



Hepatitis C

GP CME 2010

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**New Zealand Liver Transplant Unit
Auckland City Hospital**



MIDEAST HOW A NEW PEACE PLAN MIGHT WORK

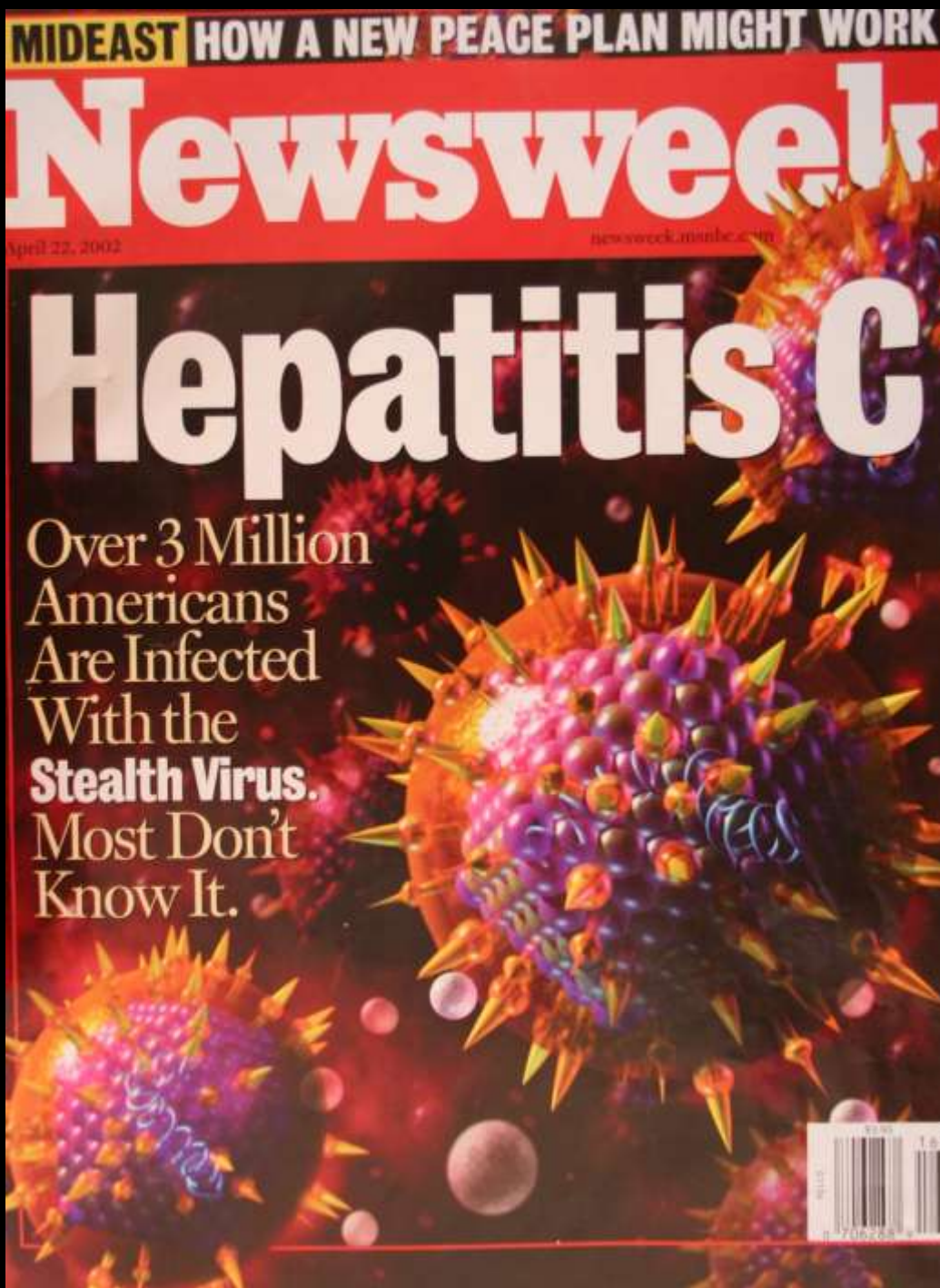
Newsweek

April 22, 2002

newsweek.mide.com

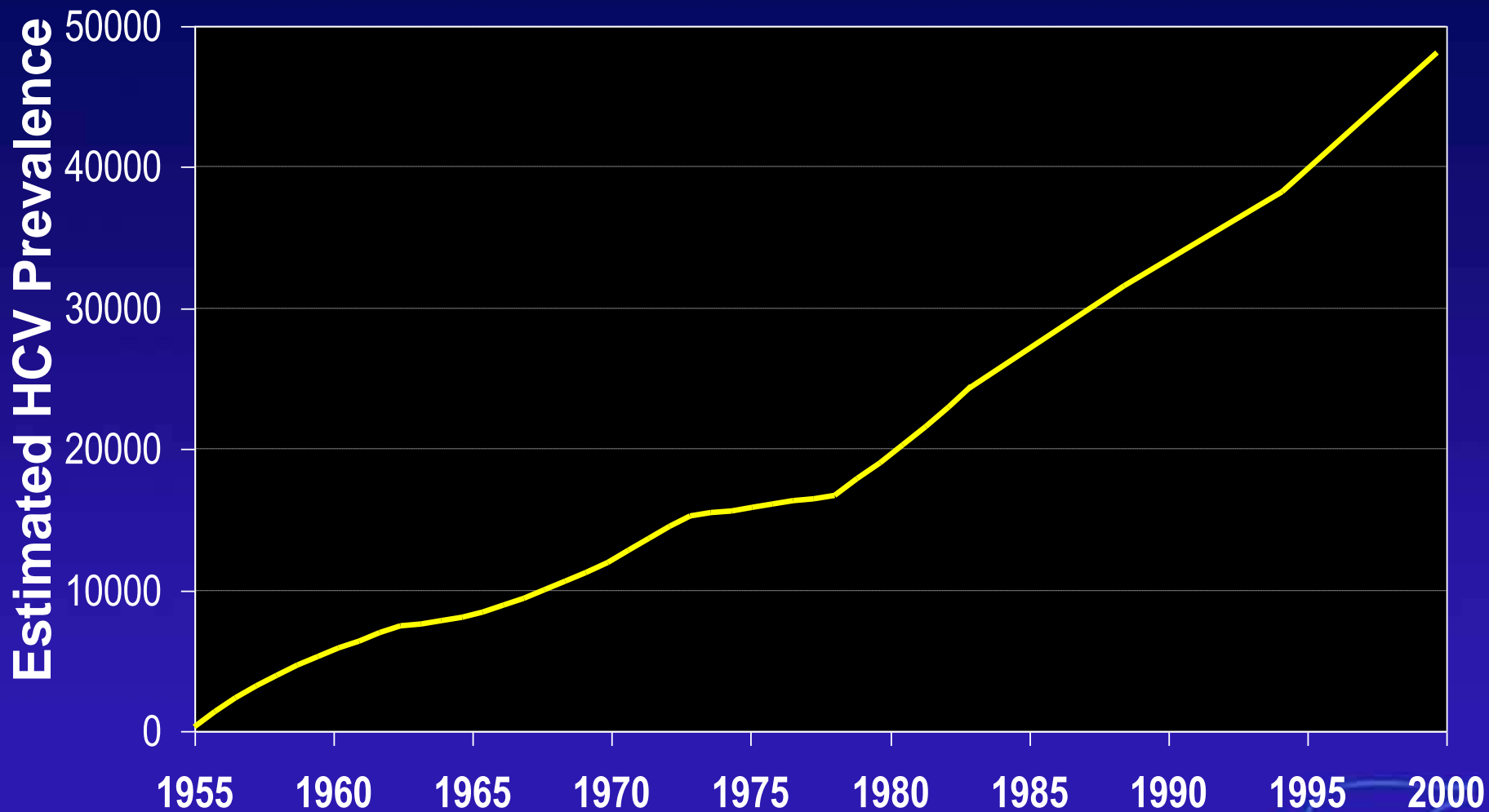
Hepatitis C

Over 3 Million
Americans
Are Infected
With the
Stealth Virus.
Most Don't
Know It.



Trends in Hepatitis C

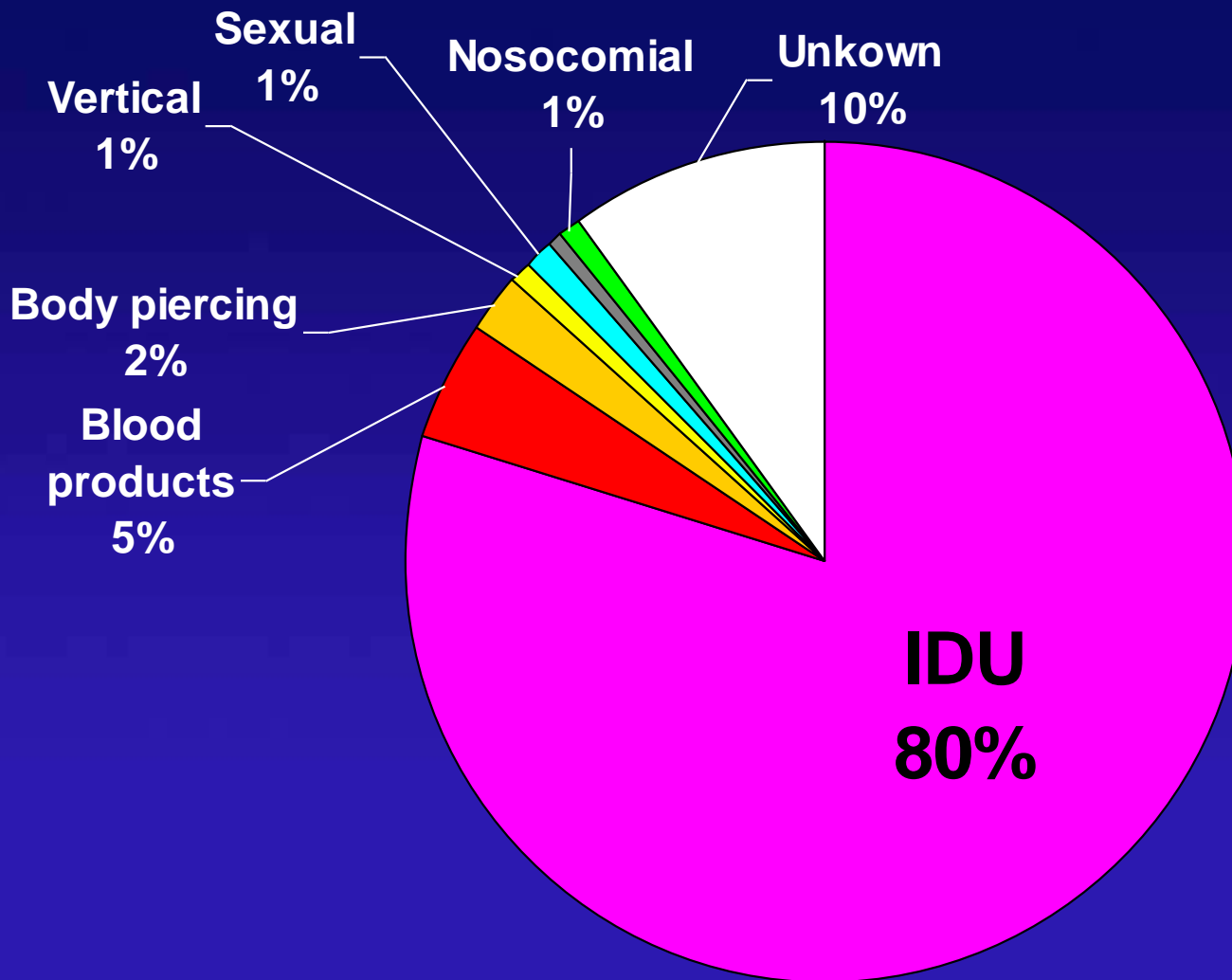
Prevalence of HCV infection in NZ



Nesdale, Baker, Gane, 2000

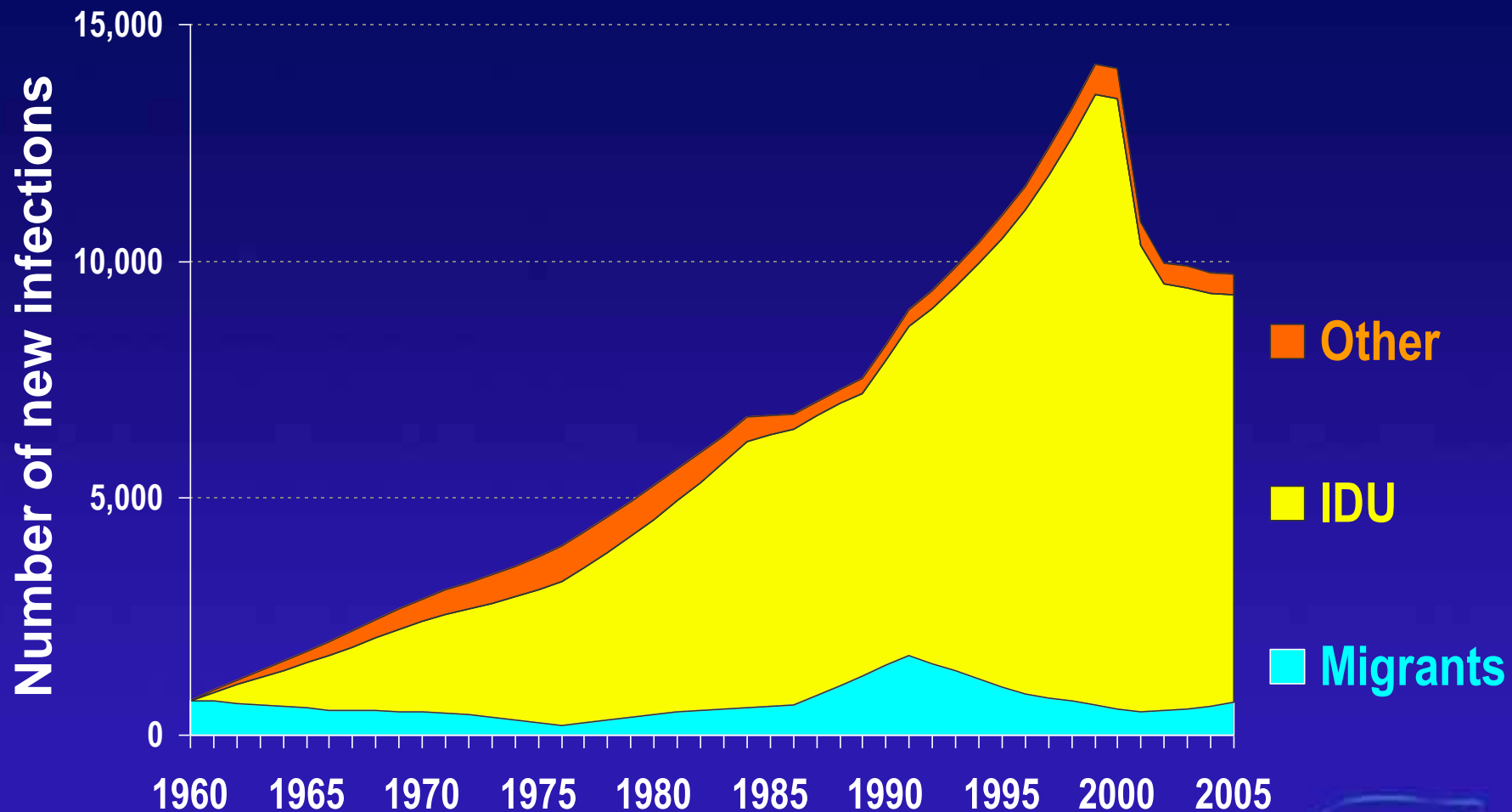
Epidemiology of Hepatitis C

Risk Factors for HCV infection



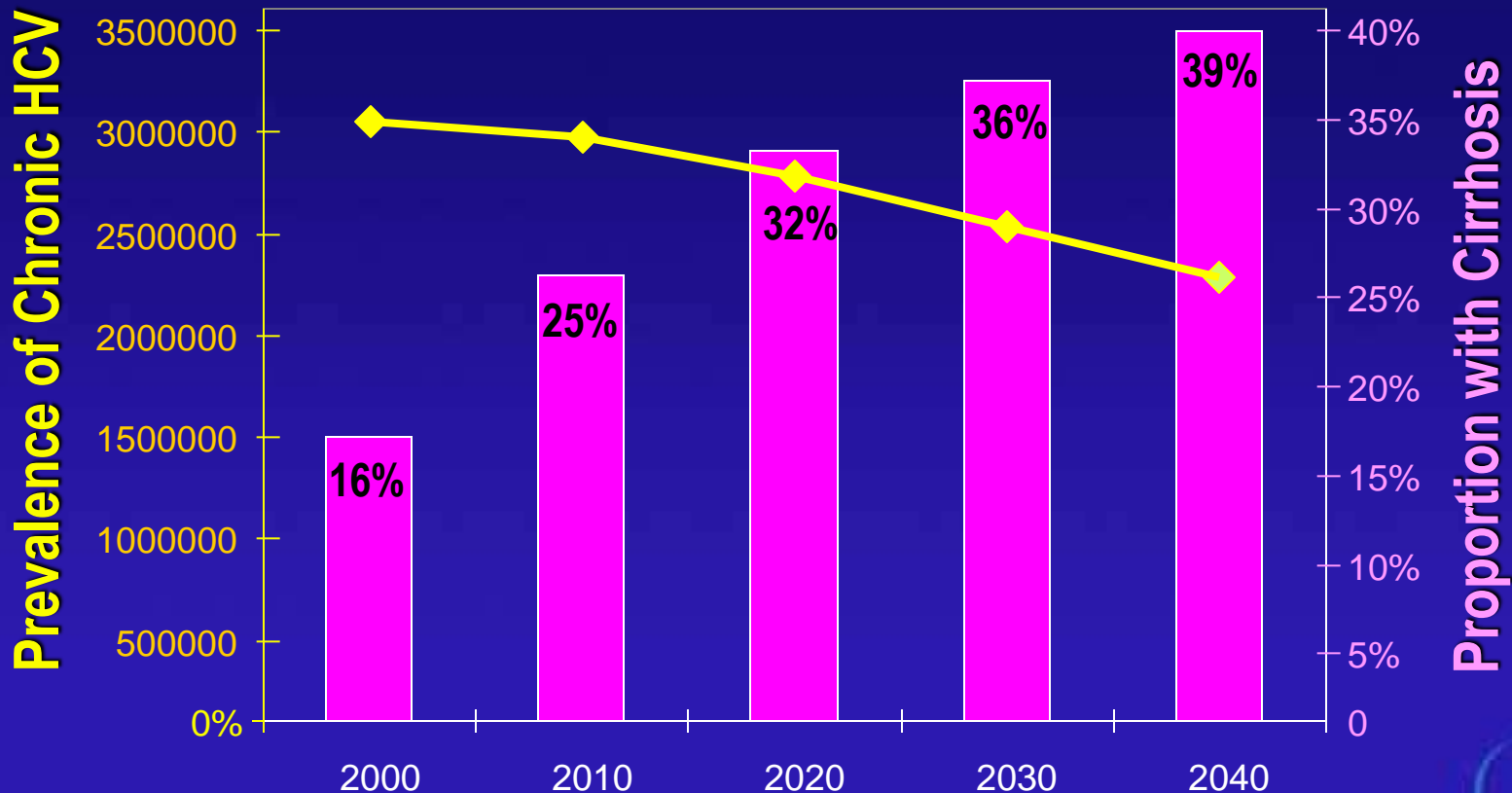
Trends in Hepatitis C

Incidence of HCV in Australia



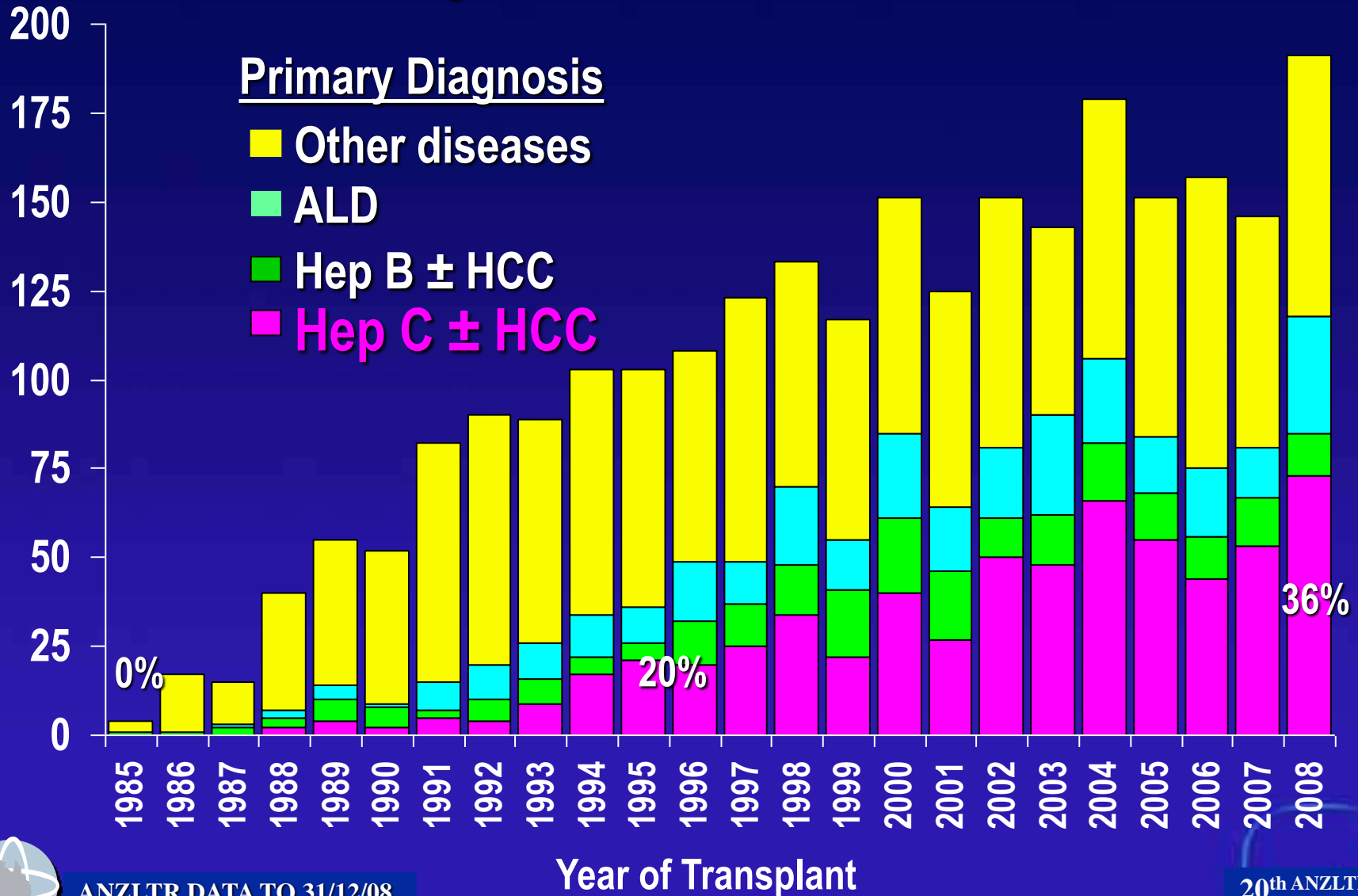
Chronic Hepatitis C - the Problem

1. Falling prevalence but aging cohort



HCV Epidemiology and Trends

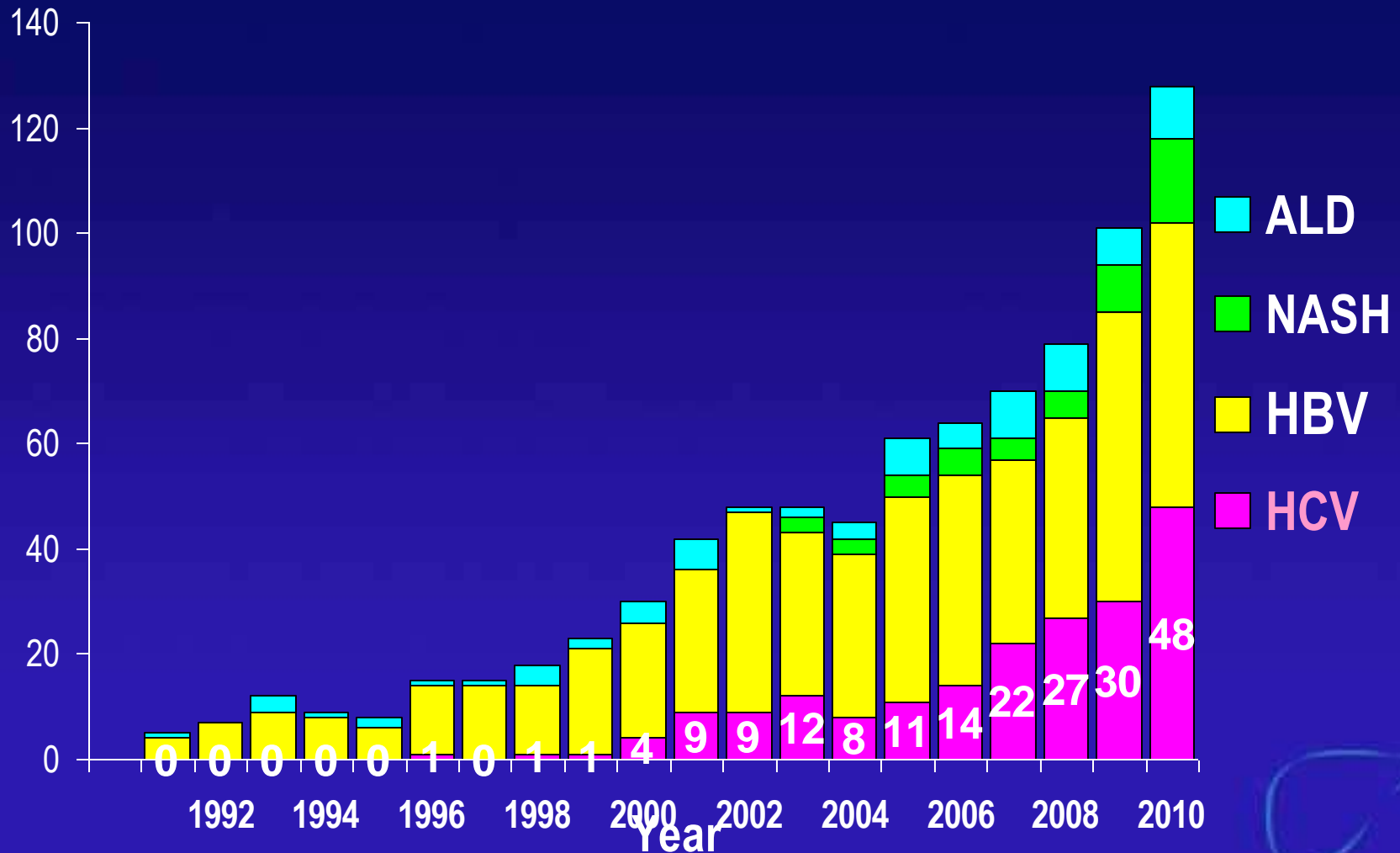
Liver Transplantation in Australia/NZ



HCV Epidemiology and Trends

Liver Cancer at Auckland Hospital

1990-2010 (n=848)



HCV diagnosis and staging

- **Symptoms and Signs**

- » Unhelpful as nonspecific until advanced cirrhosis

- **Anti-HCV ELISA screening assay**

- » Inexpensive (\$15), performed daily at all labs

- » Reflects HCV exposure, not active infection

- ▢ may persist after viral clearance

- **Serum HCV RNA PCR assay**

- » Expensive (\$250), performed weekly only at reference laboratories

- » Confirms active infection

- **Liver Function Test**

- » POOR marker of liver injury in HCV

- » Need liver biopsy or Fibroscan

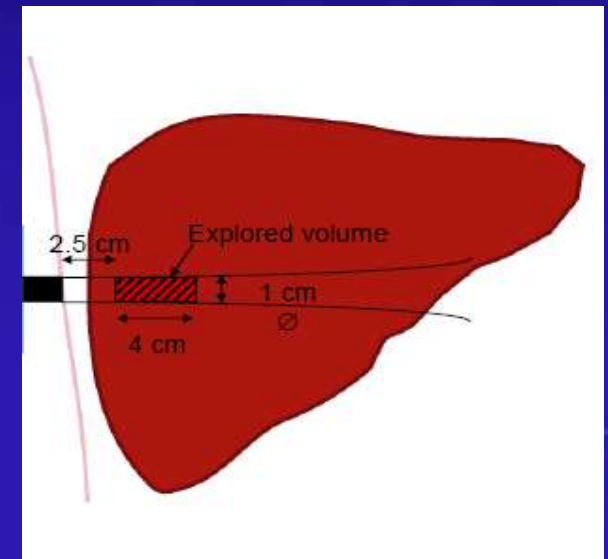


Fibroscan

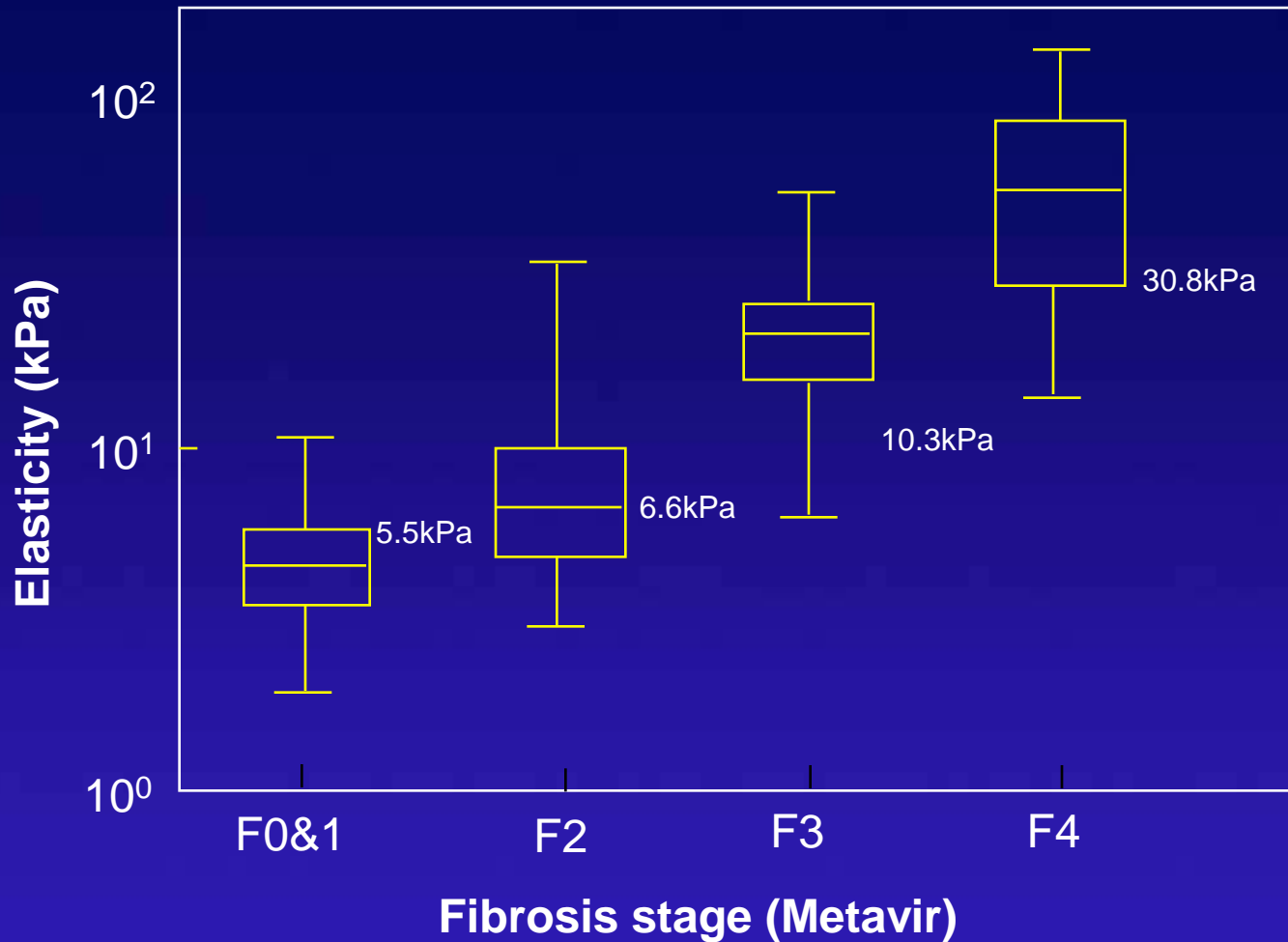


Fibroscan

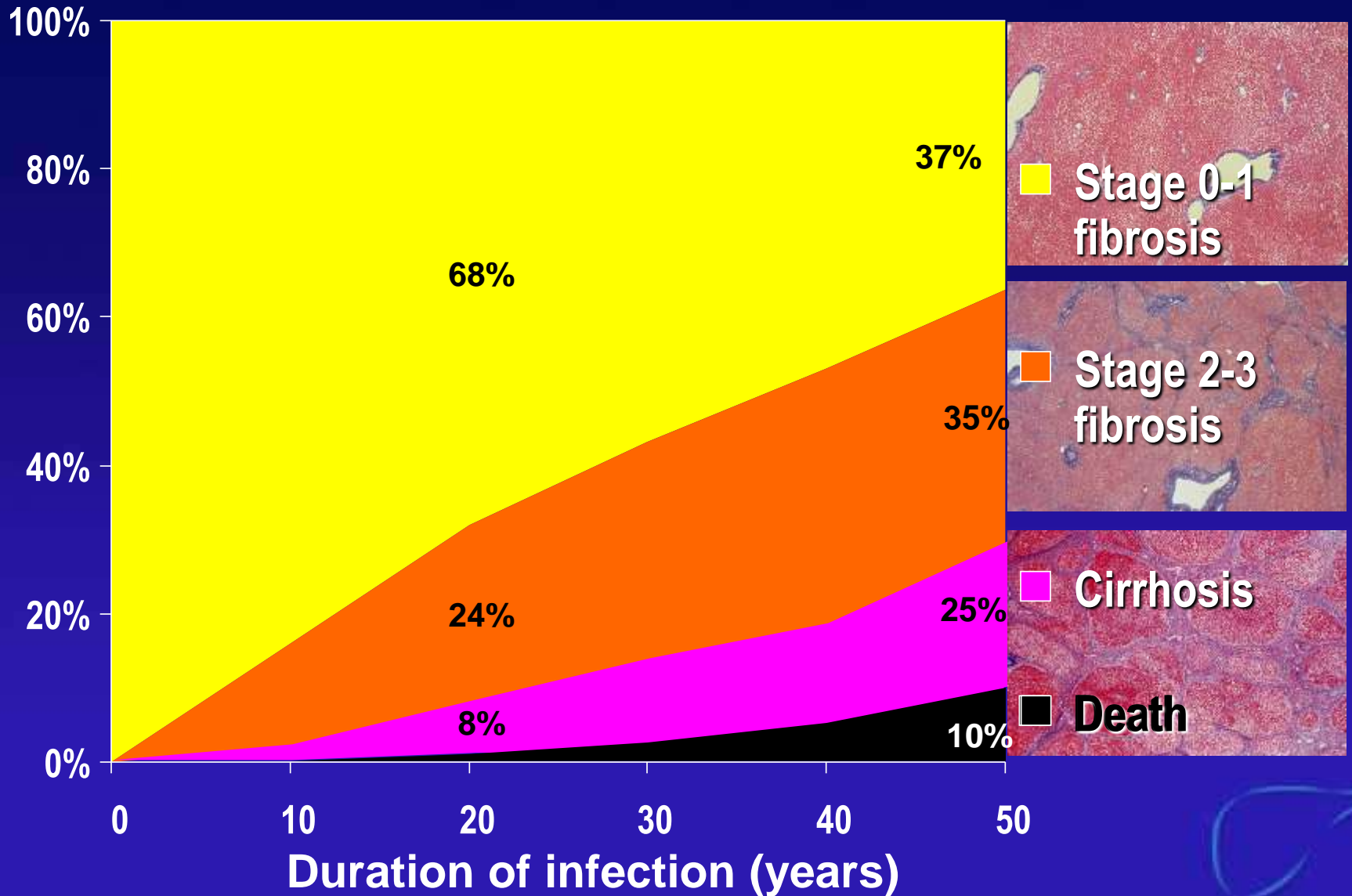
- Painless, noninvasive
 - Takes 2-3 minutes
 - Performed in clinic
 - No sedation
 - No complications
-
- Measures 1/500 of liver (c.f. biopsy=1/50,000)
 - Less sampling error



Fibroscan in Chronic Hepatitis C



Natural History of Chronic Hepatitis C



Factors associated with rapid progression to cirrhosis

- **Alcohol > 5 drinks/day**
 - » Paralyzes immune response to HCV
 - ☐ Increases HCV replication + injury
 - » Keep below ALAC guidelines
 - » Nil if cirrhosis or on IFN
- **Cannabis >2 joints per day**
 - » Cannabiloid receptors in liver
 - » low dose may help with IFN tolerability
- **Metabolic syndrome**
- **Immunosuppressed (HIV/transplant)**

Life-Style Advice Sexual Transmission

	<u>No.</u>	<i>Follow-up</i>	<i>%Partner ⇒ HCV+</i>
<u><i>Mothers (contaminated anti-D)</i></u>			
<i>Meisel, 1995</i>	(94)	15 years	0%
<i>Power, 1995</i>	(393)	20 years	0.3%
<u><i>Haemophiliac (contaminated FVIII)</i></u>			
<i>Hallam, 1993</i>	(104)	16 years	0%
<i>Bresters, 1993</i>	(50)	13 years	0%
<u><i>Intravenous drug use</i></u>			
<i>Zylerberg, 1999</i>	(1640)	12 years	0.2%
<i>Vandelli, 2004</i>	(776)	10 years	0%

Life-Style Advice

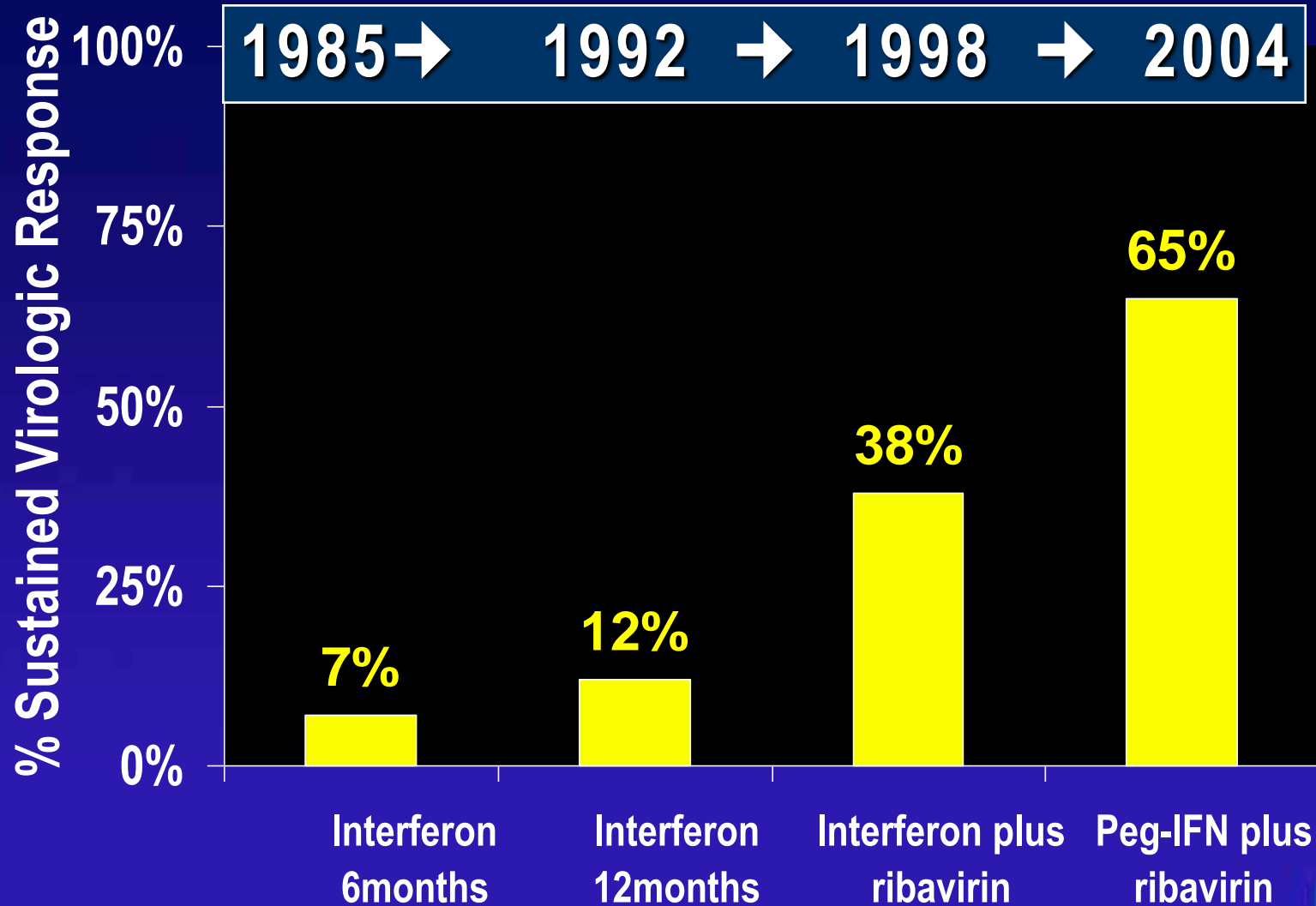
Mother-to-infant Transmission

<i>Author</i>	<i>(n)</i>	<i>follow-up</i>	<i>% children ⇨ HCV RNA+</i>
<i>Lam,1992</i>	<i>(66)</i>	<i>12 months</i>	<i>6%</i>
<i>Ohito,1994</i>	<i>(54)</i>	<i>6 months</i>	<i>5%</i>
<i>Conte,2000</i>	<i>(370)</i>	<i>18 months</i>	<i>5.1%</i>
<i>Gibb,2000</i>	<i>(441)</i>	<i>18 months</i>	<i>6.7%</i>

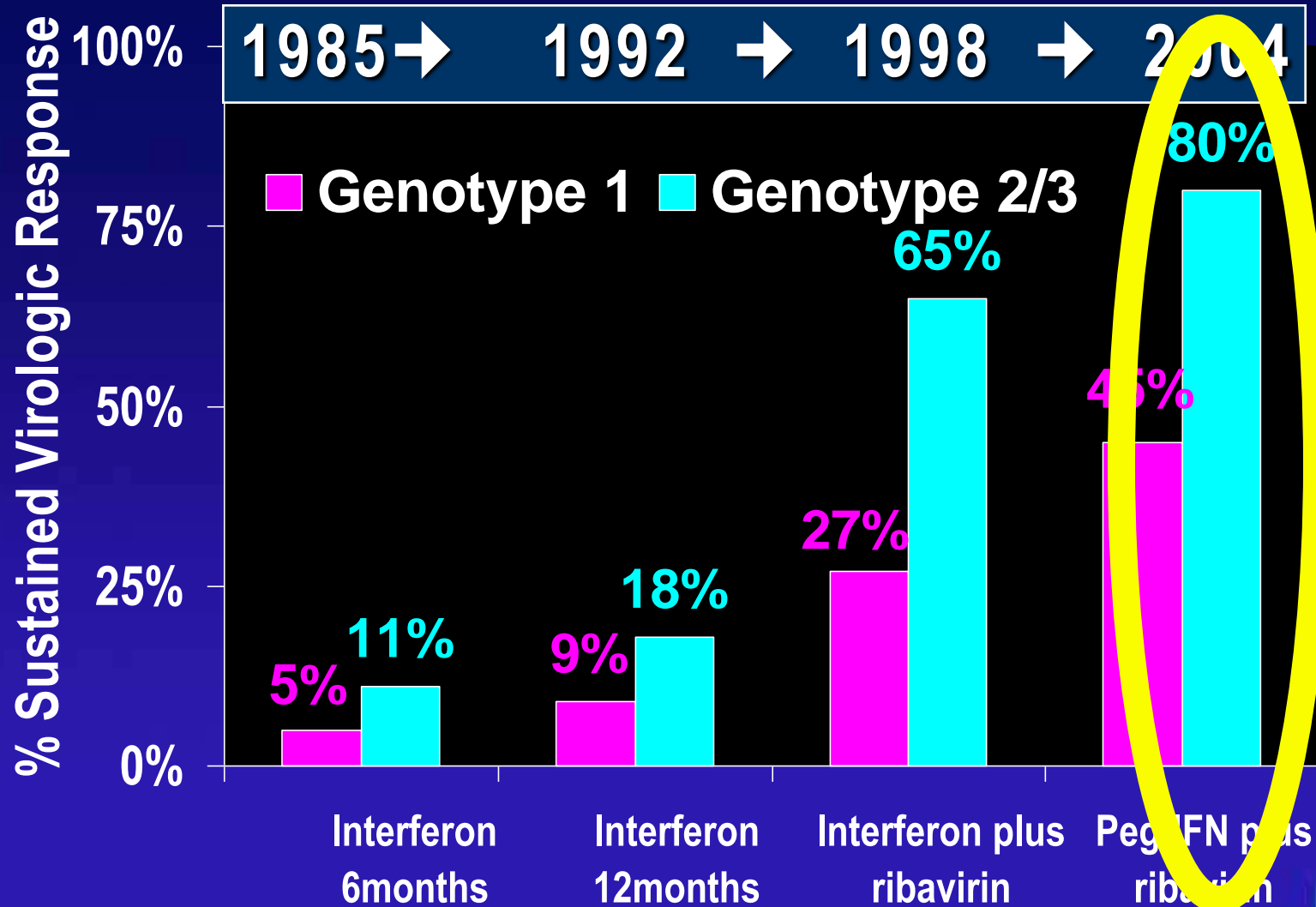
- Breast feeding is safe



Treatment of Chronic Hepatitis C Efficacy



Treatment of Chronic Hepatitis C Efficacy



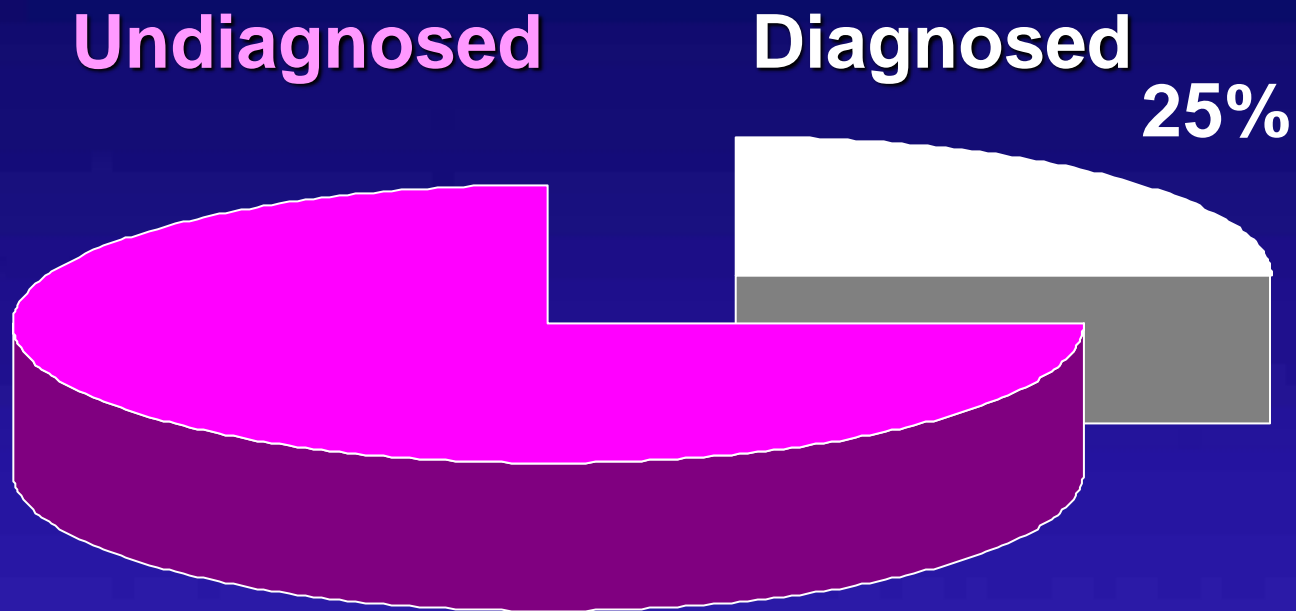


Treatment of Hepatitis C

Safety

1. Flue syndrome in 100%
2. Anorexia, weight loss in 100%
3. Insomnia in >90%
4. Bone marrow suppression in >50%
5. Hypothyroidism in 5%
6. Depression/anxiety in 40%
 - ➔ Relationship/work problems
 - ➔ Suicide in 1%
 - Due to serotonin depletion from CNS
 - Prevented by SSRIs

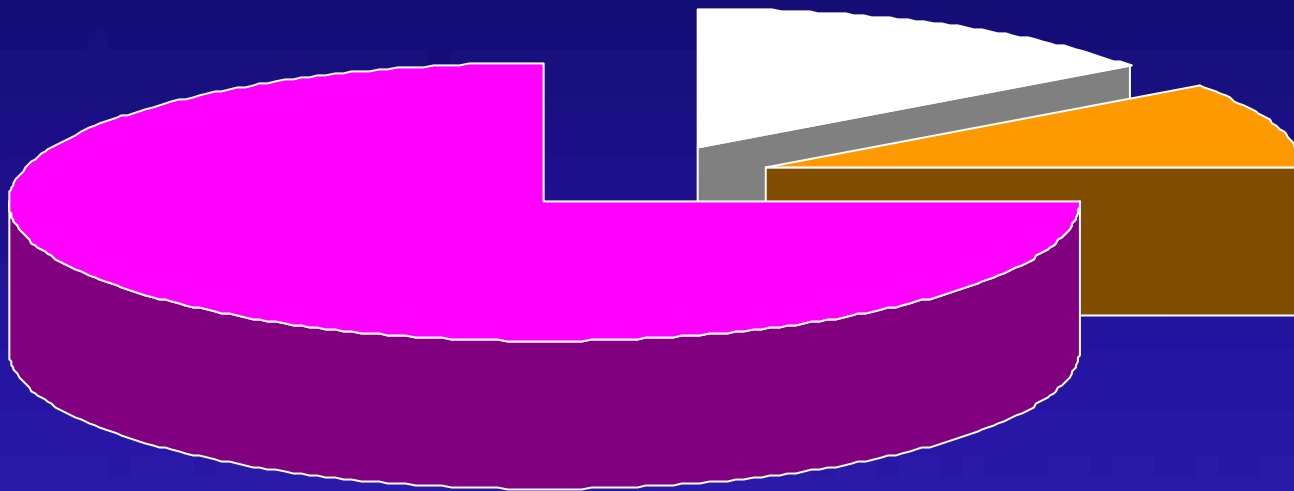
Chronic Hepatitis C is an Unmet Need



Chronic Hepatitis C is an Unmet Need

Accept refer to clinic

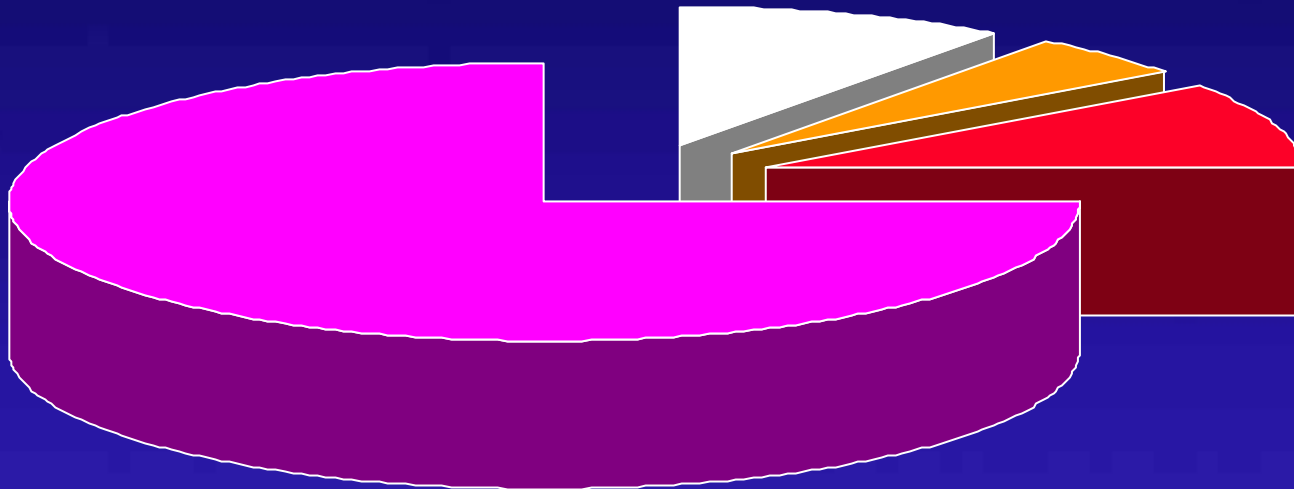
15%



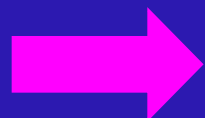
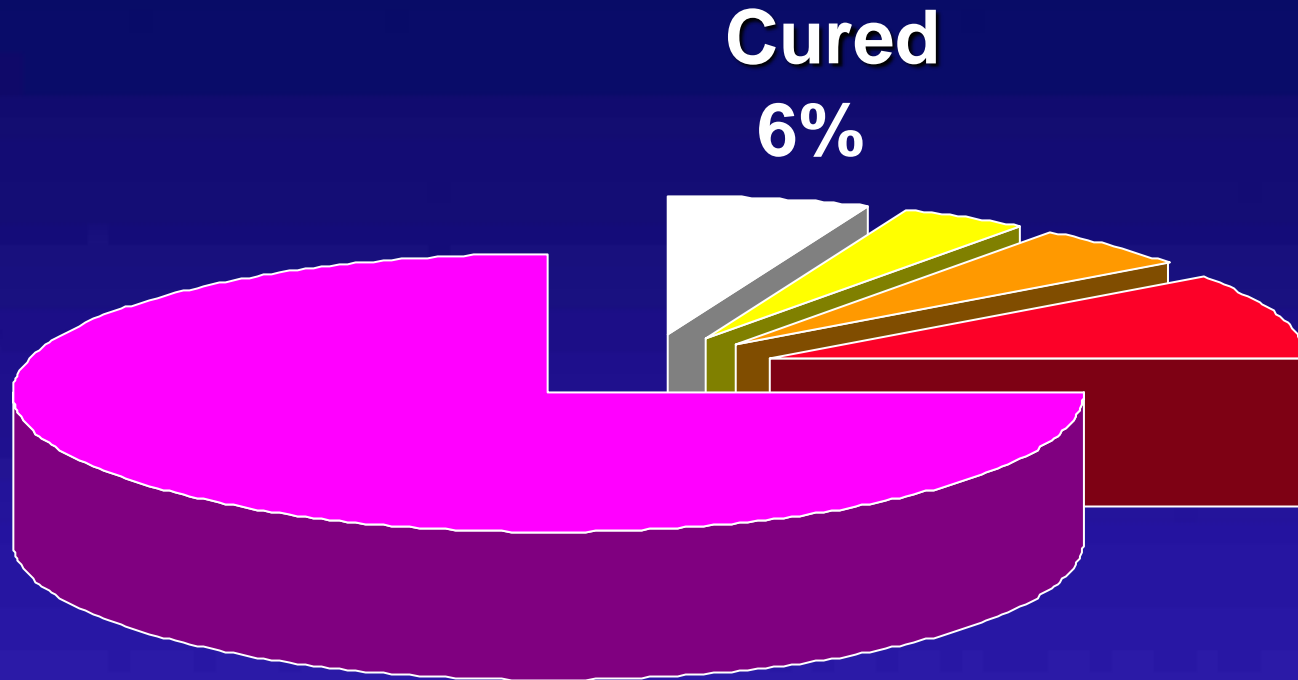
Chronic Hepatitis C is an Unmet Need

Suitable for IFN

10%

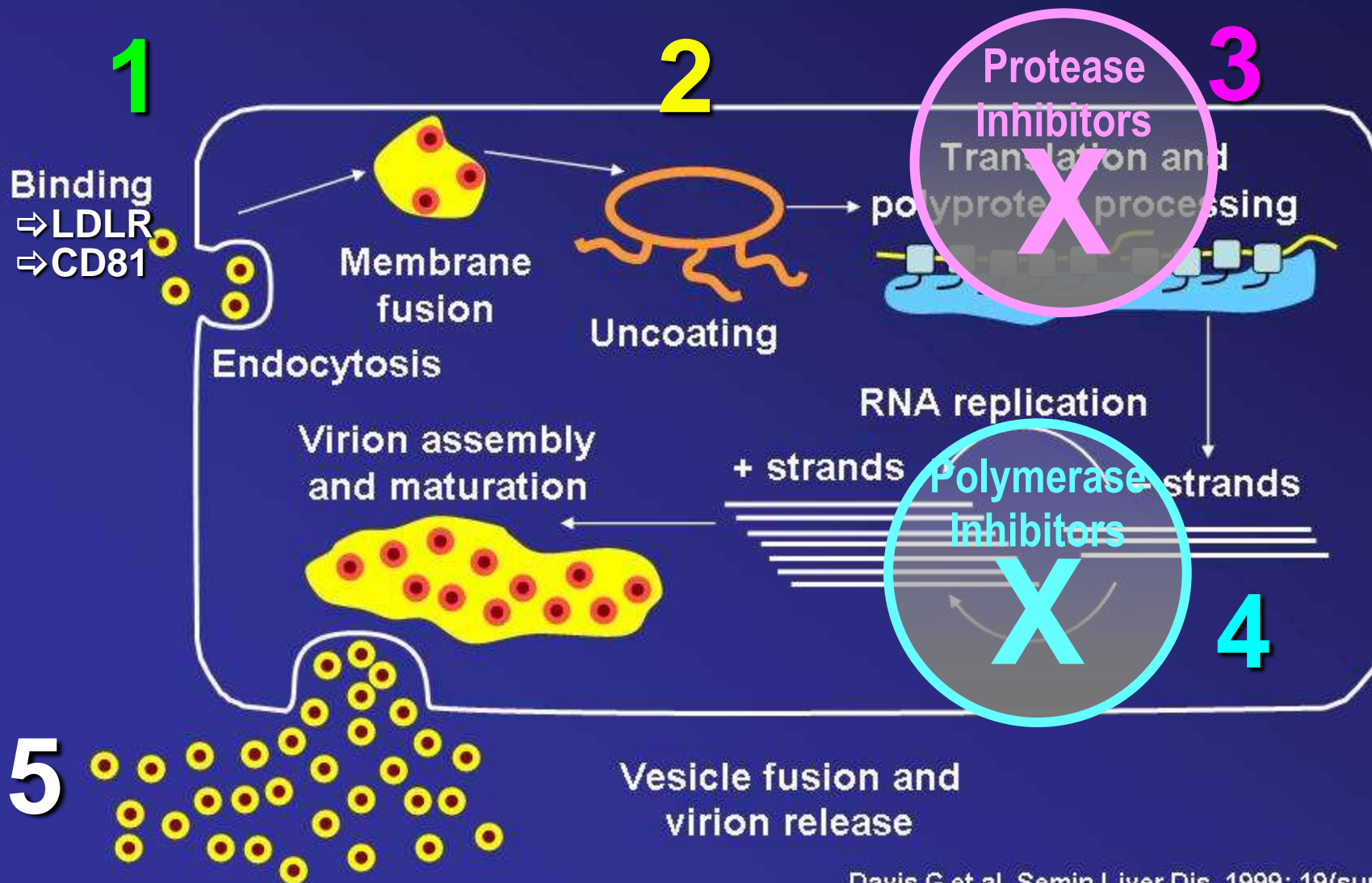


Chronic Hepatitis C is an Unmet Need



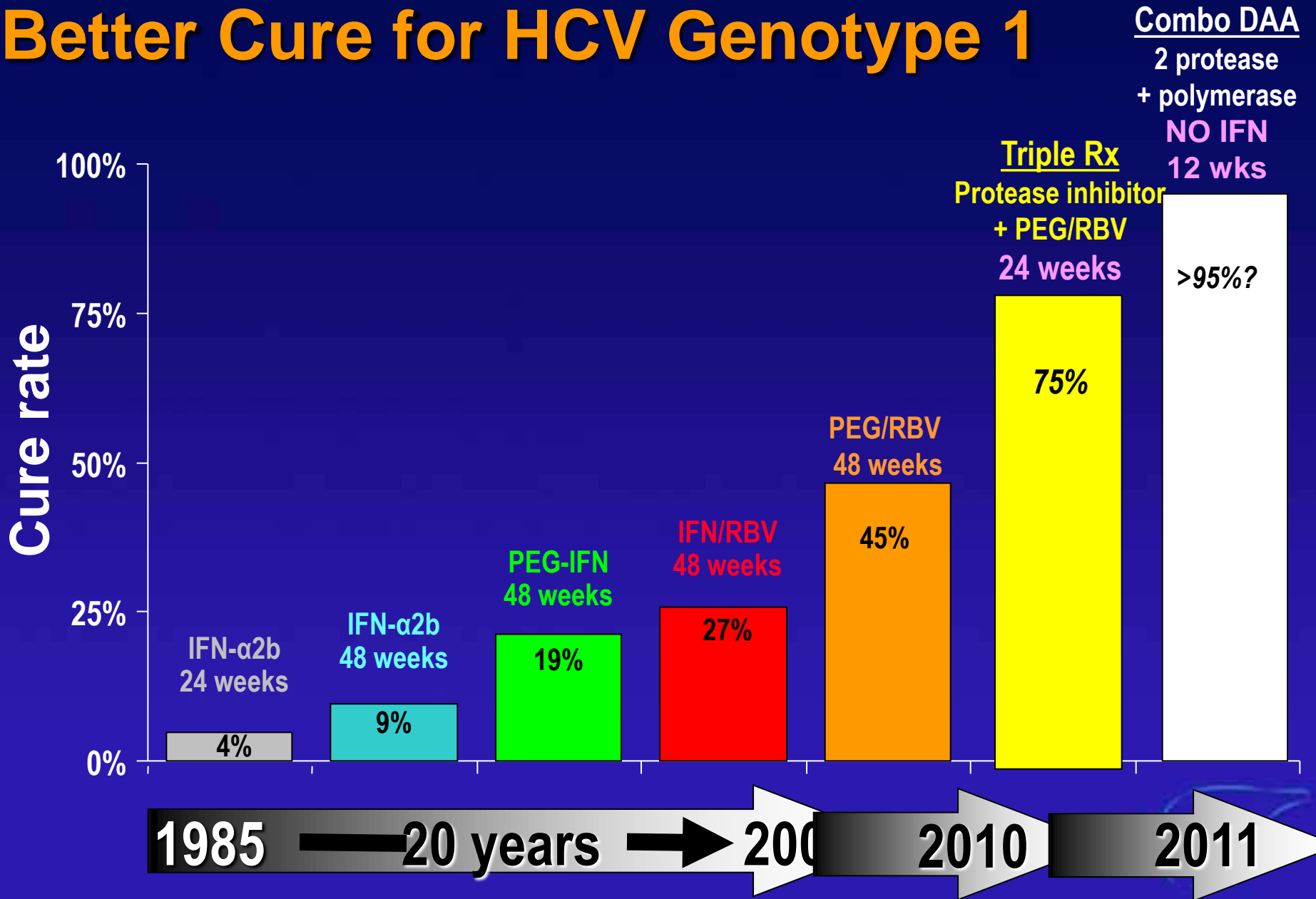
NEW THERAPUTIC APPROACHES

Direct Acting Antivirals (DAAs)



Future Trends in HCV Therapy

Better Cure for HCV Genotype 1



Hepatitis C in New Zealand

The Problem

- **50,000 have HCV infection**
- **Additional 20 infected each week**
 » *no vaccine*
- **>2000 already have cirrhosis**
- **60 deaths/transplants per year**
- **only 1/10 have been treated**



Hepatitis C in New Zealand

The Solutions (1)

- 1. ↓ rate of progression to cirrhosis**
 - ➔ reduce alcohol, cannabis, obesity
 - ➔ Treat with antiviral therapy
- 2. New more effective, safer therapies**
- 3. Better access to treatment**
 - » Increased hospital clinics
 - » “Shared care” with General Practice
- 4. Better awareness and ↑ earlier diagnosis of all at risk**




BLOOD ISSUES

- *Hon Pete Hodgson, Minister of Health, 11.30
Tuesday, 5 December 2006*

“A \$30 million package to provide one-off payments to an estimated 550 people is part of a way forward for people who were infected with hepatitis C through the New Zealand blood supply”

“In addition, the Government is providing \$5 million a year to improve access to and uptake of hepatitis C treatment services.

The HCV Treatment Advisory Group is being set up to assist the Ministry and DHBs improve services to all people with hepatitis C. The advisory group will include consumer, clinical and district health board representatives”.



HCTAG Terms of Reference

- **Aims**

1. Analyse existing delivery of hepatitis C treatment (nationwide stocktake of DHB HCV services)
2. Identify priority interventions that could improve services and patient outcome



DHB Stocktake of HCV Treatment Services

- Questionnaires sent to every DHB May 2007
 - » 16 of 21 replied by 10 2007;
- Analysed, returned to DHBs for review;
 - » 20 of 21 replied (not MidCentral)
- Further analysis (Robyn Brown)

Key Performance Indicators

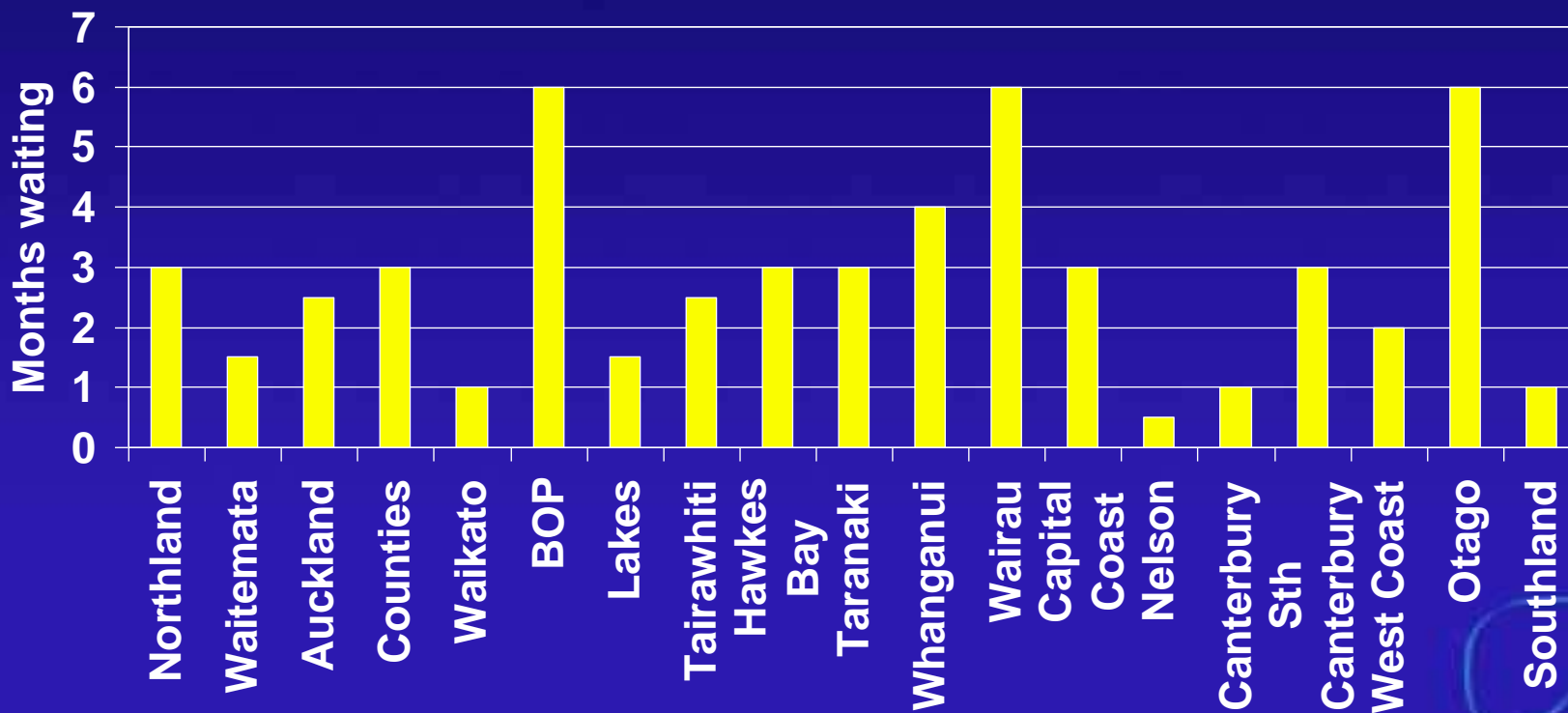
- Referral: what information
- First Assessment
- Treatment
- General Statistics
- Waiting Times
- Other



DHB Stocktake of HCV Treatment Services

Important issues identified

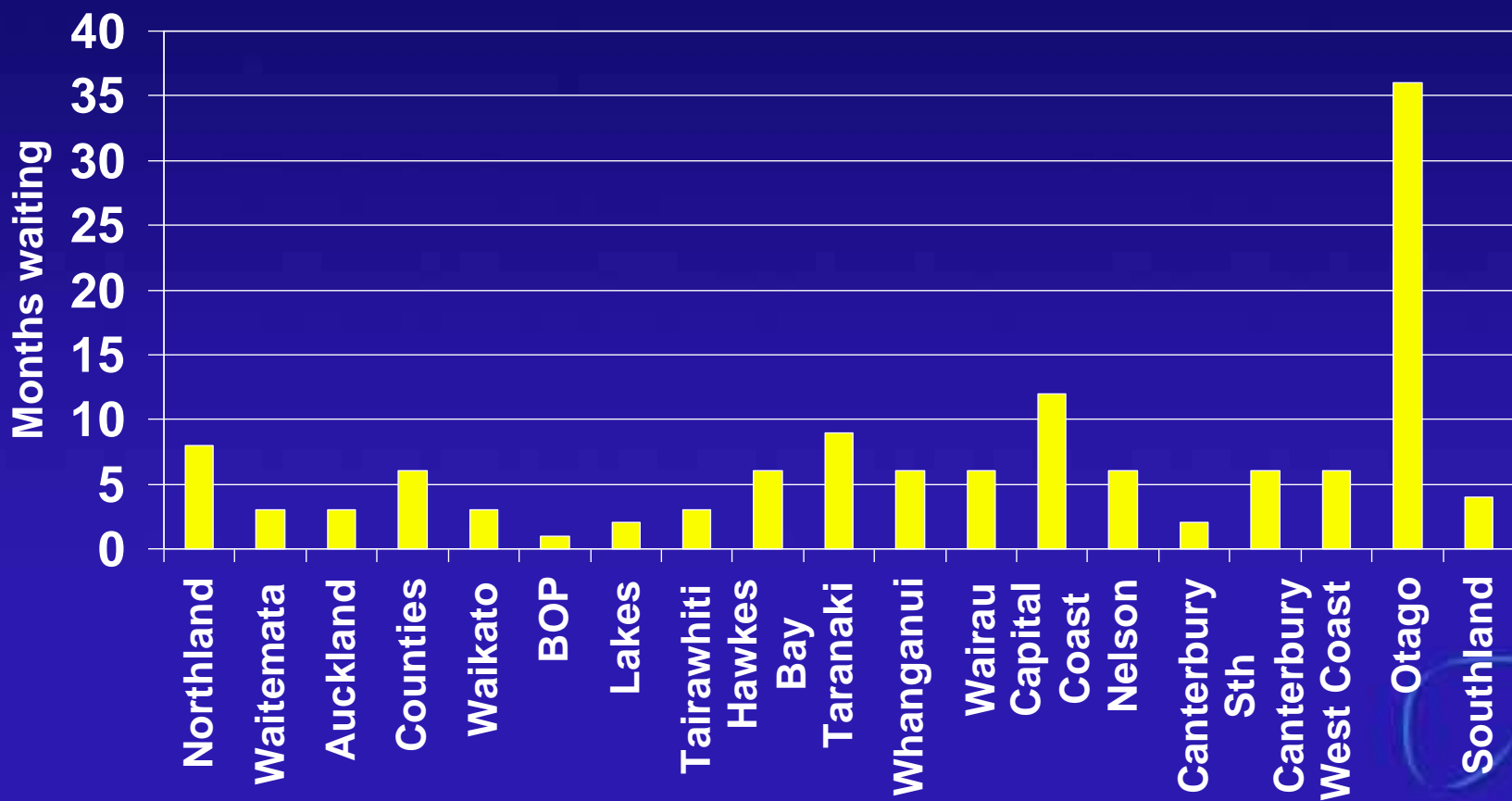
29. *If someone with hepatitis C is referred this week from their GP, what is the approximate waiting time for an initial specialist assessment at your hospital?*



DHB Stocktake of HCV Treatment Services

Important issues identified

32. What is the approximate time interval between receipt of initial referral from GP, to first time specialist appointment, to commencement of antiviral therapy?



Strategic Directions for Hepatitis C

To improve access to and uptake of treatment services for hepatitis C

Submitted by HCTAG in May 2009
Approved by Minister in July 2009



*This document is available on the Ministry of Health's website:
<http://www.moh.govt.nz>*



Strategic Directions for Hepatitis C: 4 Key Action Areas

- 1. improving knowledge of HCV among primary health care providers**
- 2. improving the knowledge of HCV prevalence in the New Zealand population and within high-risk groups**
- 3. increasing percentage of all people with HCV who have had the disease diagnosed**
- 4. improving HCV treatment services**



Hepatitis C

On-line E-learning module GP & Practice Nurse Survey

- **100% GPs and 92% Nurses felt their knowledge of HCV was poor**
- **40% GPs and 39% Nurses were concerned about being infected from HCV+ patient**



Hepatitis C



Strategic Directions for Hepatitis C: Key Action Areas

1. **improving knowledge of HCV among primary health care providers**
 - **On-line E-learning module for all primary care providers**



Hepatitis C



On-line E-learning module GP & Nurse Survey

Feedback on e-Learning tool

- 1. On-line**
- 2. Accessible from home**
- 3. Easy to navigate and return to on multiple occasions**
- 4. Brief 30-40min**
- 5. Quiz at end**
- 6. Qualify for CME points**
- 7. Printable certificate**



Hepatitis C




Hepatitis C E-Learning for GPs

LearnHealth ► Hep C - Doctors

Welcome

Learn about hepatitis C by working through the five learning modules below. Gain 1 CME credit by passing the assessment, completing the evaluation and then printing your certificate.

Access a range of resources to support you in your day-to-day work.

 [Help on using this programme.](#)

Learn About

15 min

What Is Hepatitis C

Start >

15 minutes

Identifying Hepatitis C

Start >

15 minutes

Diagnosing Hepatitis C

Start >

25 minutes

Treating Hepatitis C

Start >

10 minutes

The Future - Hepatitis C

Start >

Gain Accreditation

Assessment

Your feedback

Print your certificate 

Post-Learning Support

Quick facts

- ▶ What Is Hepatitis C
- ▶ Identifying Hepatitis C
- ▶ Diagnosing Hepatitis C
- ▶ Treating Hepatitis C
- ▶ The Future - Hepatitis C

Resources

- ▶ Patient Information Sheet
- ▶ GP Communication Guide
- ▶ Testing & Treatment Pathway
- ▶ Referral Form
- ▶ Programme References & Additional Reading

Got a question? Ask the experts

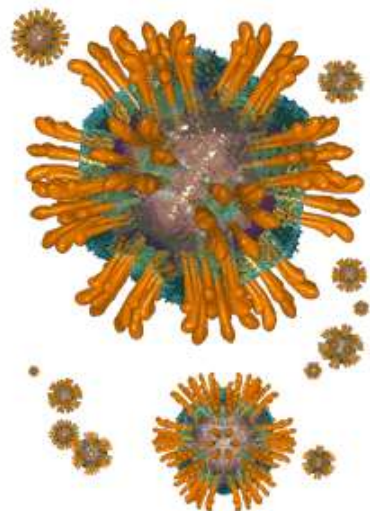
Find out more >

Join the conversations

Find out more >



What is Hepatitis C?



Hepatitis means 'inflammation of the liver'. The infection may be either acute or chronic. Common causes of hepatitis are viruses or medicines (prescribed, recreational or complementary alternative medicines).

The hepatitis C virus (HCV) is an **RNA** virus, a member of the **flaviviridae** family. As a single stranded RNA virus, HCV has a very high transcription error rate and produces 100 million mutations every day. As a result, every infected person carries hundreds of slightly different strains of virus (quasispecies). This rapidly changing virus evades attempts of protection by either vaccine or immunoglobulin preparations.

Over the last century, the virus has evolved into 6 phylogenetically different **genotypes** and 11 subtypes.

“ 200 million people are **infected with HCV** - **3%** of the world's population ”

“ An estimated **45-50,000 New Zealanders** are currently infected with HCV ”

Number of **Genotypes**: 6

Number of **Sub-types**: 11



Hepatitis C Misconceptions

There are a number of misconceptions about hepatitis C.

Which of the following statements is true?

- HCV is 20 times more prevalent than HIV
- The main route of transmission for HCV and HIV is sexually
- HCV may be vaccinated against but HIV cannot
- HCV infection, like herpes viruses, HIV and HBV infections, are never curable as there are hidden reservoirs for the virus
- After infection with HIV and HCV, people become symptomatic within 1-2 months

Confirm

What Is Hepatitis C?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

< Back Next >

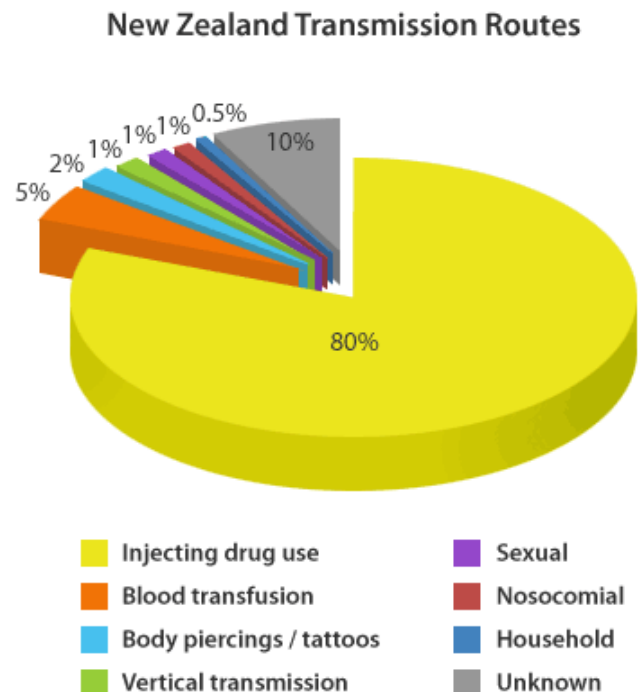


Transmission Routes

HCV is transmitted via blood. This occurs through a number of different routes:

- **Injecting drug use (IDU)** via infected equipment
- **Body piercing or tattooing** via infected needles
- **Vertical transmission** - HCV positive mother to child
- **Sexual contact** via exposure to infected blood
- **Blood transfusion** via infected blood
- **Household transmission** via infected toothbrushes or shavers
- **Nosocomially** via infected equipment, organs or blood
- **Unknown.**

The chart shows transmission routes of known New Zealand infections.

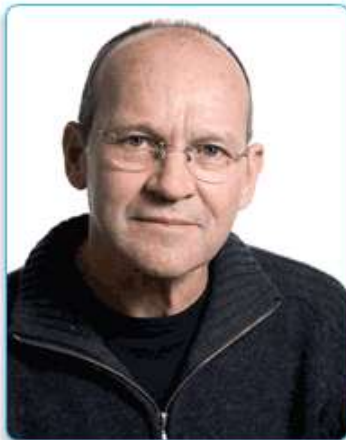


Health Care Worker Risks

Needlestick injuries are a risk many health care workers must deal with. However, the risk of infection from an HCV infected needlestick injury is very low (0.2%) compared with the risk from an HBV infected needle (10-20%).

Paul believes he contracted hepatitis C through a needlestick injury while working as a staff nurse at Auckland Hospital, almost 30 years ago.

Use the controls to hear what Paul has to say.



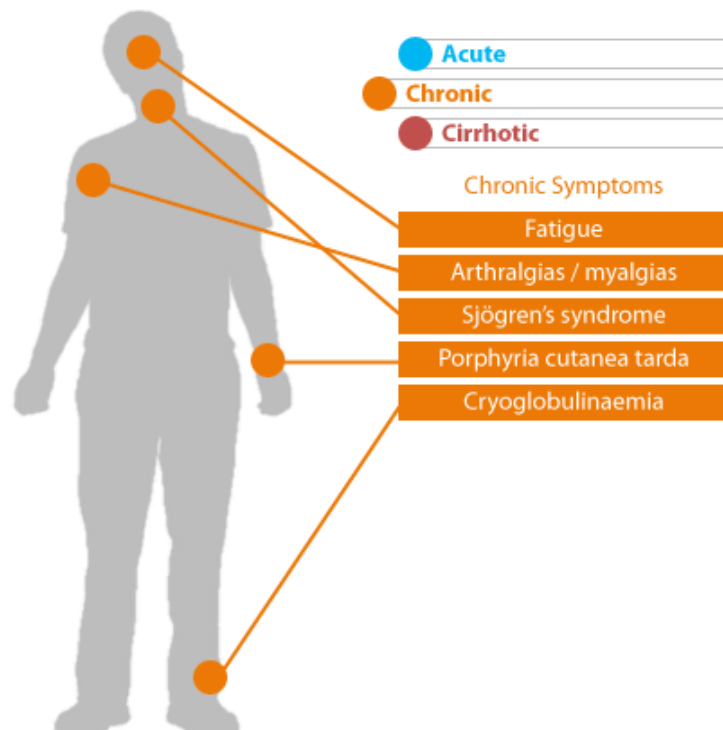
Paul, staff nurse

“ ..medical professionals did not even wear gloves when handling blood products or utensils. ”



Fortunately, New Zealand now practices higher standards of care. This risk is avoidable and practising standard precautions should eliminate any risk of an infection from an infected individual.

Symptoms And Signs



Symptoms of chronic hepatitis C include both hepatic and non-hepatic symptoms:

- Certain non-hepatic symptoms including lethargy and low-mood are common to most individuals
- Hepatic signs are usually confined to individuals with **cirrhosis** complications.

Click and rollover the highlighted parts of the image to learn more about the symptoms and signs of hepatitis C in both acute and chronic phases.

Porphyria cutanea tarda (PCT)

Hepatitis C is thought to inhibit bilirubin metabolic pathways within the liver cell, leading to hepatic overproduction of porphyrins and skin vesicle formation. Blistering is precipitated by ultraviolet exposure and therefore usually presents on the face or hands.

Appropriate management of PCT involves protection from sunlight and trauma, avoidance of alcohol excess and venesection. Eradication of HCV infection by antiviral therapy is associated with long-term remission of this skin disorder.

If you rely on **symptoms and signs** to diagnose chronic hepatitis C infection, you will diagnose it **too late** to be useful.

Side Effects Of Treatment



Use the controls to pause or rewind the video. Click the Show Captions button to display text alternative.

Treating Hepatitis C

- 1
- 2
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- 18

< Back Next >

Objectives of the 5 Learning Modules

Discuss critical facts about hepatitis C	<i>Virology, epidemiology, natural history,</i>
Identify individuals at risk of carrying HCV	<i>key questions, symptoms and signs</i>
Diagnose individuals with suspected hepatitis C	<i>Tests & results, pre/post-test discussions, referral</i>
Support patients receiving treatment	<i>Medications, treatment, managing side-effects</i>
Discuss treatments available in the future	<i>Future medications, shared care</i>

CME Credits

- You will receive 1 CME credit if you complete all of the following activities:
 1. Pass the assessment (20 questions) with a score of 70% or more
 2. Complete a brief course feedback form
 3. Print your certificate of achievement

GOES LIVE

RNZCGP Annual Meeting

Christchurch 2nd September

