



# MCNs-lifesaving interventions for hepatitis C patients

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## Methods

- Cohort study, prospectively collected data
- A 22 year study 1994 and 2014 with follow up till 2016
- Over 3,100 patients
- Comparing the effectiveness of 4 care pathways
- For all HCV antibody positive individuals tested in a geographical region.
- Date of diagnosis defined pathway exposure despite subsequent pathway changes

# NHS Tayside

- Environment
- System
  - Free for all at point of care
- Drug workers- statutory/3<sup>rd</sup> sector
  - HCV awareness and diagnosis part of core work
  - Used as lever for behaviour change
  - Empowered to refer for treatment
  - Co-supervision of treatment
- Pharmacists testing and treating OST
- HCV treatment staff
  - Out-reach to locality
  - Embedded in drug services
  - Prison medical services
- Patients HCV repeatedly on the agenda
  - Treated when patient wants to



Care Pathway	Time period	Nature of pathway
Subgroup A	Pre July 1999	<ul style="list-style-type: none"> <li>• HCV testing commenced in region</li> <li>• Limited access to treatment</li> <li>• No specialist nursing input available</li> </ul>
Subgroup B	July 1999- June 2004	<ul style="list-style-type: none"> <li>• Specialist nursing support given at HCV treatment clinic</li> <li>• Clinic at main city hospital only</li> <li>• Treatment offered, interferon and ribavirin</li> </ul>
Subgroup C	July 2004- June 2009	<ul style="list-style-type: none"> <li>• Development of managed care network</li> <li>• Appointment of part time Nurse specialist</li> <li>• New referral pathway- referrals open to all health care professionals including drug workers and prison nurses</li> <li>• Outreach clinics established locally and in drug and prison centres throughout region</li> <li>• Treatment interferon and ribavirin</li> </ul>
Subgroup D	July 2009- June 2014	<ul style="list-style-type: none"> <li>• Routine dry blood spot testing in drug services and needle exchanges</li> <li>• Appointment of full time nurse specialist</li> <li>• Increase in outreach clinics across region</li> <li>• Treatment use of Direct Acting Antivirals (DAAs) in treatment regimen</li> </ul>

# Results

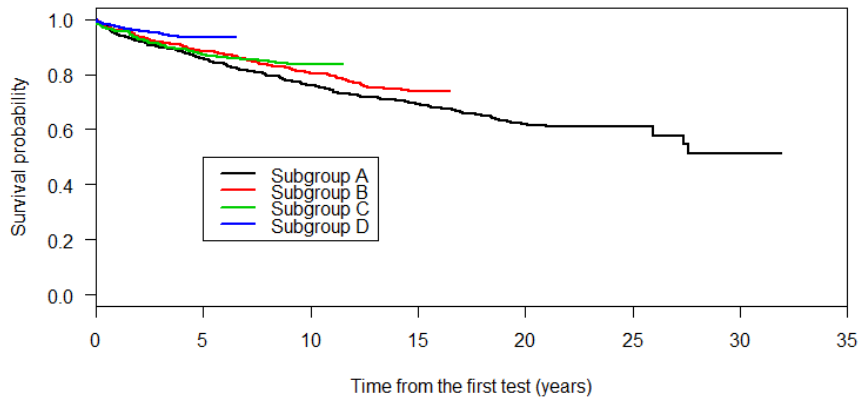
Demographics		Subgroup A (n=688)	Subgroup B (n=634)	Subgroup C (n=593)	Subgroup D (n=1207)
Tester	General Practitioner	227 (32.9%)	265 (41.7%)	222 (37.4%)	276 (22.8%)
	Prison Services	150 (21.8%)	131 (20.6%)	118 (19.8%)	174 (14.4%)
	Hospital inpatient/outpatient	111 (16.1%)	76 (11.9%)	85 (14.3%)	195 (16.1%)
	Other	84 (12.2%)	98 (15.4%)	82 (13.8%)	120 (9.9%)
	HIV Specialist Team	56 (8.1%)	24 (3.7%)	21 (3.5%)	9 (0.7%)
	Drug services	31 (4.5%)	36 (5.6%)	64 (10.4%)	433 (35.8%)
	Haematology	29 (4.2%)	4 (0.6%)	1 (0.1%)	0 (0%)
Median age at diagnosis (Age range)		34.9 years	35.5years	36.8 years	35.8years
Risk Factor	Blood products	50 (7.2%)	18 (2.8%)	25 (4.2%)	21 (1.7%)
	Intravenous drug use	496 (72.0%)	501 (81.0%)	450 (75.8%)	103 (87.5%)
	From high prevalence country	14 (2.0%)	15 (2.3%)	38 (6.4%)	81 (5.0%)
	No risk factors known	55 (7.9%)	36 (5.6%)	38 (6.4%)	52 (4.3%)
	Other (sexual, tattoo, needle stick)	32 (4.6%)	35 (5.5%)	36 (6.1%)	42 (3.4%)
	Not documented	37 (5.4%)	29 (4.7%)	2 (0.3%)	2 (0.1)
Non Resident/moved		103 (14.9%)	93 (14.6%)	58 (9.7%)	40 (3.3%)
Death before access to care		181(26.3%)	82 (12.9%)	39 (6.5%)	22 (1.8%)
No Trace		19 (2.7%)	0 (0%)	0 (0%)	4 (0.3%)

Referred to treatment services		Subgroup A	Subgroup B	Subgroup C	Subgroup D
Caseload total (1830)		n= 292	n=324	n=393	n=821
Total referred (1786)		279 (95.5%)	320 (98.7%)	386 (98.2%)	801 (97.5%)
Accessed care (1629)		260 (89%)	305 (94.1%)	362 (92.1%)	702 (85.5%)
Current PWIDs /or on OST at diagnosis		174 (66.9%)	241 (79%)	302 (83.4%)	693 (84.4%)
Cirrhosis when starting first treatment		38 (24.2%)	45 (27.3%)	28 (13.5%)	48 (13.7%)
Follow up	Died	51	57	36	33
	Moved from area	23	47	53	58
	Lost to follow up	37	32	57	138
	Discharged SVR	114	112	150	268

## Numbers of deaths by subgroup

Number diagnosed with HCV	Subgroup A (n=688)	Subgroup B (n=634)	Subgroup C (n=593)	Subgroup D (n=1207)
Dead before access to care	181 (26.3%)	82 (12.9%)	39 (6.5%)	22 (1.8%)
Died after access to care	51 (7.4%)	57 (8.9%)	36 (6.1%)	33 (2.7%)
Total deaths	232 (33.7%)	139 (21.9%)	75 (12.6%)	55 (4.5%)

Kaplan-Meier curves of survival (all-cause mortality)



Cause of death in all cohorts	Access to HCV care	No access to HCV care	PCR Negative
Alcohol related Cirrhosis Of Liver	17	13	3
Assault	3	3	0
Drug related death	57	69	20
Falling jumping or pushed from high place	0	4	0
Drug related death/known cirrhosis	5	0	0
HIV related death	10	58	6
Liver cirrhosis	9	8	0
Liver cirrhosis died from other serious illness	4	2	0
Liver cirrhosis with liver cancer	26	14	1
Mental and behavioural disorders due to alcohol dependence syndrome	8	5	1
Not known	7	11	8
Other cancer not liver related	7	14	6
Other serious illness resulting in death	23	51	16
Other specified viral hepatitis without mention of hepatic coma	10	14	4
Suicide	10	18	4
Total died	196	284	69
Total in subgroup	1629	545	651
% of deaths per subgroup	12.0%	52.1%	10.5%

## Multivariate Cox regression analysis for the time from the first test to all- cause mortality

Covariates	Multivariate HR (95% CI)	P value
Age at the first test	1.05 (1.04 – 1.05)	< 0.001
Gender Male vs. Female	1.28 (1.04 – 1.56)	0.018
HIV Yes vs No	4.35 (3.40 – 5.56)	< 0.001
Subgroup B vs A	0.85 (0.69 – 1.05)	0.128
Subgroup C vs A	0.79 (0.61 – 1.02)	0.074
Subgroup D vs A	0.53 (0.40 – 0.71)	< 0.001

## Conclusion What's the point of doing a HCV test in PWIDs

- Having a HCV test positive
- Having someone to talk to about
- Perhaps having treatment for it
- Reduces the risk of death for all cause mortality before liver disease mortality

**It saves Lives**

# Acknowledgments

- All of the members of the MCN
- CNS Jan Tait