine

Number of reports for Human papillomavirus vaccine: 558

Number reports where death was reported: 0

Number of reactions: 1381

Report	Date	Gender	Age	Medicine(s)	Reaction(s)
75140	May 2007	Female	25	Gardasil vaccine injection (Suspect)	Injection site bruising Injection site inflammation Injection site pain Lymphadenopathy
75309	May 2007	Female	16	Gardasil vaccine injection (Suspect)	Diarrhoea Fatigue Feeling of body temperature change Somnolence Vomiting
75823	Jul 2007	Female	18	Gardasil vaccine injection (Suspect)	Injection site inflammation
75999	Aug 2007	Female	16	Gardasil vaccine injection (Suspect)	Pain in extremity
77157	Dec 2007	Female	16	Gardasil vaccine injection (Suspect)	Influenza like illness Injection site pain Pain in extremity Pyrexia
77676	Feb 2008	Female	17	Gardasil vaccine injection (Suspect)	Lethargy Periorbital oedema Somnolence
78148	Apr 2008	Female	19	Gardasil vaccine injection (Suspect)	Lymphadenopathy
78322	Apr 2008	Female	13	Gardasil vaccine injection (Suspect)	Arthralgia Headache Nausea Pyrexia Rash
78526	May 2008	Female	29	Gardasil vaccine injection (Suspect)	Anxiety Chills Fatigue Insomnia
79061	Jun 2008	Female	15	Gardasil vaccine injection (Suspect)	Injection site abscess
80951	Sep 2008	Female	18	Gardasil vaccine injection (Suspect)	Angioedema Dizziness Hypotonia Nausea
81051	Sep 2008	Female	17	Gardasil vaccine injection (Suspect)	Urticaria
81382	Oct 2008	Female	17	Gardasil vaccine injection (Suspect)	Abdominal pain Injection site pain
81602	Oct 2008	Female	17	Gardasil vaccine injection (Suspect)	Injection site pain Muscle spasms

# The Future

## themes and possibilities

- Improvement of Medical Warning System
  - Increased visibility of Medical Warnings
- Extended Health Intranet communications
  - CARM feedback
  - M<sup>2</sup> monitoring
  - Tailored PHO MERP feedback
  - Critical Medicine Safety messages
- Increasing HCP reporting
  - PMS integration has not greatly increased reporting
  - How do we motivate?
- Automatic transfer of ADR data from Practice Management Systems
  - General practice --- DHB's
    - quality?, filtering?
- Patient reporting
  - Direct
  - Via HCP ("Take and Tell")
  - Patient feedback?

# Acknowledgement

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New Zealand Pharmacovigilance Centre

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