



Scotland's Action Plan on Hepatitis C

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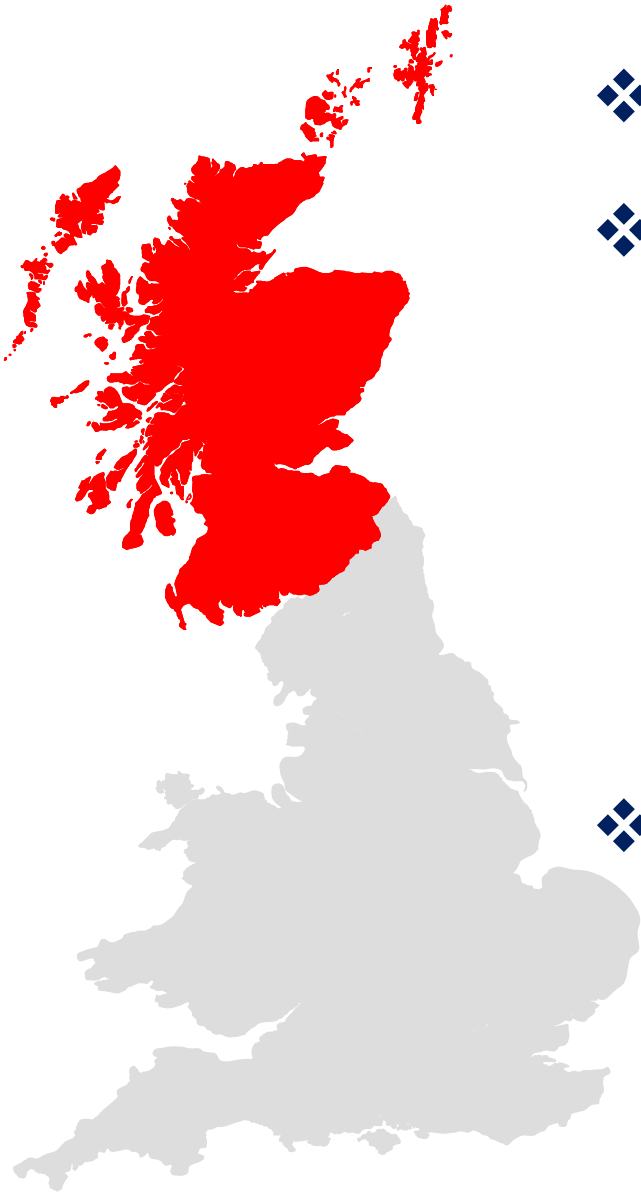
Outline

❖ Background

❖ Scotland's Action Plan on Hepatitis C

- Aims
- Principles and characteristics
- Progress in preventing, diagnosing and treating infection

❖ Future challenges



Background



❖ National Health Service (NHS)

- Publicly funded health care system in the UK
- Free at point of access

❖ Scottish Government

- Devolution from UK Government in 1999
- Responsibility for health
- Allocates resources, sets national objectives and priorities, monitors performance

❖ Scottish NHS

- **14 NHS Boards** plan, commission and deliver health services
- Serves population of 5.3 million people



Country (Latest estimates)	Canada*	Scotland
Population	35 million	5 million
HCV prevalence (chronic)	0.7%	0.7%
→ % Ever injected	60%	90%
→ % Ever diagnosed	70%	55%
→ % Mild disease	60%	60%
→ % Treated per annum	1.4%	3%

** Dore et al. JVH 2014; Remis et al. Public Health Agency Canada 2007.*

Hepatitis C milestones

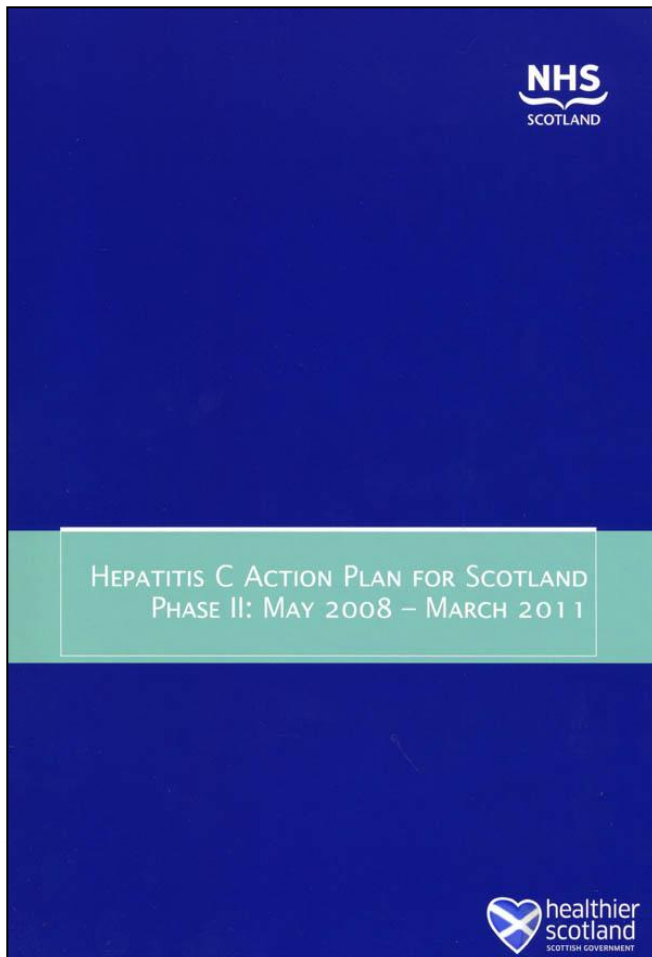
1989	Discovery of HCV
1991	Antibody Test
1992	Interferon Therapy
1996	Hepatitis C Diagnosis Database
1996-2002	Prevalence Surveys
1998	Interferon + Ribavirin Therapy
1999	Hepatitis C Needs Assessment
2001	Pegylated Interferon + Ribavirin Therapy
2001	UK Hepatitis C Trust
2003	UK Hepatitis C Resource Centre
2003-2007	Clinical Database established
2004	Hepatitis C Consensus Conference (RCP, Edin)
2004	Parliamentary Working Group on Hepatitis C
2005	Hepatitis C Projections published
2006-2008	Action Plan Phase I
2006	SIGN Guidelines on clinical management
2007	Public Enquiry: Hepatitis C infection through NHS Treatment
2008-2011	Action Plan Phase II

Scotland's Hepatitis C Action Plan

Aims

- To **prevent** the spread of hepatitis C, particularly among people who inject drugs (PWID)
- To **diagnose** hepatitis C infected persons, particularly those who would most benefit from treatment
- To ensure that those infected receive optimal **treatment, care and support**

Action Plan: Principles & Characteristics



- Robust evidence base
- High-level actions & extensive consultation process
- Strong governance and clear accountability
- Leadership and coordination
- Multidisciplinary approach
- Serious investment
- Monitoring and performance measures

Action Plan: Principles & Characteristics



HEPATITIS C ACTION PLAN FOR SCOTLAND
PHASE II: MAY 2008 – MARCH 2011



- Robust evidence base
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Evidence base

Phase I (2006 – 08)

- Gathering evidence to inform Phase II

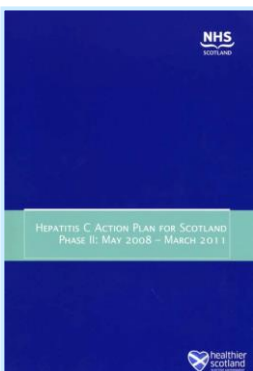


Key Evidence (in 2006)

- 38,000 living with chronic HCV (>2,000 with cirrhosis)
- **HCV deaths overtaken HIV deaths**
- ~ 90% acquired through IDU (1,500 new infections per year)
- > 60% undiagnosed & < 10% in care
- **1% initiated on therapy each year**

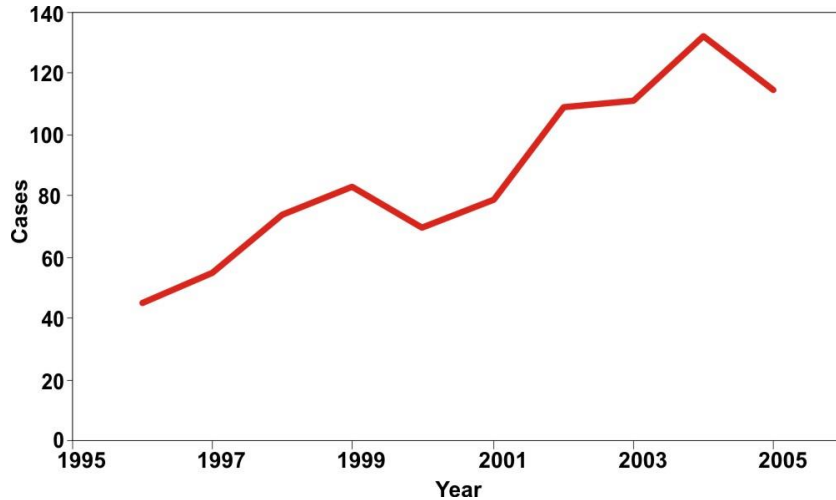
Phases II & III (2008 – 15)

- Improve HCV services
- HCV Investment: ~ **£100M**

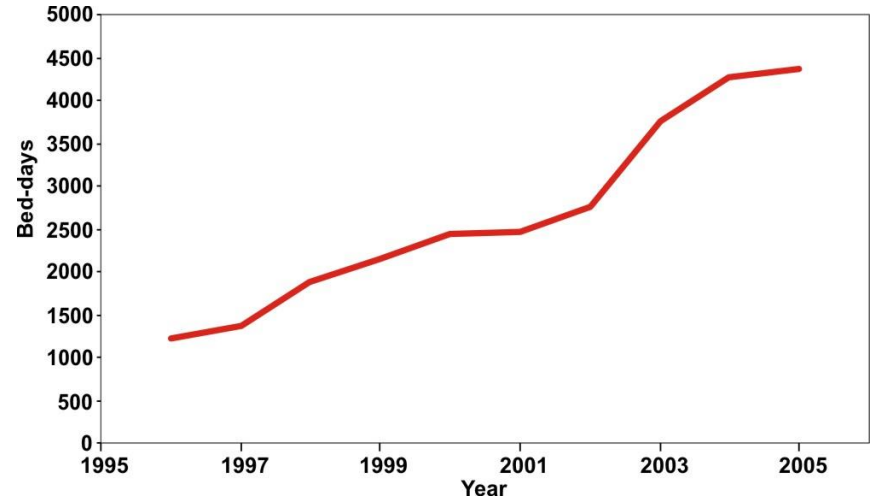


Evidence base

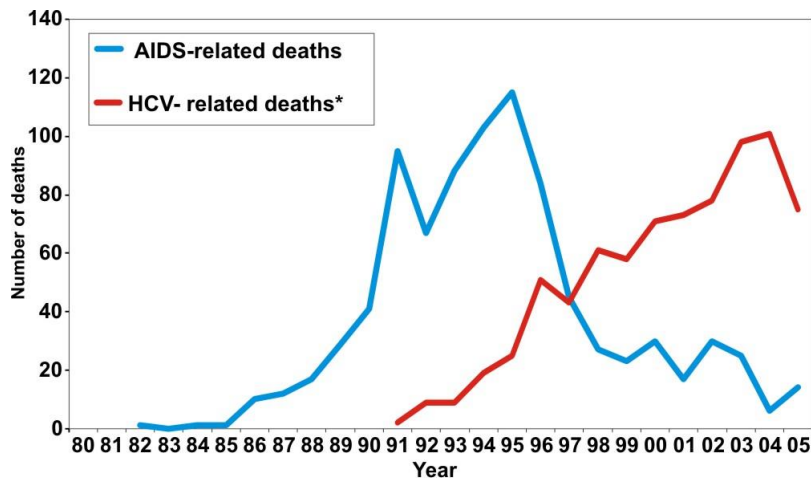
New cases of HCV-related liver failure in Scotland



Number of hospital bed-days associated with HCV-related liver failure in Scotland

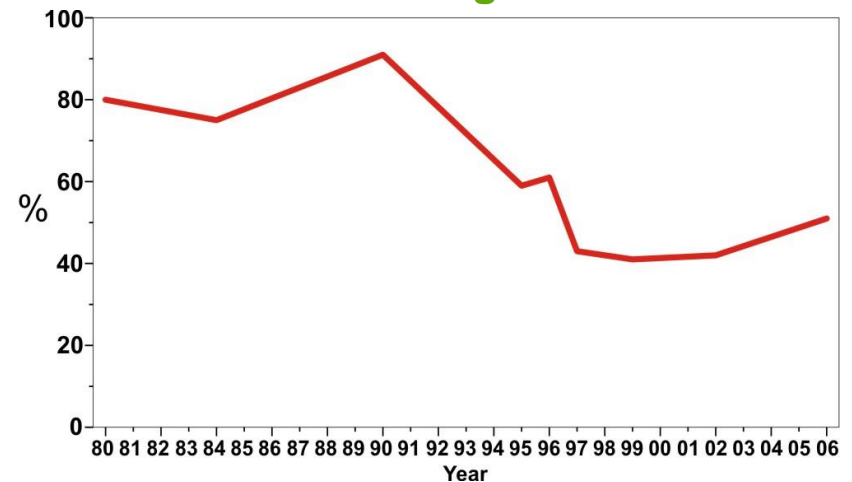


Annual number of deaths related to HCV and AIDS in Scotland

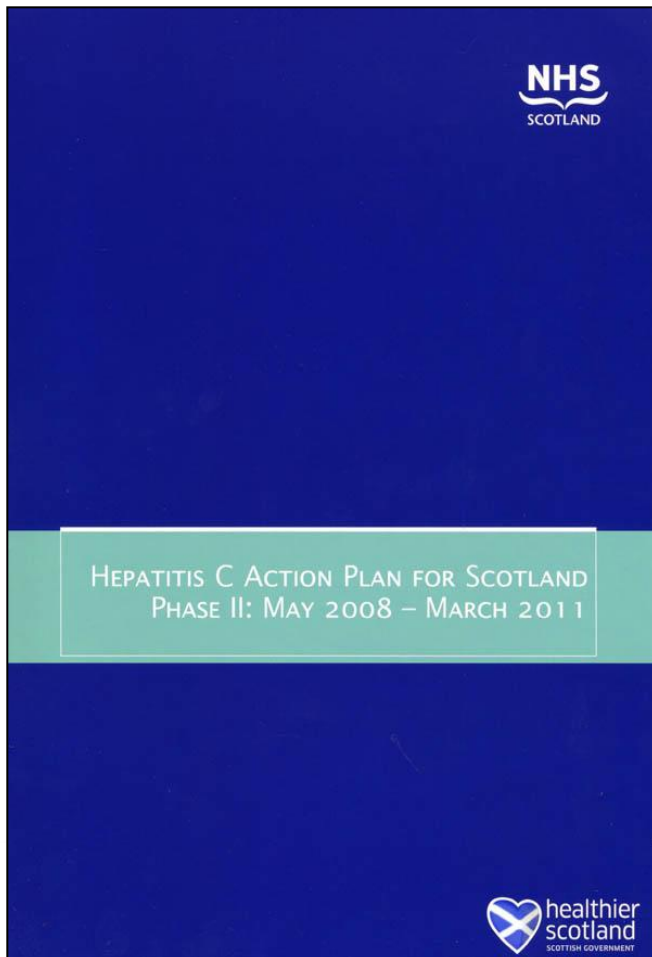


* Primary or secondary cause of death (data to Sept 2005)

HCV prevalence among PWID <25 years in Glasgow



Action Plan: Principles & Characteristics



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Key Actions

Prevention

- Develop national guidelines for services providing injection equipment
- Improve services providing injection equipment in accordance with the guidelines
- Design and implement educational interventions aimed at people who inject drugs

Key Actions

Diagnosis

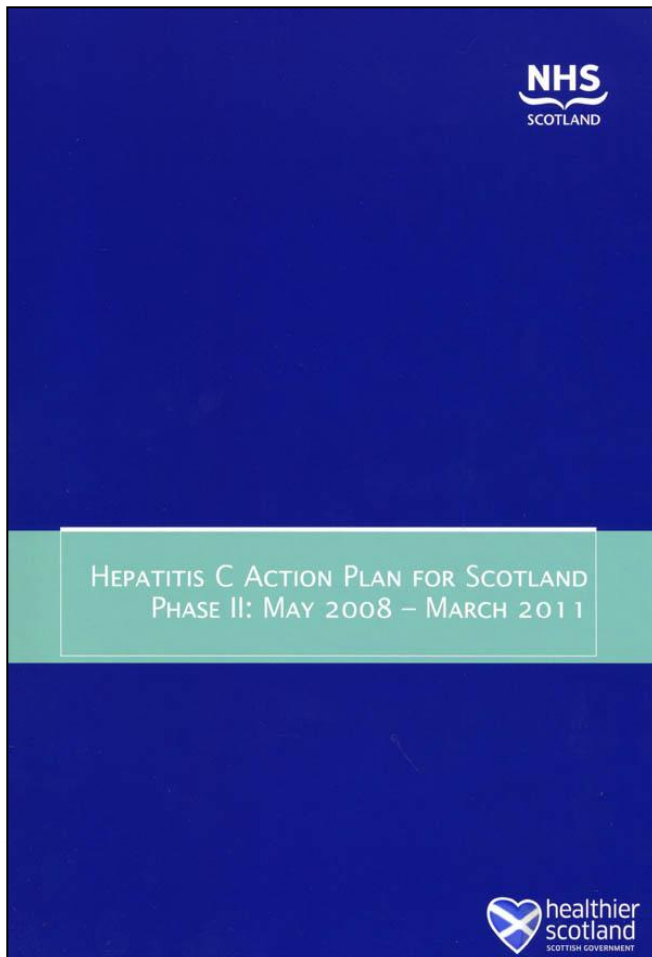
- Implement an awareness-raising campaign aimed at those at risk of being infected
- Implement an awareness-raising campaign aimed to meet the information and education needs of a range of professional audiences
- Develop and implement new and innovative approaches to improving hepatitis C testing and referral activities

Key Actions

Treatment

- Implement multidisciplinary Managed Care Networks in each NHS board, responsible for the management of persons infected with hepatitis C
- Scale up the number of persons (including prisoners) receiving hepatitis C treatment each year according to government targets (set at NHS Board level, according to prison population, hepatitis C-diagnosed population, and adult population)
- Strengthen referral networks to specialist clinics

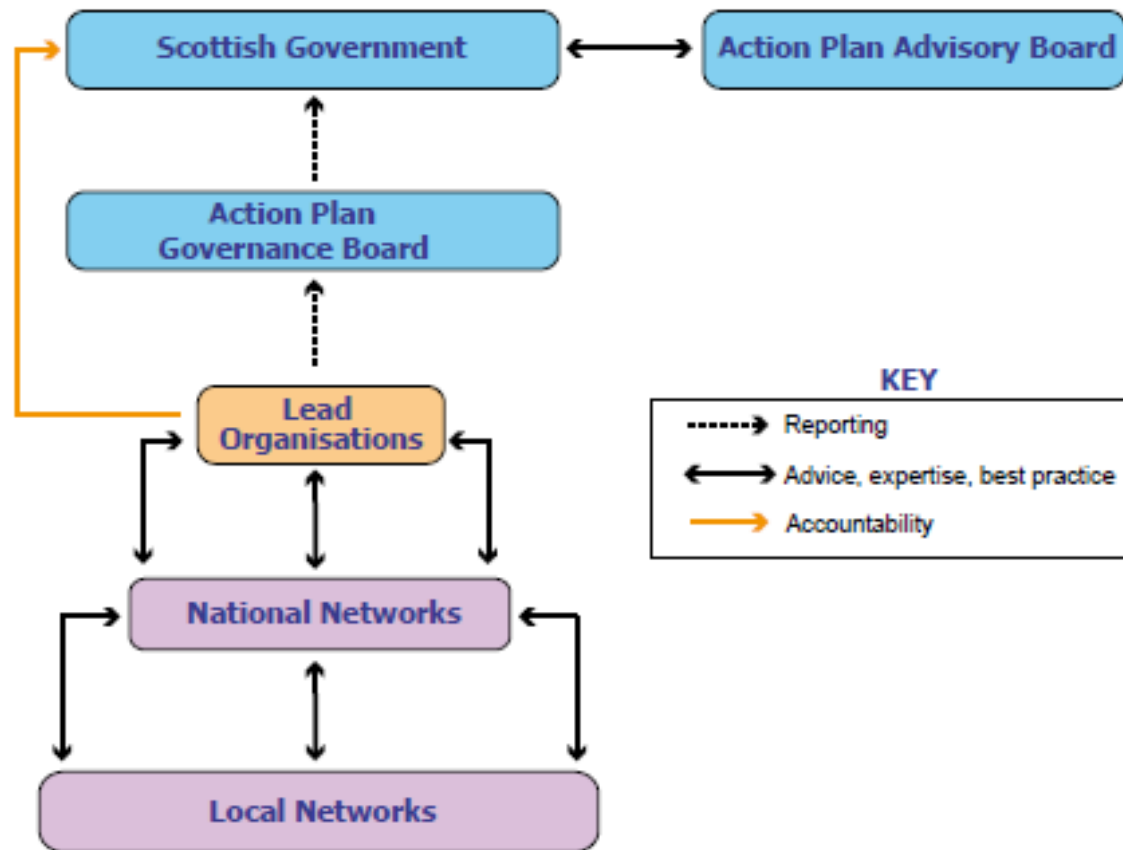
Action Plan: Principles & Characteristics



- Robust evidence base
- High-level actions & extensive consultation process
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Governance

Governance structure for the Hepatitis C Action Plan for Scotland Phase II



Phase II: Principles & Characteristics

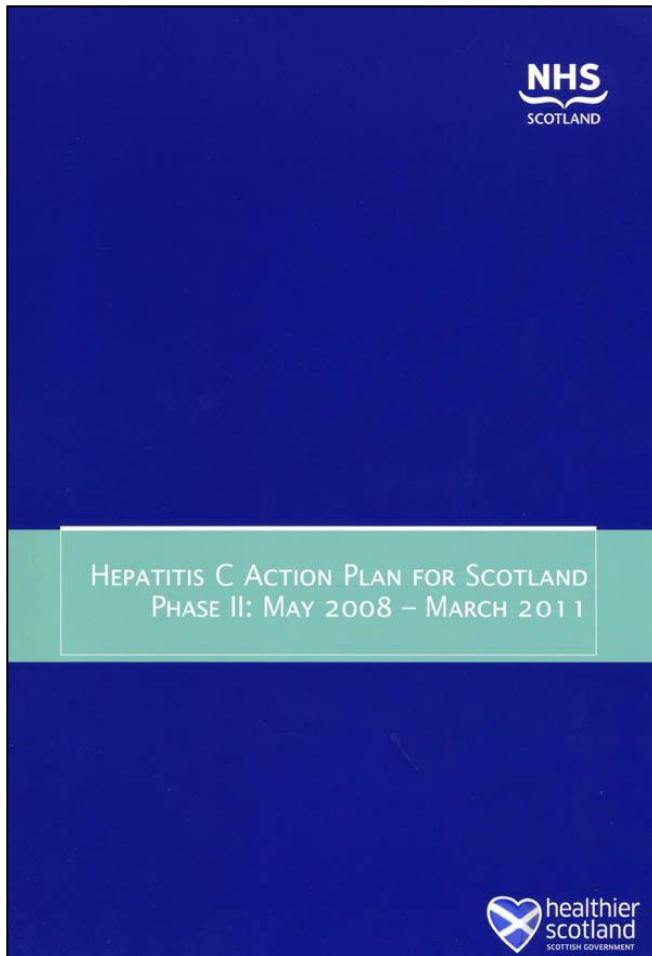
- Robust evidence base
- High-level actions & extensive consultation process
- Strong governance and clear accountability
- **Leadership and coordination**
- Multidisciplinary approach
- Serious investment
- Monitoring and performance measures

NHS
SCOTLAND

HEPATITIS C ACTION PLAN FOR SCOTLAND
PHASE II: MAY 2008 – MARCH 2011

healthier
scotland
SCOTTISH GOVERNMENT

Action Plan: Principles & Characteristics



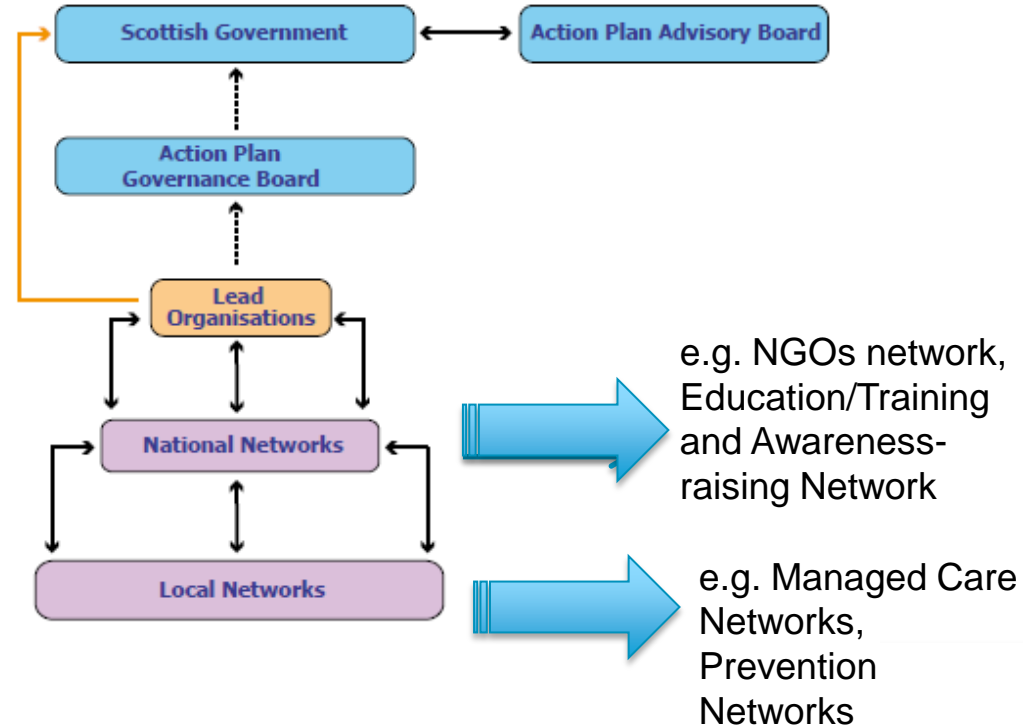
- Robust evidence base
- High-level actions & extensive consultation process
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- Leadership and coordination
- **Multidisciplinary approach**
- Serious investment
- Monitoring and performance measures

Multidisciplinary approach

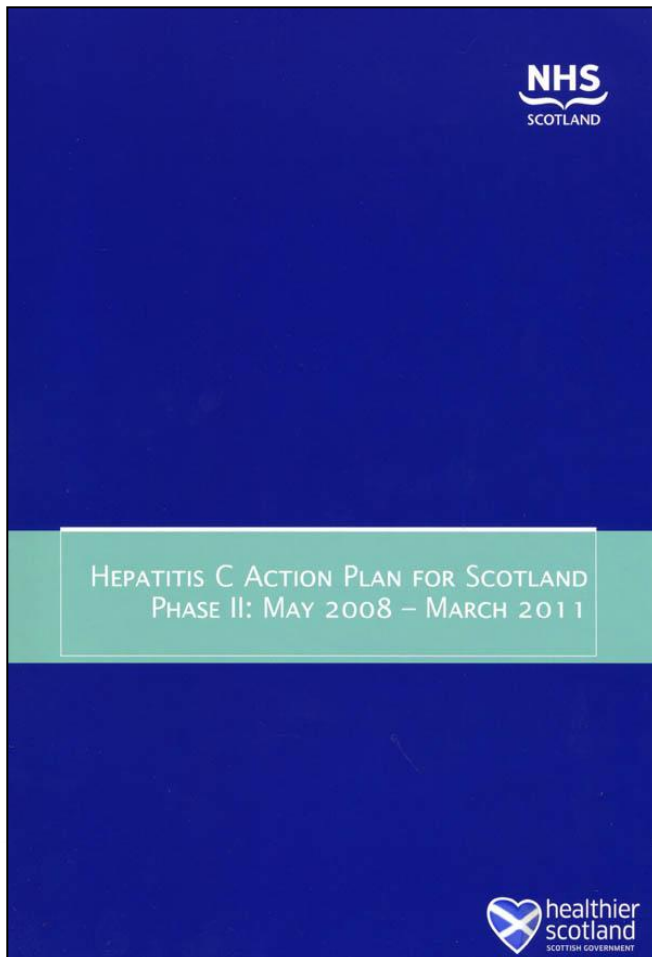
Local and national networks established

- Including representatives from all relevant stakeholder groups (for example, healthcare, prison, addictions, social work, and voluntary sector)
- Share experience, best practice, and progress on the delivery of the Action Plan

Governance structure for the Hepatitis C Action Plan for Scotland Phase II

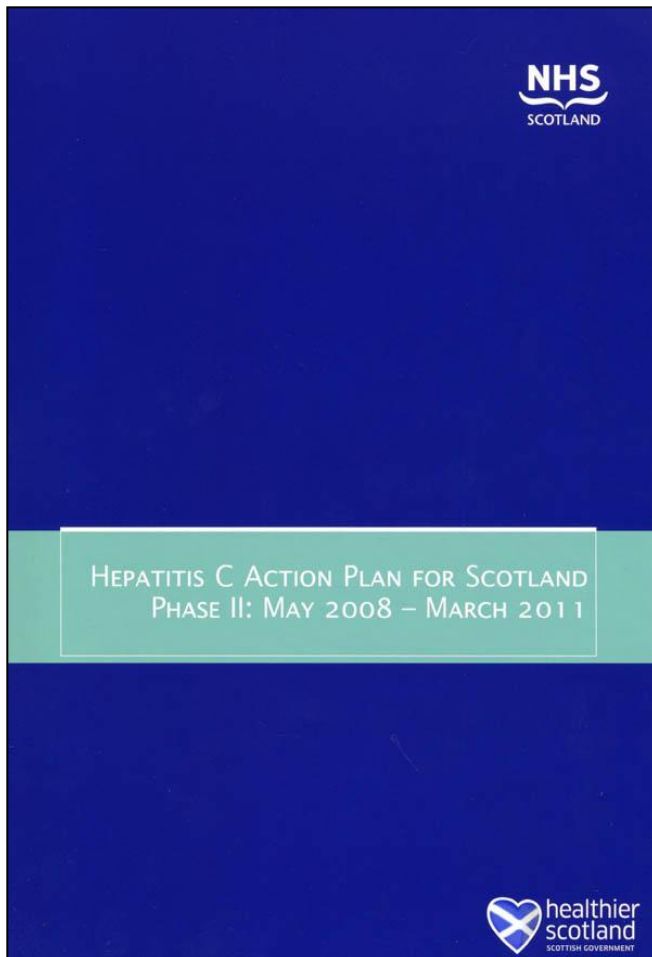


Action Plan: Principles & Characteristics



- Robust evidence base
- High-level actions & extensive consultation process
- Strong governance and clear accountability
- Leadership and coordination
- Multidisciplinary approach
- **Serious investment (£100 million during 2008-15)**
- Monitoring and performance measures

Action Plan: Principles & Characteristics



- Robust evidence base
- High-level actions & extensive consultation process
- Strong governance and clear accountability
- Leadership and coordination
- Multidisciplinary approach
- Serious investment
- **Monitoring and performance measures**

Monitoring and performance measures

- Prevention
 - Development of a data collection system to monitor the provision of injection equipment
 - Annual surveys of hepatitis C prevalence and incidence among PWID across Scotland
- Diagnosis
 - Development of a surveillance system to monitor hepatitis C testing practice in Scotland
- Treatment
 - Further development of a national hepatitis C clinical database
- Disease
 - Data linkage of hepatitis C databases to other national hospital and deaths registers

Prevention of Infection in Scotland: Progress

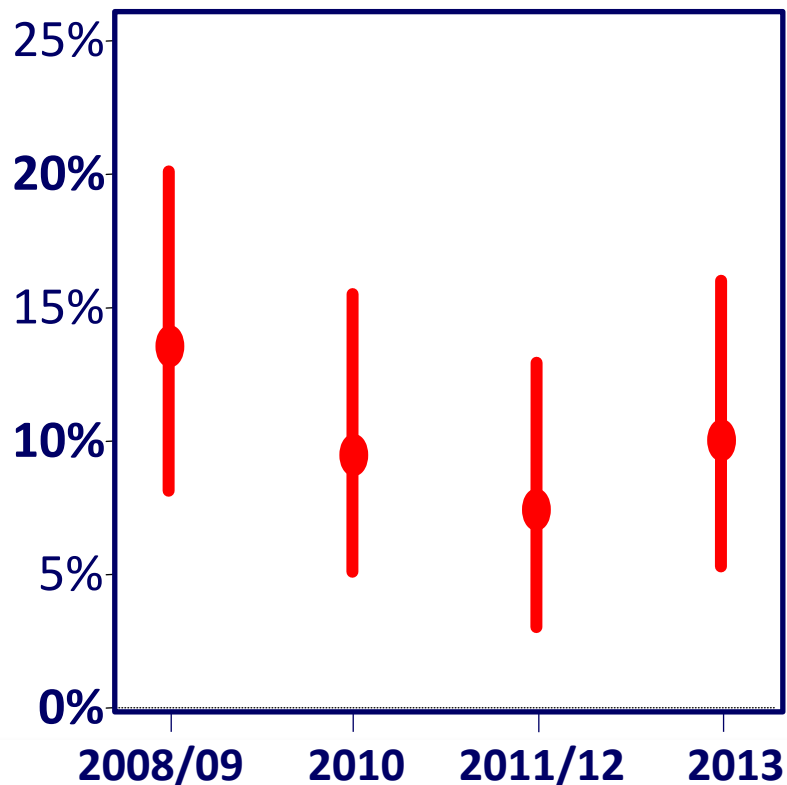
Provision of Key Interventions to PWID

Year	2008/09	2011/12
Needles/syringes (N/S) distributed	4.4 million	4.7 million
Paraphernalia* distributed	0.4 million	2.5 million
On methadone	50%	64%
Initiated on HCV therapy among PWID <30 yrs	~50	~100

* Cookers/Filters

Incidence of HCV infection among PWID in Scotland

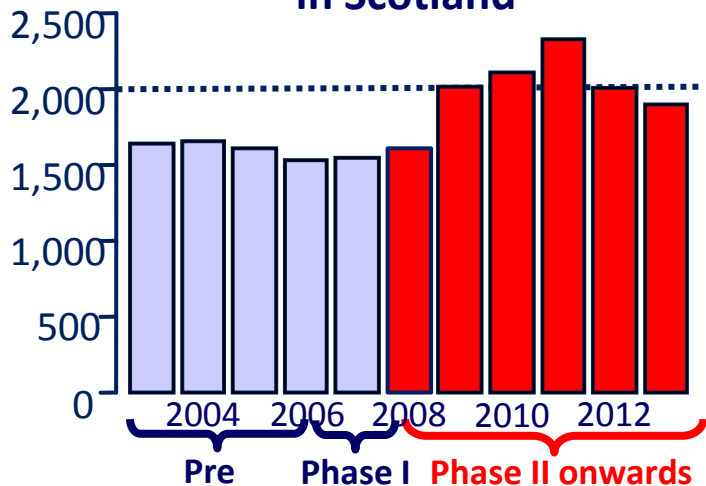
(derived from PCR data)



Palmateer *et al*; PloS One, 2014
(plus updated data for 2013)

Diagnosis: Overall Progress

Number of new HCV diagnoses per year in Scotland



Progress In Drug Services

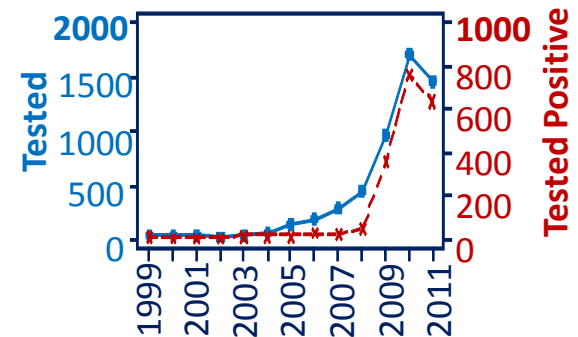
Dried Blood Spot Testing

(introduced into drug services during 2009)



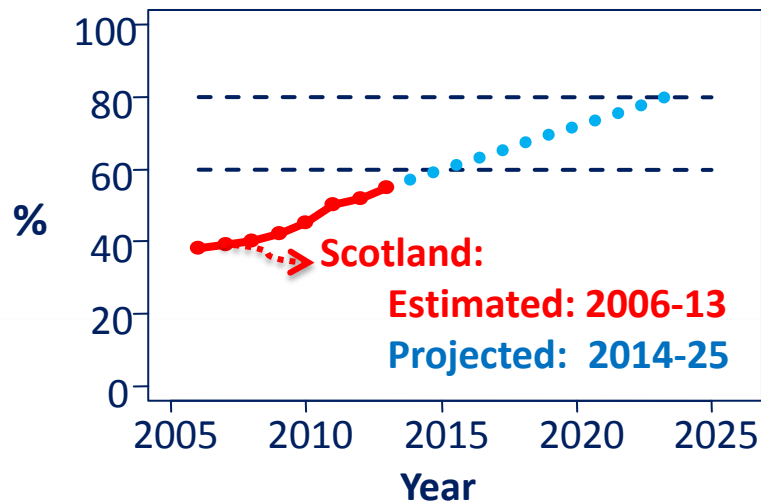
Number of people tested for HCV in drug services (Scotland's 4 largest NHS Boards)

(Scotland's 4 largest NHS Boards)

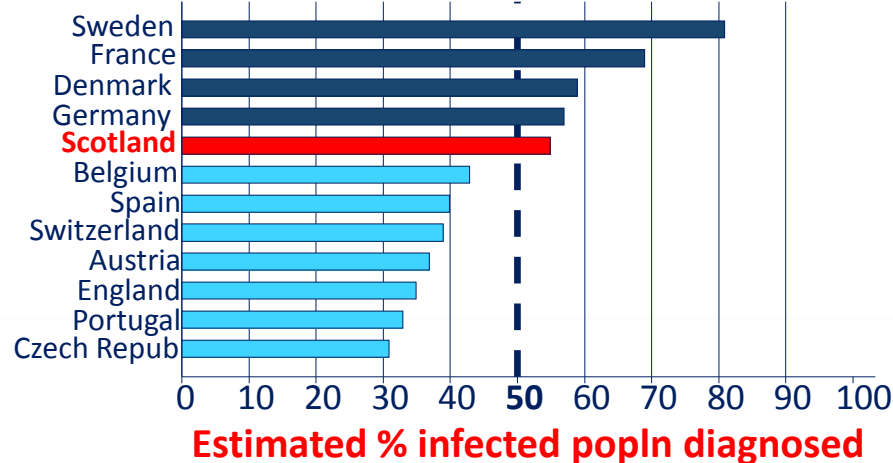


Drug services referred 16% of new HCV diagnoses in Scotland during 2009-13 (McLeod et al. JECH 2014)

% Infected Popln diagnosed

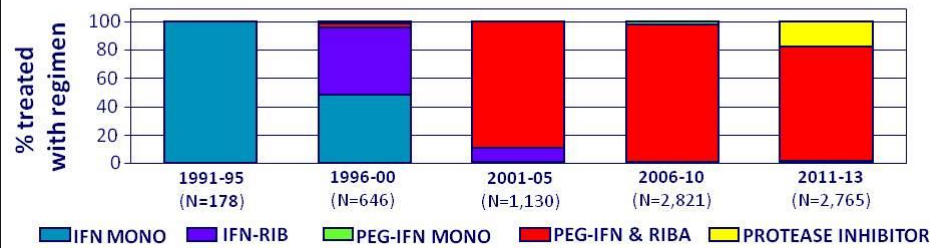


International Context

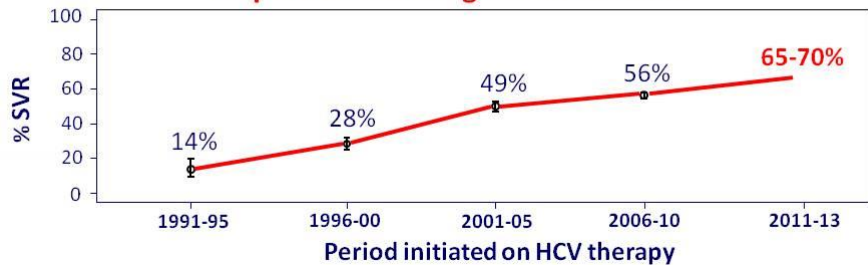


Change in the therapeutic landscape

Treatments regimens administered in Scotland

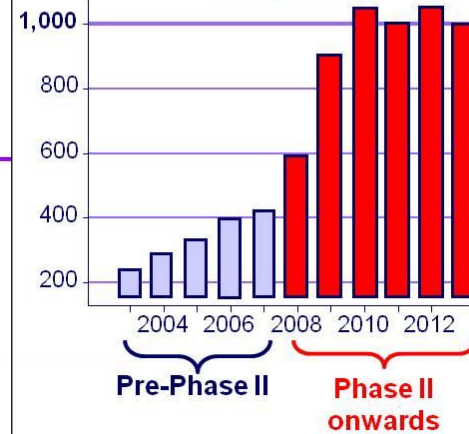


Proportion attaining SVR in Scotland



Treatment: Overall Progress

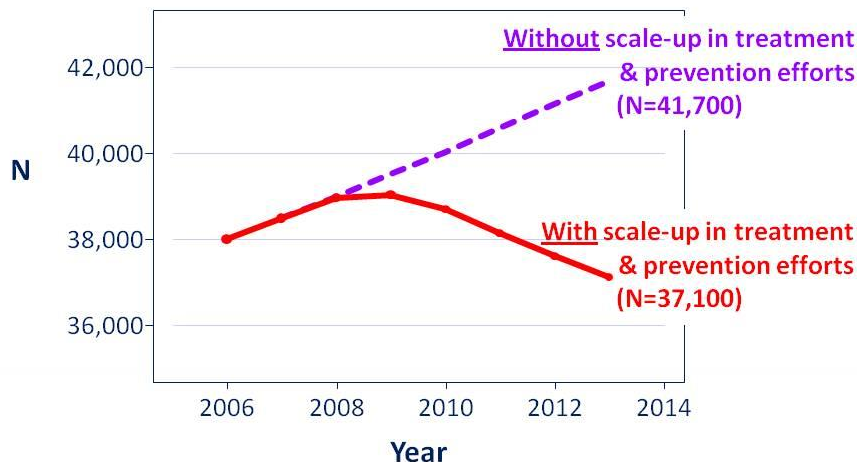
Annual number of people initiated on HCV antiviral therapy in Scotland



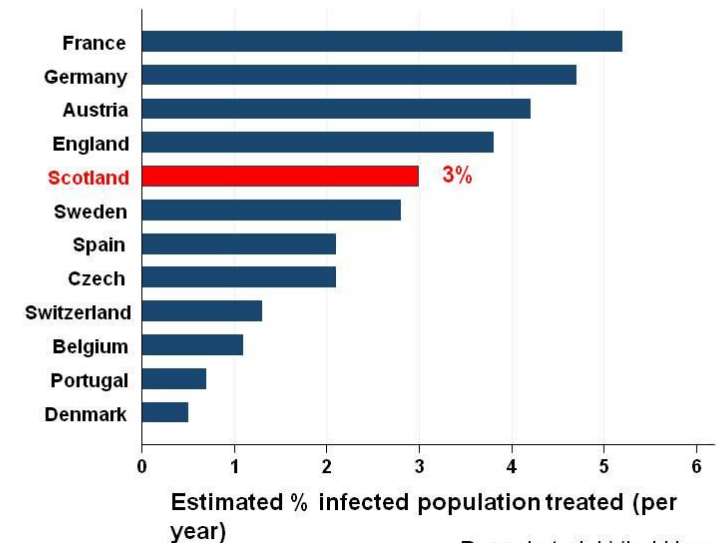
- ❖ 7-fold rise in the number of prisoners initiated on therapy: 12% of those initiated during 2009-13,
- ❖ Great majority of those treated are now PWID: 81% of those initiated during 2012-13,

Impact on the size of the Chronic Population

Estimated number of people living with chronic HCV infection each year in Scotland, 2006 to 2013

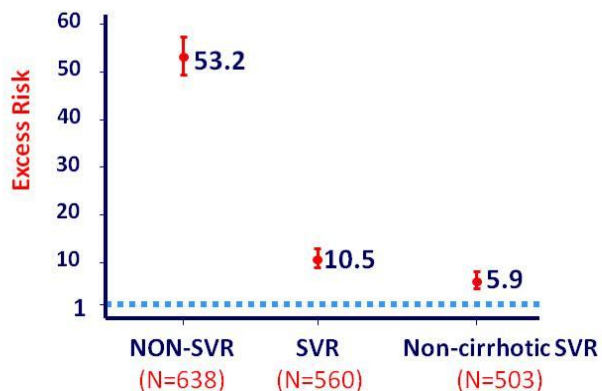


How effective are we at treating infection?



How effective are we at preventing disease?

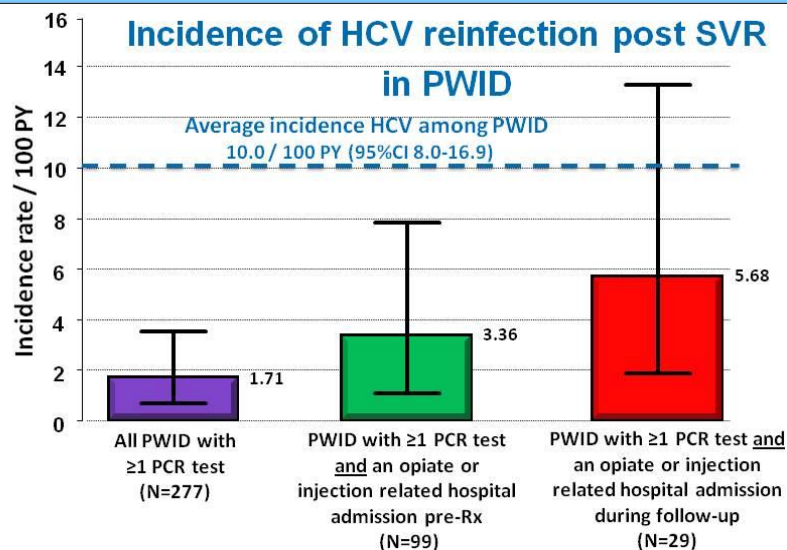
Excess risk of a liver-related hospital episode among post-treatment HCV patients in Scotland, compared to general population



(Innes et al. Hepatology 2011)

How effective are we at preventing disease?

Incidence of HCV reinfection post SVR in PWID



Weir et al. unpublished, 2014

Treatment & Prevention of Disease

Can we do better?

Yes, if we can increase treatment among those with more advanced HCV disease

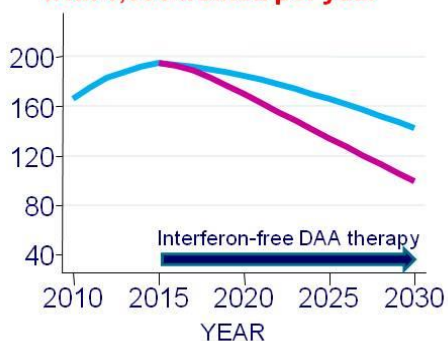
	Current Chronic HCV (N~38,000)	Current HCV treated (N~1,100)	Future HCV treated (alternative strategy)
Mild disease	60%	60%	40%
Moderate disease	35%	25%	37%
Severe disease (Cirrhosis)	5%	15%	23%
Liver failure			160 per year

Innes et al. unpublished, 2014

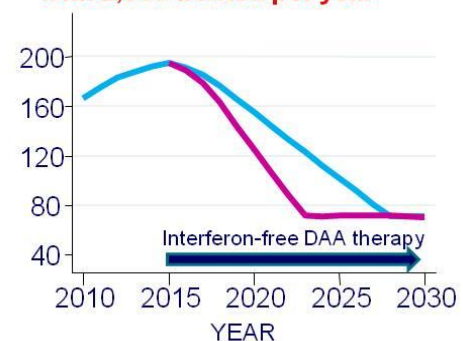
Treatment & Prevention of Disease

Can we do better?

Incident number of liver failures; with 1,000 treated per year



Incident number of liver failures; with 2,000 treated per year



Post-2015 Treatment Strategy Modelled:

— Maintain Status Quo — Target Advanced Disease

Innes et al. unpublished, 2014

Scotland's Hepatitis C Action Plan

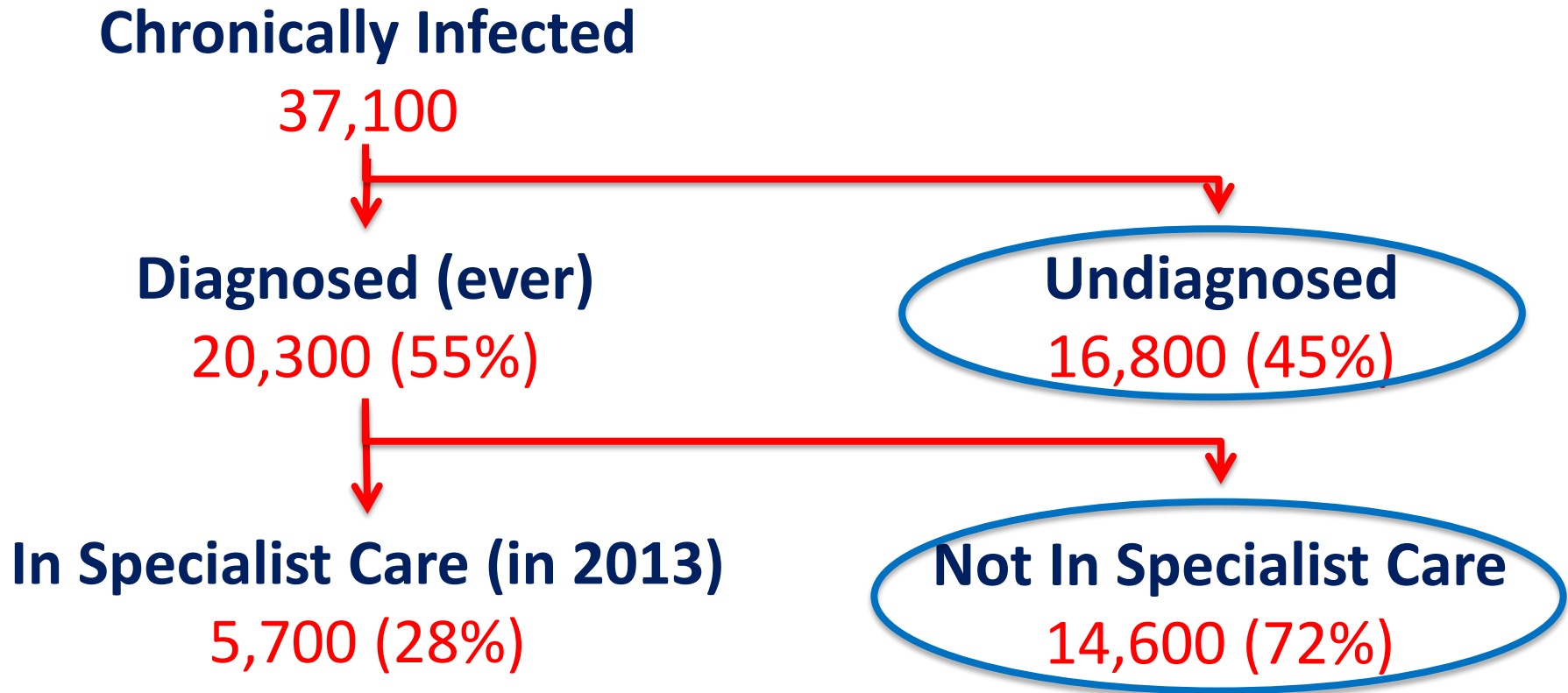
Evidence of Impact of Investment

Category & Outcome Indicator	Outcome		New Intervention
	2007	2013	
Prevention Transmissions/yr *	1500	1000	Improved Harm Reduction Measures (esp. paraphernalia for PWID)
Diagnosis % of Infected Population Diagnosed	39%	55%	Awareness Raising Dried Blood Spot Testing
Treatment Initiations/yr	400	1100	Workforce Development (esp. nurse specialists) Improved Access to Therapy
Coordination	-	Comprehensive	Local & National Networks
Evaluation: Monitoring/ Research Publications	-	Several published/ prepared	Establishment of Research Team

* Preliminary estimates: the reduction in transmissions are contemporaneous with, but not necessarily due to, the introduction of the stated new intervention

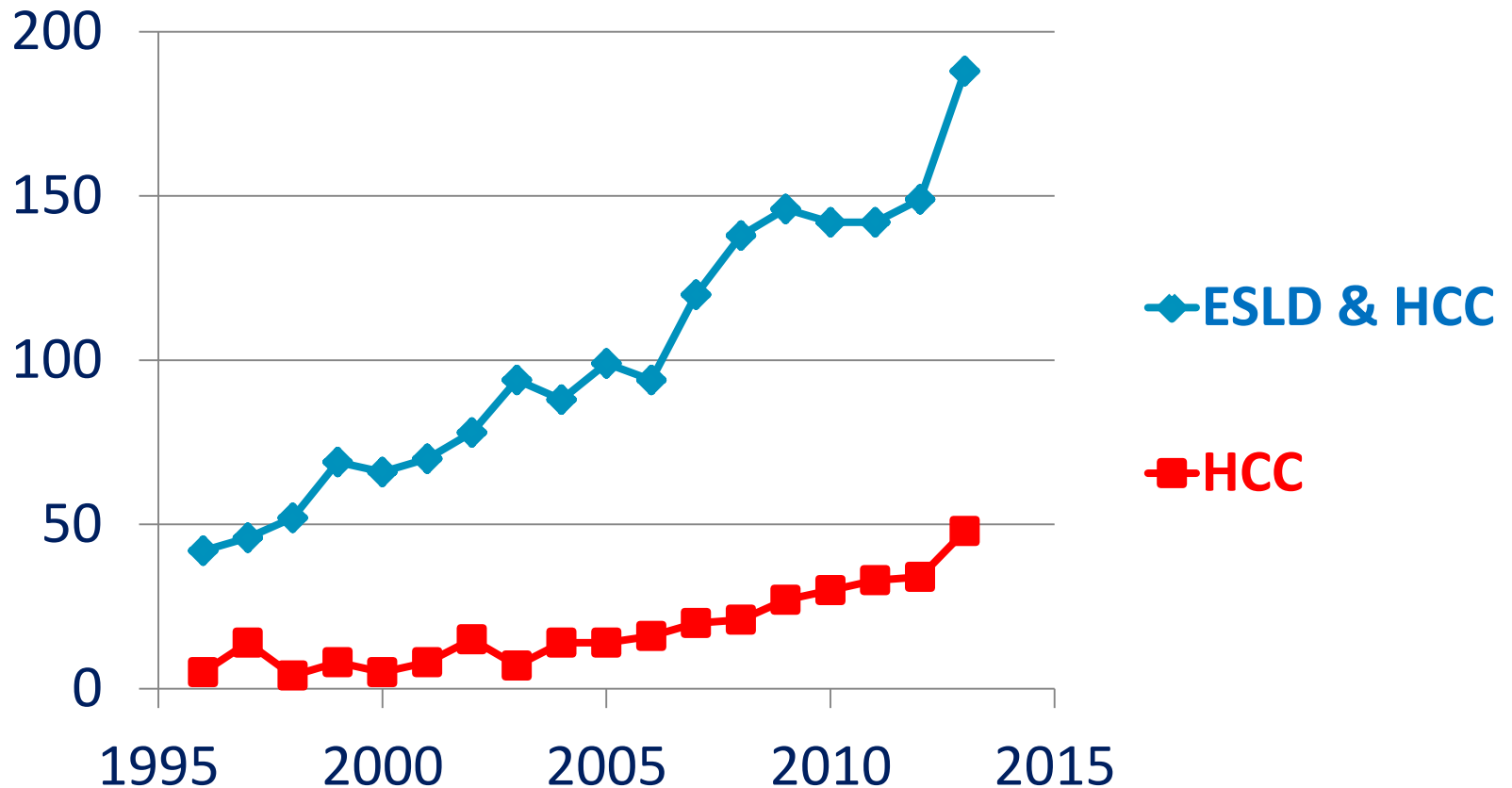
Future challenges (1 of 3)

Hepatitis C Landscape in Scotland, 2013



Future challenges (2 of 3)

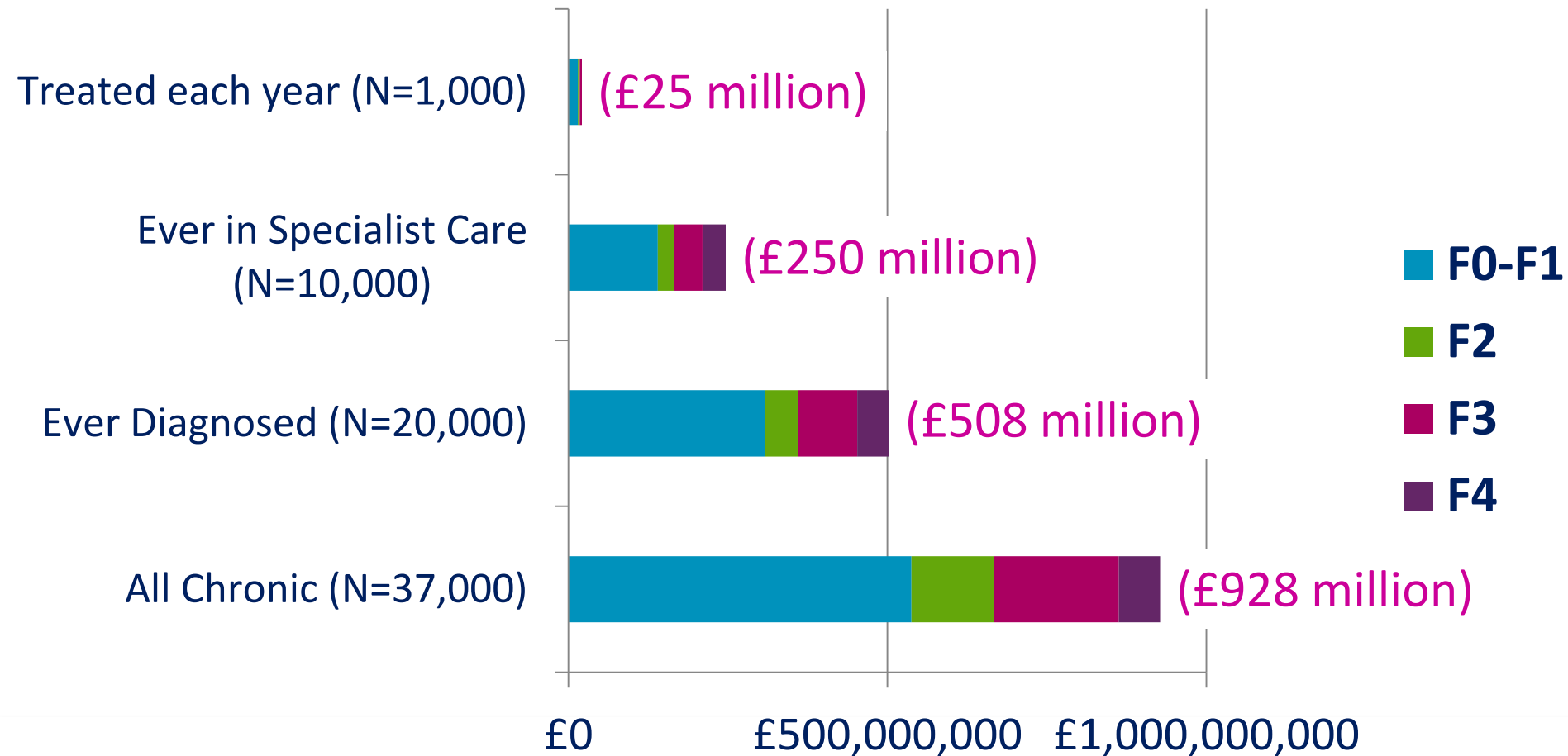
Number of people diagnosed with HCV antibodies and who had been hospitalised for the first time with either ESLD* or HCC in Scotland



* Relates to a primary or secondary ICD code of either ascites, hepatic encephalopathy, hepatic failure, hepatorenal syndrome, bleeding oesophageal varices or HCC.

Future challenges (3 of 3)

Estimates of HCV therapy costs* by disease stage



* Assumes average cost of £25,000 per course of therapy

Scotland's HCV Action Plan: Lessons

Prevention

- High levels of harm reduction intervention can reduce, **but not fully control**, HCV transmission among PWID.
- Treatment to prevent onward transmission among **active PWID** is a concept which, if translated into practice, could be rewarding in an interferon free (*particularly lower cost*) antiviral era.

Scotland's HCV Action Plan: Lessons

Diagnosis

- DBS testing in **non-clinical settings** is highly acceptable and effective.
- Risk-based screening has been effective up to a point; but a combination of risk-based and population-based case-finding (focusing on people of certain age and in high prevalence areas) will likely be needed if the **great majority** of people infected are to be identified.

Scotland's HCV Action Plan: Lessons

Treatment

- Optimising clinical services can lead to rapid scale up of treatment – but in the context of Interferon and Secondary care, **there is a ceiling.**
- SVR prevents liver disease but the impact of therapy can be compromised by **post-SVR lifestyle.**
- It will be theoretically possible to **control** the incidence of HCV related severe liver disease outcomes in the short-term, with the new therapies.



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