

JN

21^{es} Journées
Nationales
d'Infectiologie

Poitiers
et la région Nouvelle Aquitaine
Palais des Congrès du Futuroscope
du mercredi 9 septembre 2020
au vendredi 11 septembre 2020



Quels sont les obstacles actuels à l'éradication du VHC ?

Pr Gilles Pialoux



Déclaration de liens d'intérêts , Gilles Pialoux, Septembre 2020

Membre de board, d'un conseil scientifique,
intervenant ou invité dans un symposium d'un laboratoire
pharmaceutique = :

AbbVie, Gilead, MSD, AAZ, Janssen, ViiVHealthcare, Teva, Mylan, Sandoz, Majorelle

Parts sociales, activité salariée ou actions dans un laboratoire pharmaceutique :
Aucune

Consultable sur : <https://www.transparence.sante.gouv.fr/>

Eradication and Elimination

Eradication

Permanent reduction to zero of the worldwide incidence of infection; intervention measures are no longer needed

Example: Smallpox

Elimination

Reduction to zero of the incidence of infection in a defined geographical area; continued intervention measures are required

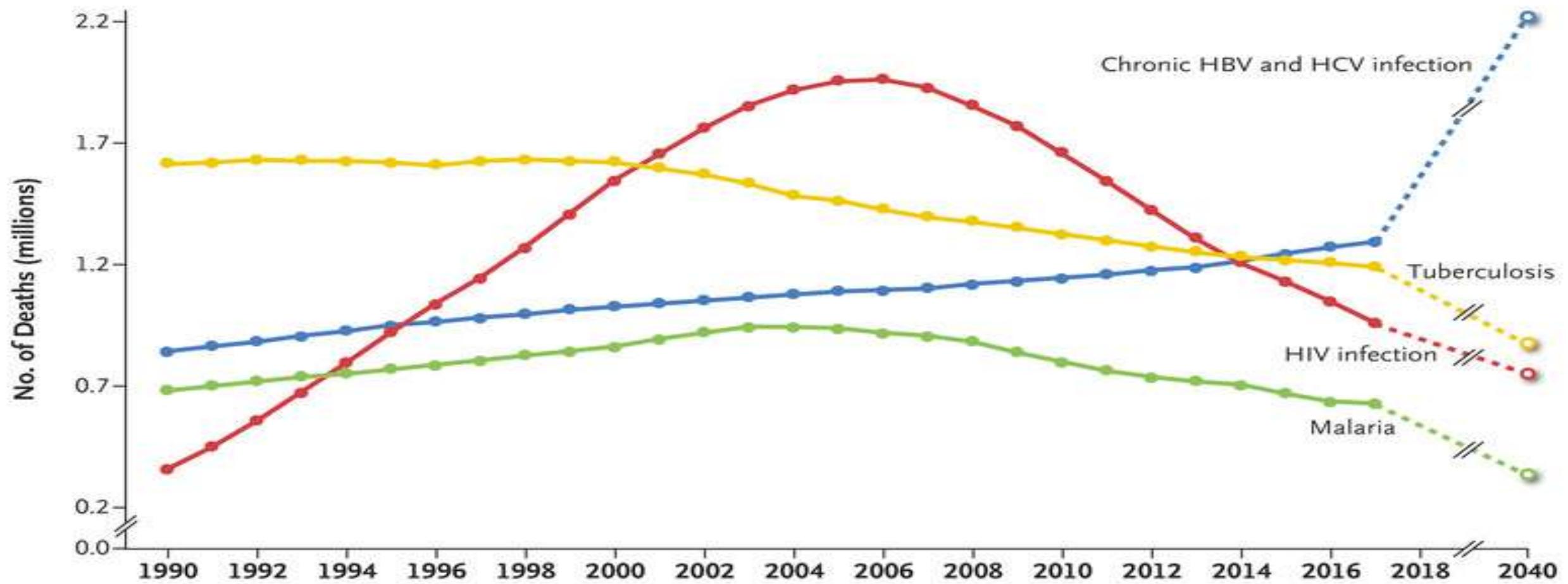
Example: Poliomyelitis

Global Elimination of Chronic Hepatitis

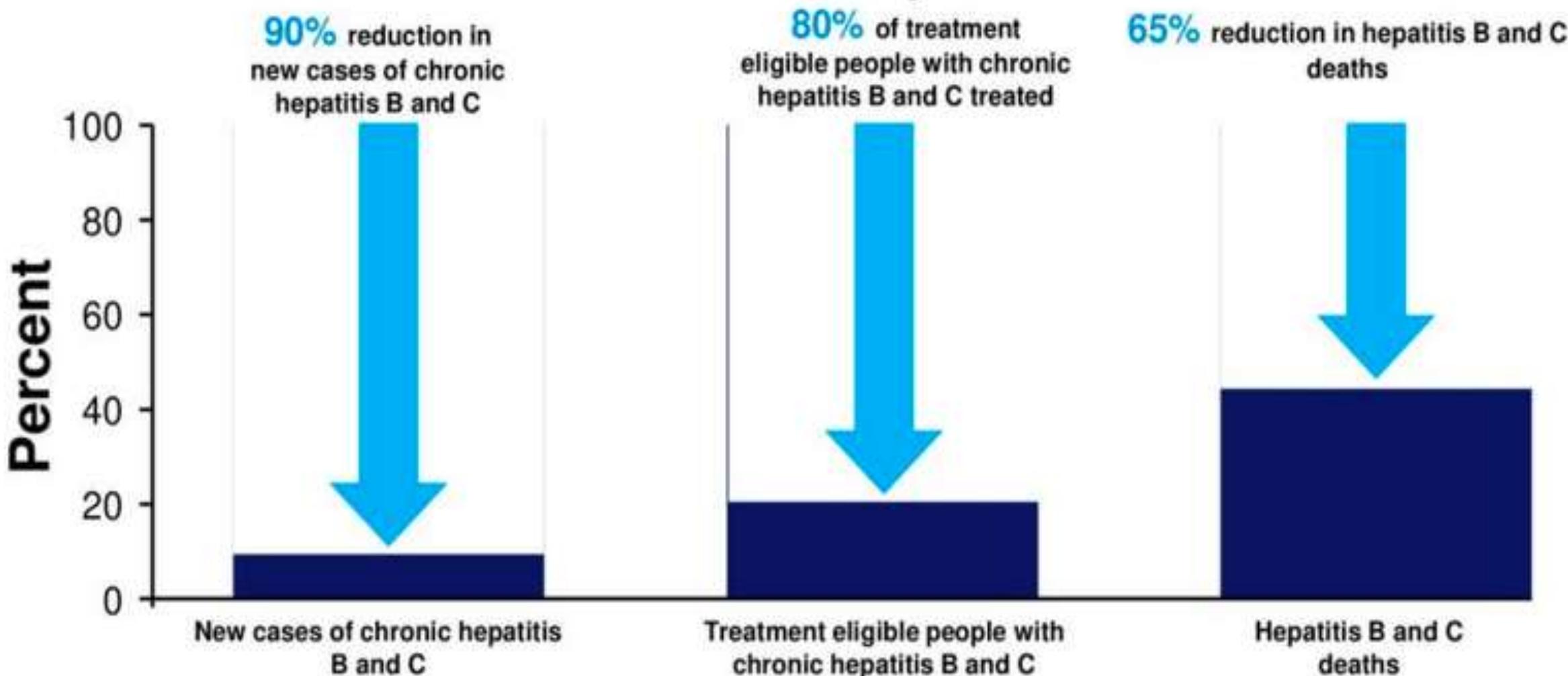
David L. Thomas, M.D., M.P.H.

May 23, 2019

N Engl J Med 2019; 380:2041-2050



Global targets achieved if viral hepatitis is controlled by 2030



Call to Action for Liver Associations to Advance Progress Towards Viral Hepatitis Elimination: A Focus on Simplified Approaches to HCV Testing and Cure.

Signatories:

AASLD, EASL, APASL, ALEH

Signed in Boston, Massachusetts, on Sunday, November 10, 2019

Clinical Strategies for Achieving HCV Elimination



Simplification

of diagnostic and treatment algorithms



Decentralization

of HCV services to local level care



Integration

of HCV treatment with primary care and other disease programs

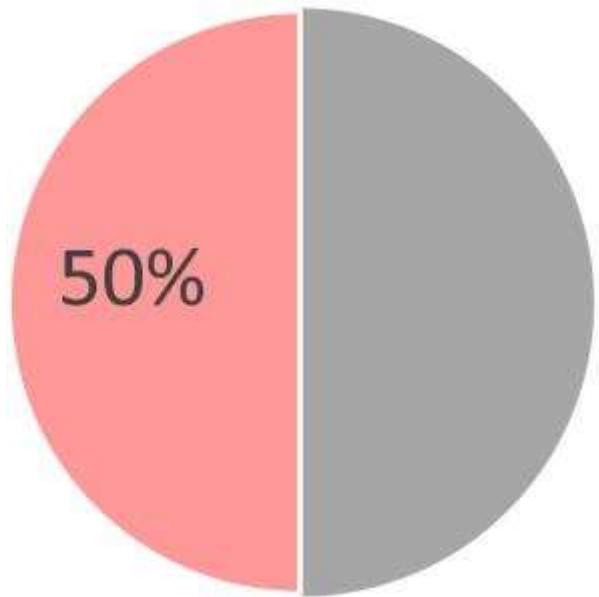


Task-sharing

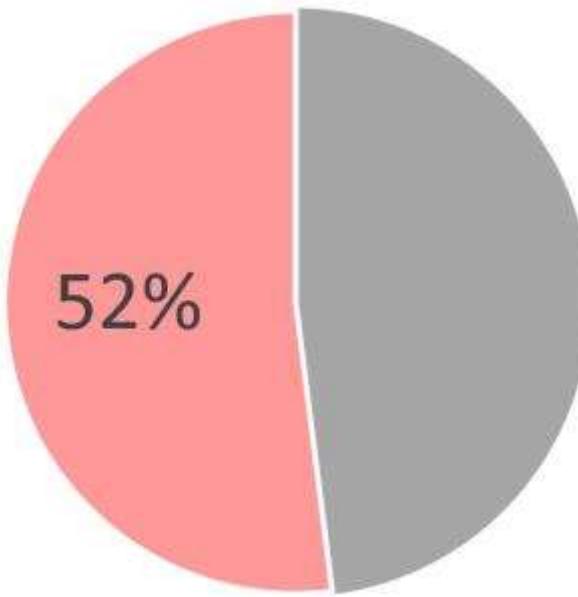
of HCV care with front-line providers



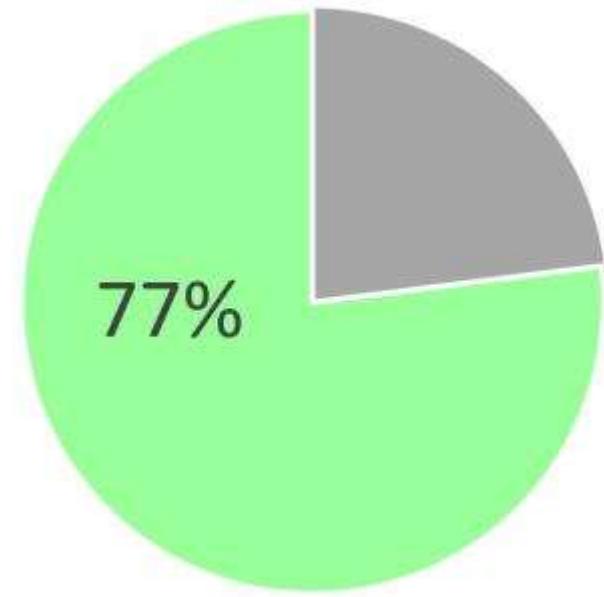
A Big Step Forward in Hepatitis C Screening



Pre-DAA era
(1999-2010)

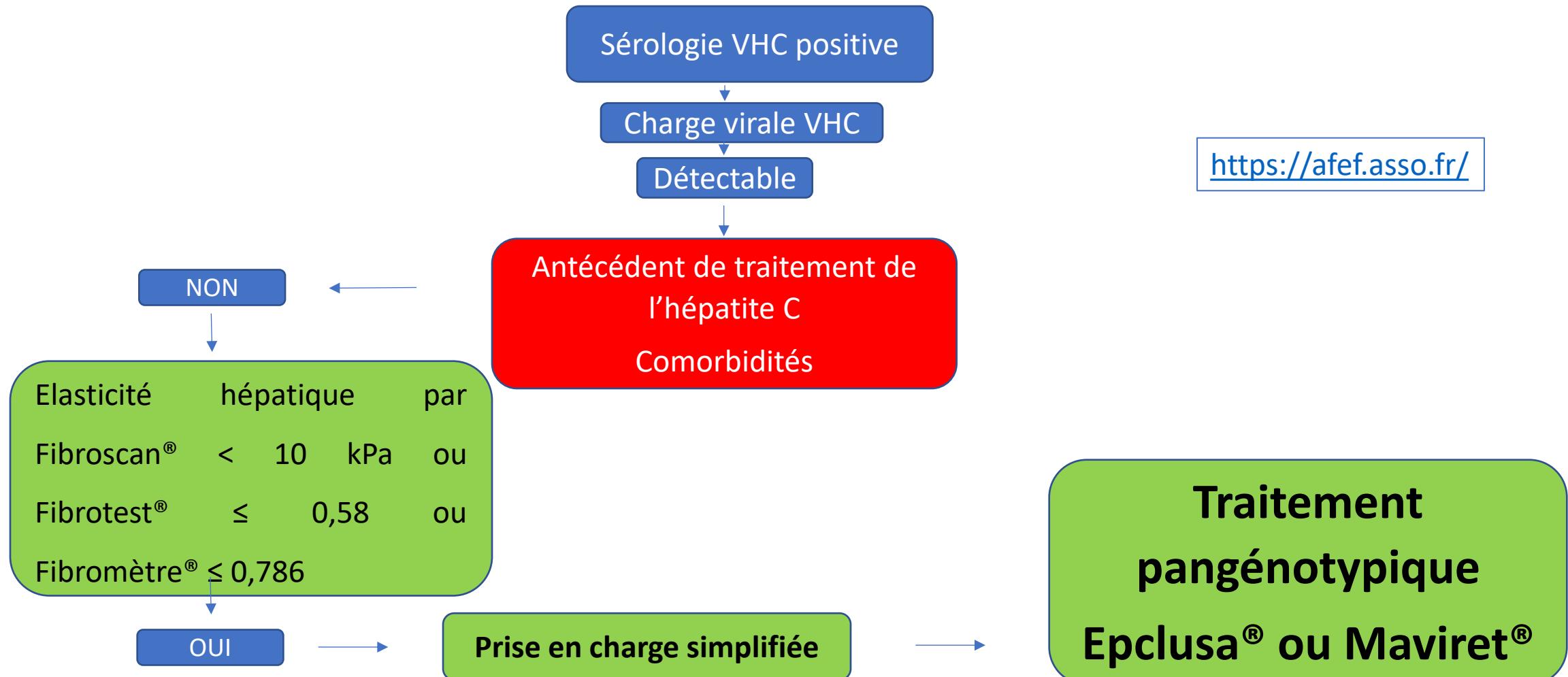


DAA era
(2011-2018)



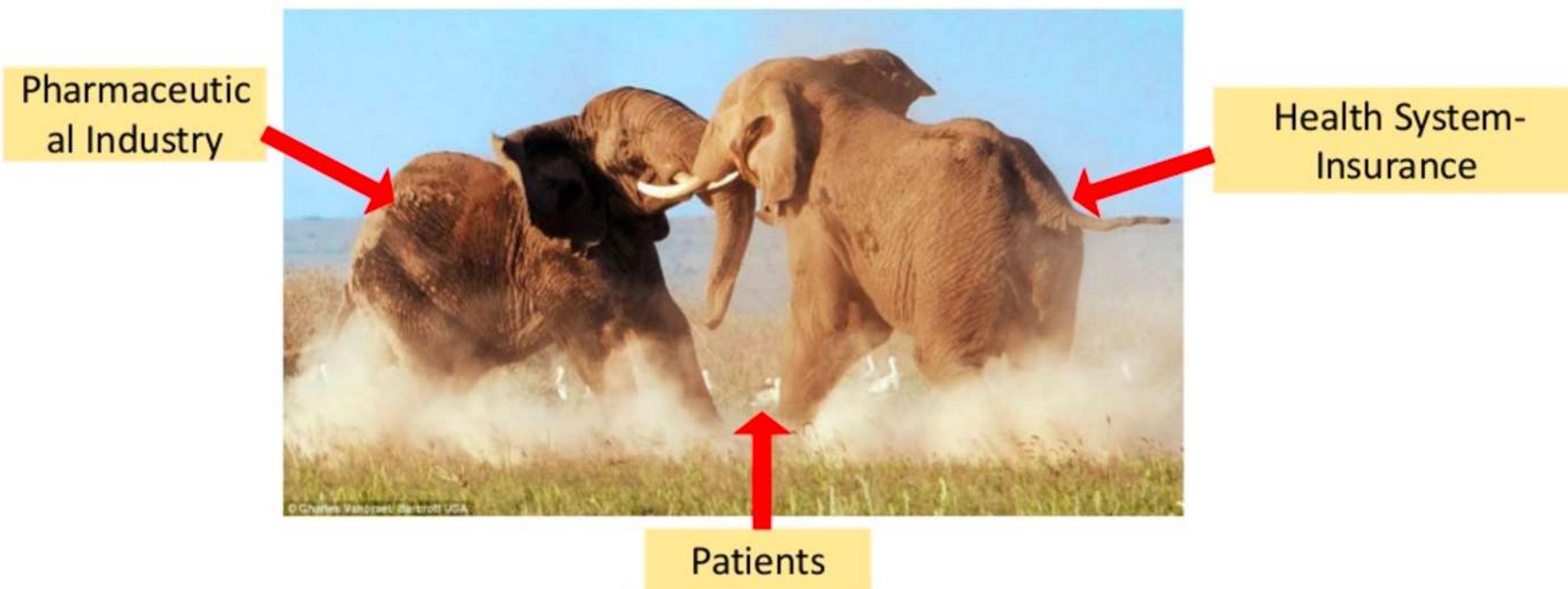
Universal screening
(2030)

Et pourtant un Parcours on ne peut plus simplifié !?

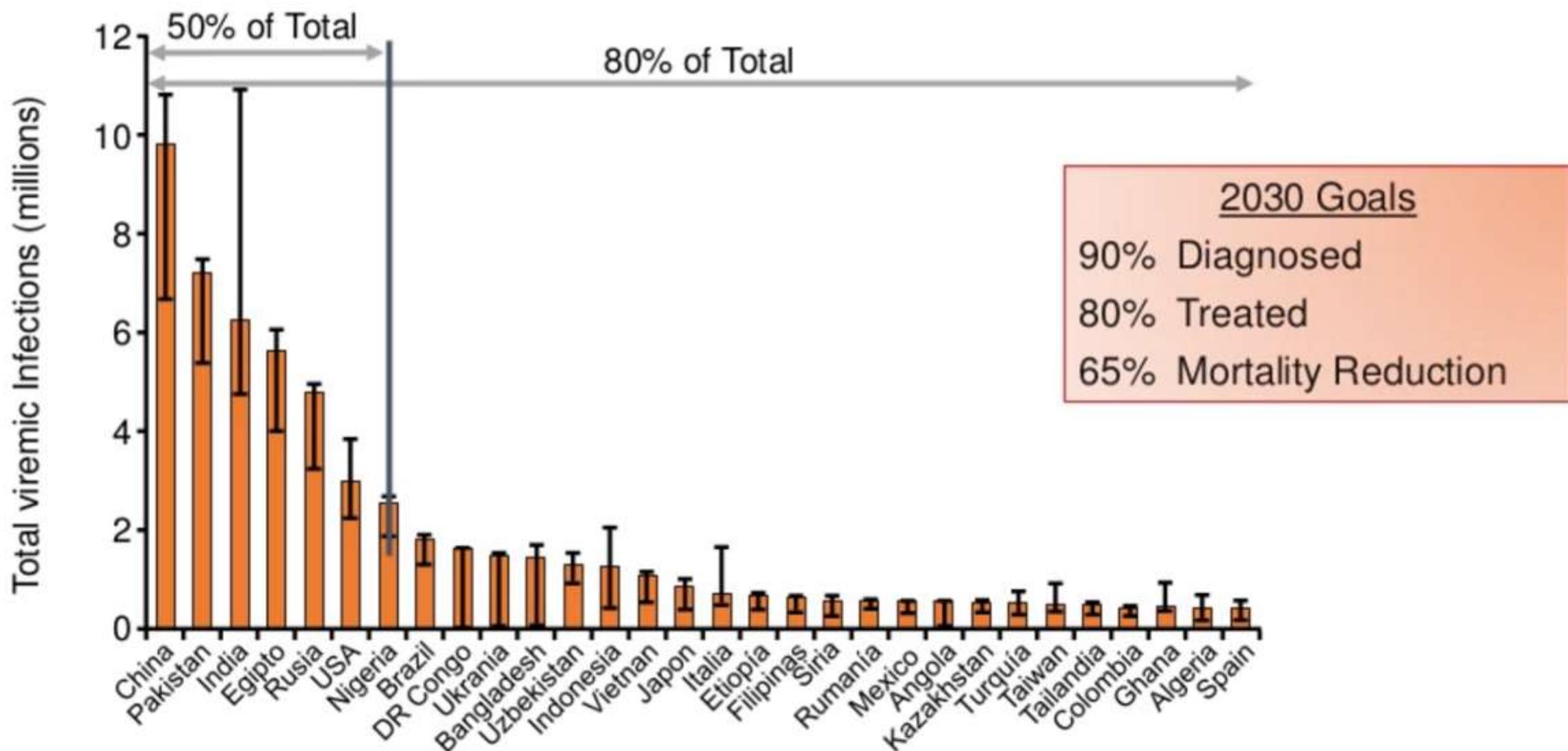


Cost & Access

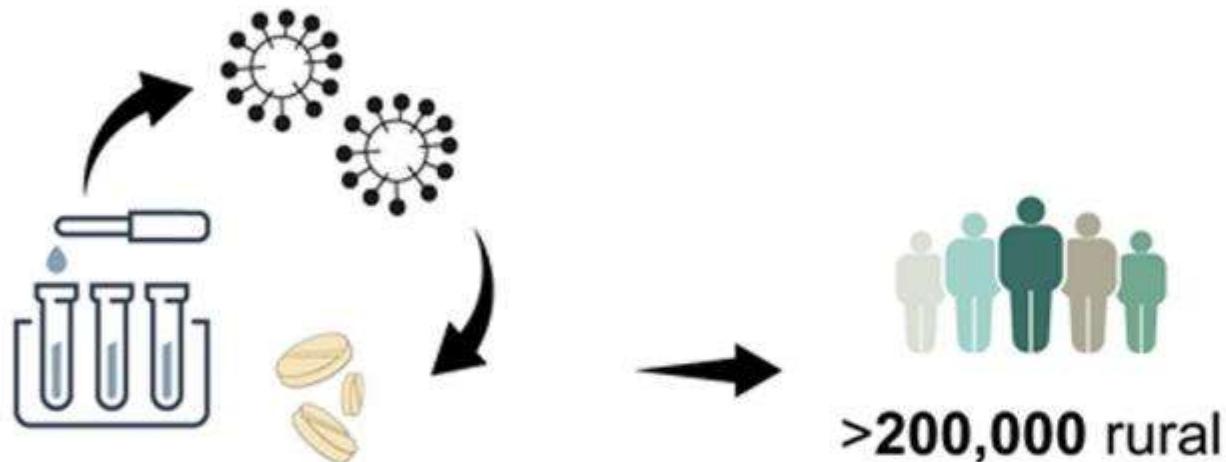
Many Health Systems and insurances limited HCV treatment based on severity of liver disease: e.g. USA Medicaid \geq F2



Seven countries account for half of people living with HCV



Programme to eliminate HCV infection in Egypt rural communities



Large community-based
educate, test and treat
programme

The **treatment** coverage and
cure of **84.6%** of the
estimated **17,137 infected**
persons aged **12-80 years**
across **73 villages**.

Nouvelles consommations modification des profils patients



Concept de micro-éliminations*

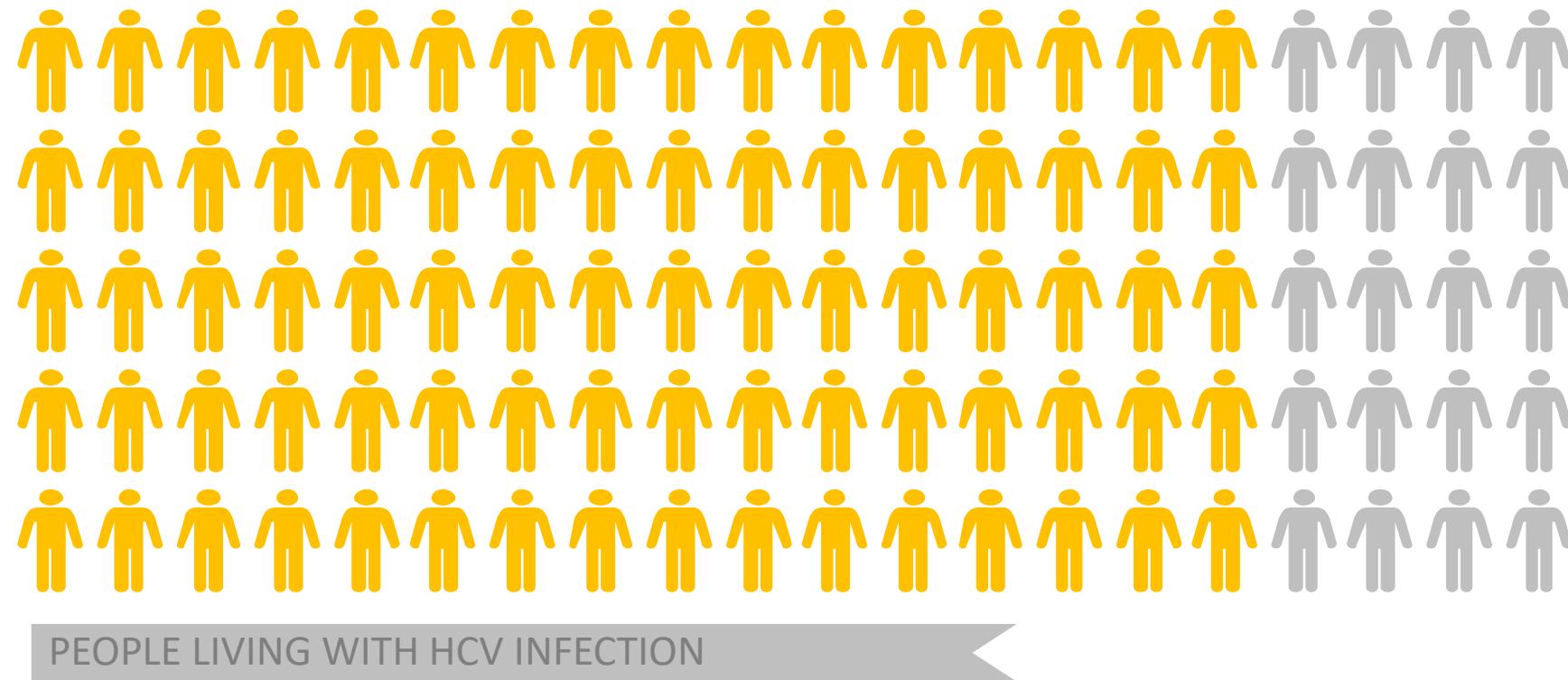


* Lazarus JV, Safreed-Harmon K, Thursz MR. The micro-elimination approach to eliminating hepatitis C: strategic and operational considerations. *Seminars in Liver Disease*. 2018 Aug;38(3):181-92.

PWID are at the core of the HCV epidemic...

80%

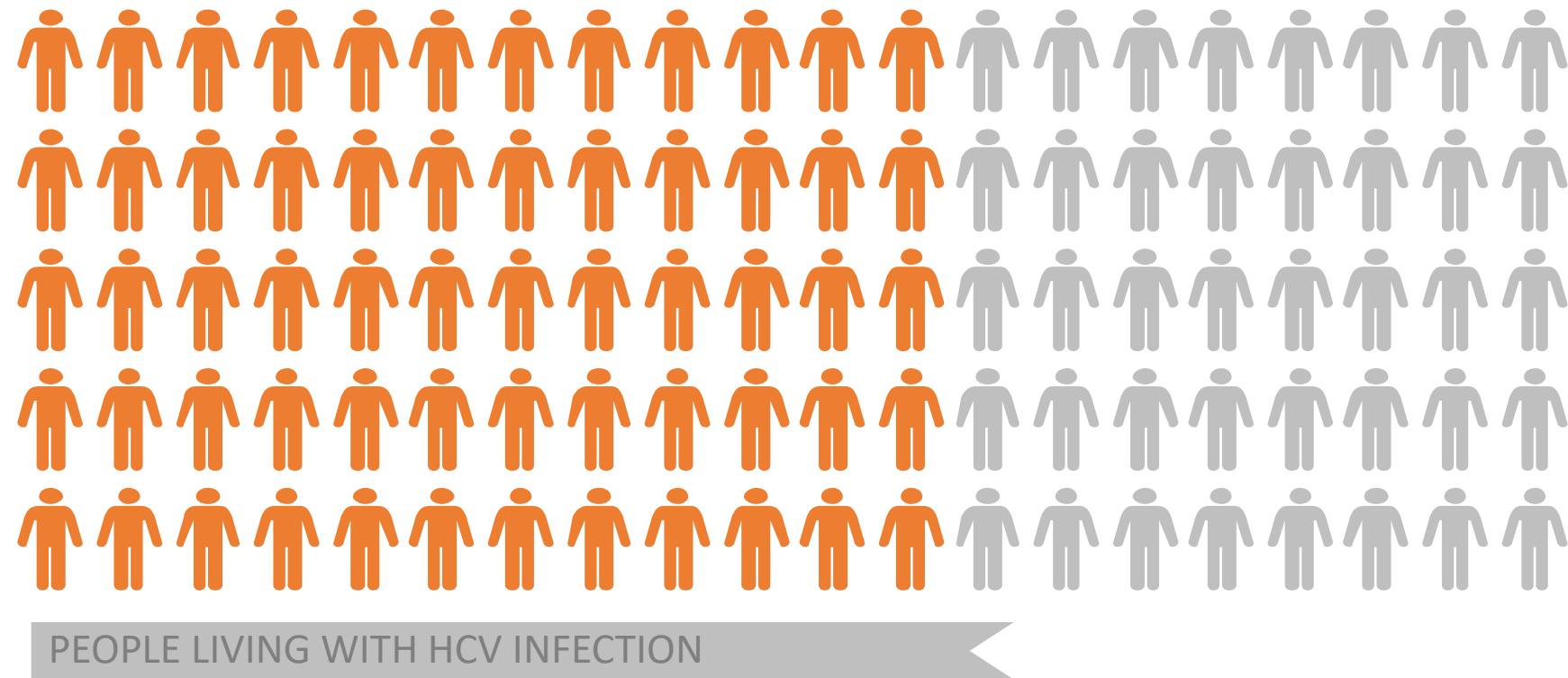
OF NEW INFECTIONS OCCUR AMONG
CURRENT PWID IN MANY COUNTRIES



PWID are at the core of the HCV epidemic ...

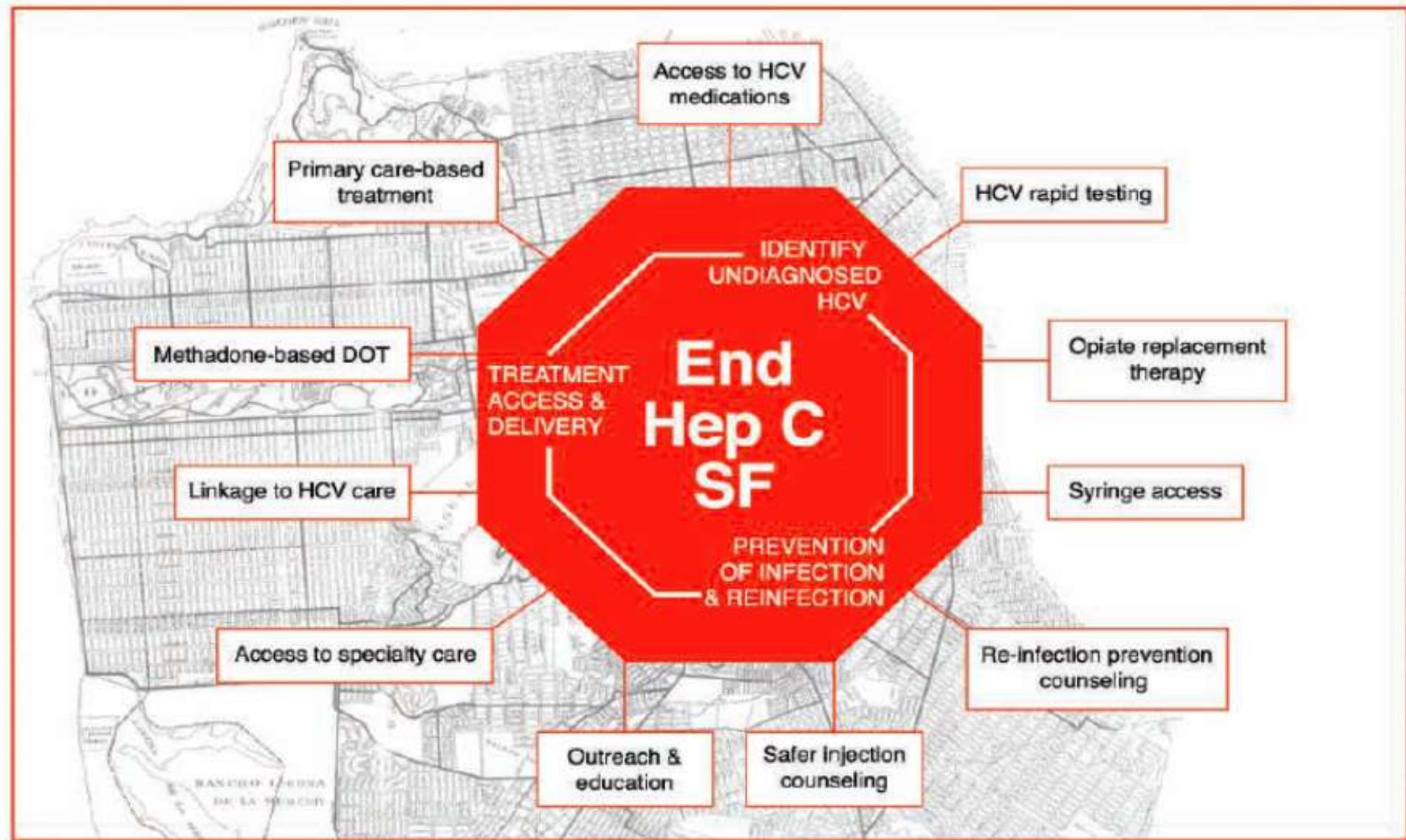
60%

OF EXISTING INFECTIONS ARE AMONG CURRENT
& FORMER PWID IN MANY COUNTRIES



END HEP C SF

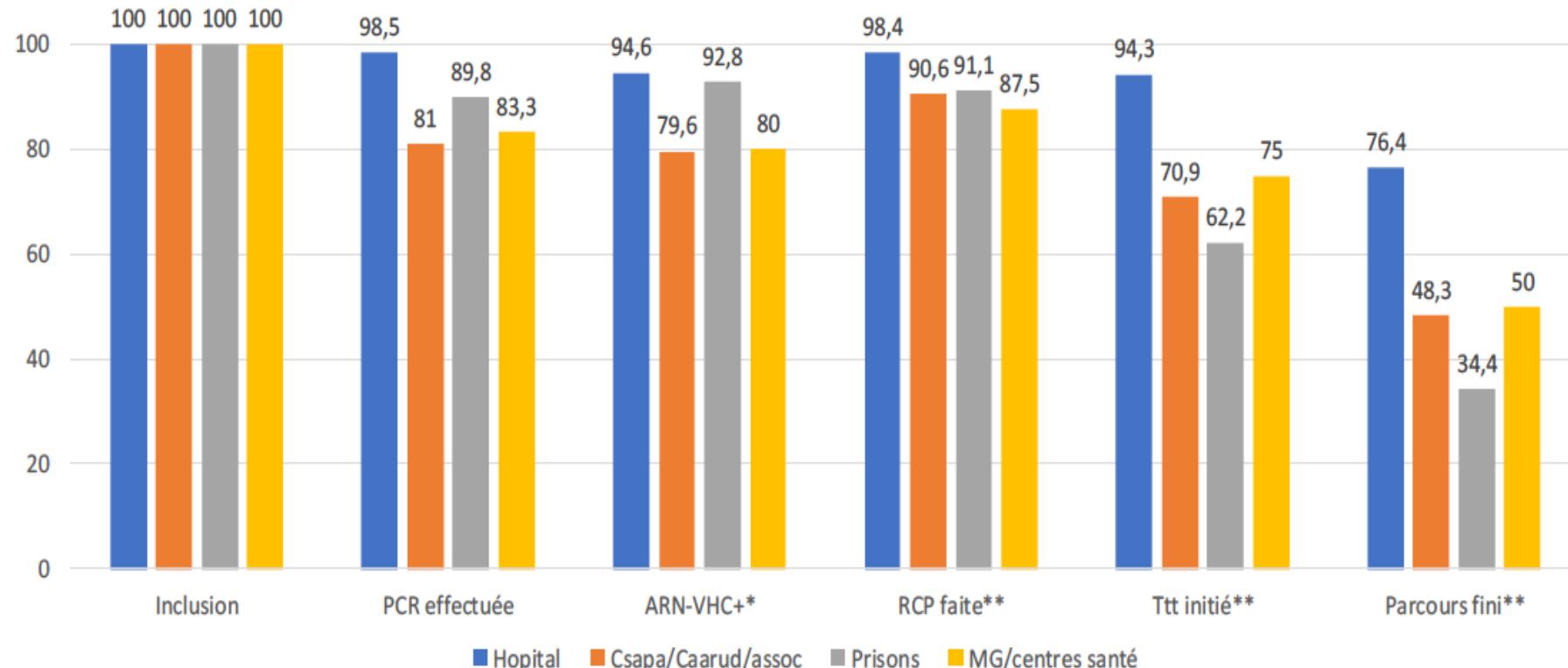
Les outils
de la RdR
« classique »
existent



pour les populations les plus vulnérables en Ile de France : Etude Parcours

Françoise Roudot-Thoraval¹, Antoine Bachelard², Anne Dulouost³, Elisabeth Avril⁴, Dominique Salmon⁵, Jean-Baptiste Trabut⁶, Karine Lacombe⁷, Hélène Fontaine⁸, Anne Simon⁹, Christophe Hezode¹, Dominique Roulot¹⁰, Stéphane Chevaliez¹¹, Stéphanie Dominguez².

Cascade de soin en fonction de la structure primaire



EASL 2019
AASLD 2019

Deux nouveaux courants épidémiologiques et autant d'obstacles à l'éradication du VHC

Source : Swaps disponible sur www.vih.org

SWAPS Chemsex

Une réalité ambivalente / 27
Troubles psychiatriques et chemsex / 30
Réduction des risques: l'intérêt de l'analyse des produits / 31
Dosage des drogues dans les cheveux / 35
Une priorité pour Aides / 37
Le cas anglais, "work hard and party harder" / 39
Un Plan crack à Paris / 41
Le cannabidiol, un agent thérapeutique prometteur ? / 5
L'e-cigarette: ange ou démon ? / 7

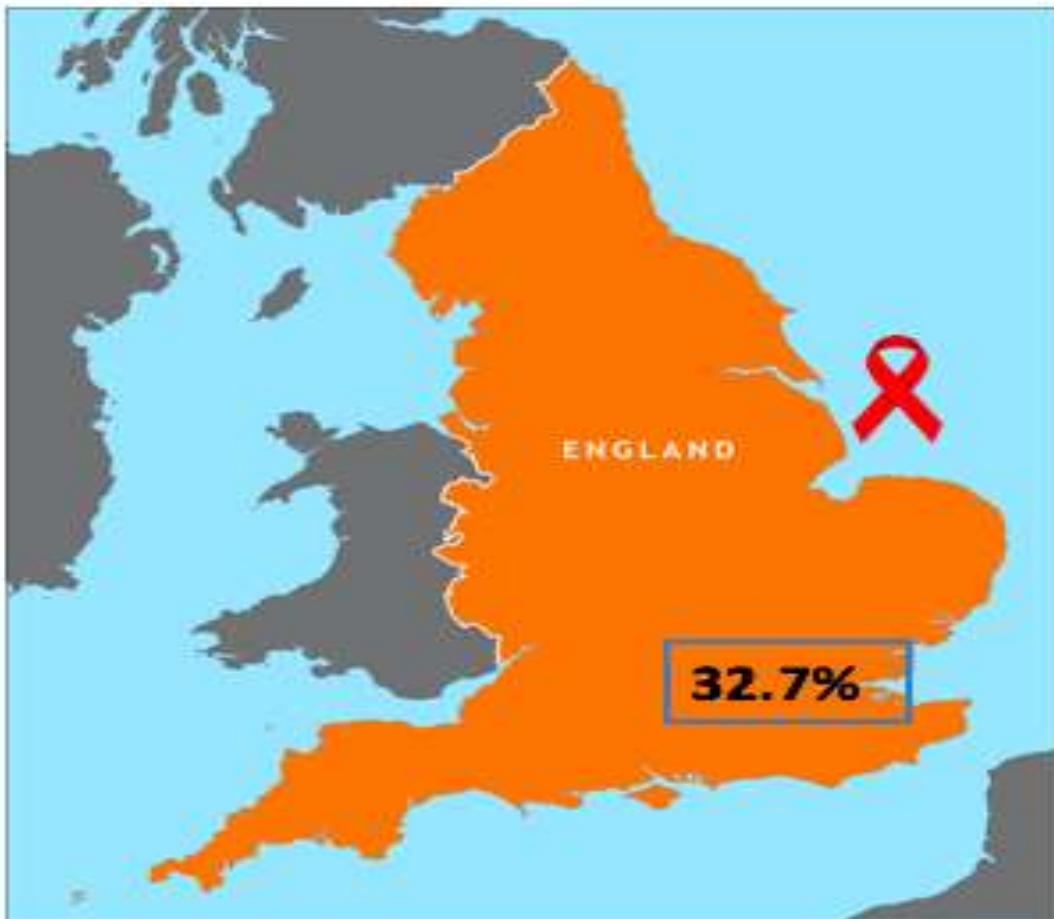
CRISE DES OPIOÏDES

États-Unis: une occasion historique pour la réduction des risques / 10
Morbidité / 13
Et en France? / 16

ONUDC : la planète des drogues au rapport / 17
Psychédéliques et dépression / 20
A-t-on besoin de traitements de substitution «long acting» en France? / 23
Drogue et sexe dans l'histoire contemporaine: entre réalités et fantasmes / 27

Santé, réduction des risques et usages de drogues N° 92-93 / 3^e et 4^e trimestre 2019

How common is chemsex in London?



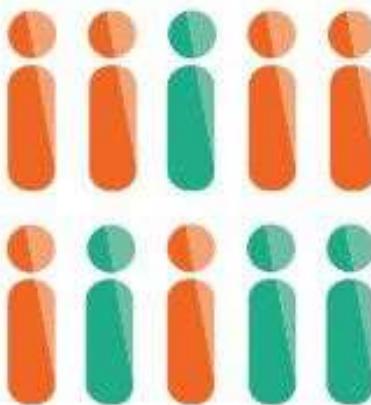
- Use of chemsex drugs (crystal, GHB/GBL or mephedrone) within previous 4 weeks:
 - For HIV positive respondents living in London: **32.7%**

HCV, HIV and ChemSex key facts:



Morbidity and mortality rates from HCV infection in HIV co-infected patients are increasing¹

7% of HIV infected gay men in London are also infected with HCV²



Approximately

92%

of HCV/HIV co-infections were in gay men located across London, Manchester & South East England in

2011²

There is currently no national strategic approach to prevent HCV infections in gay men in the UK²

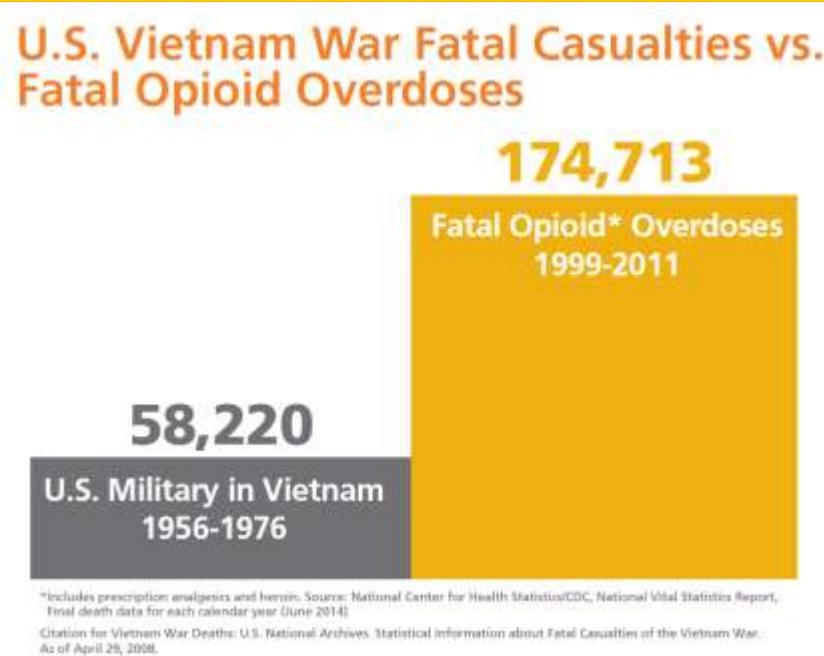
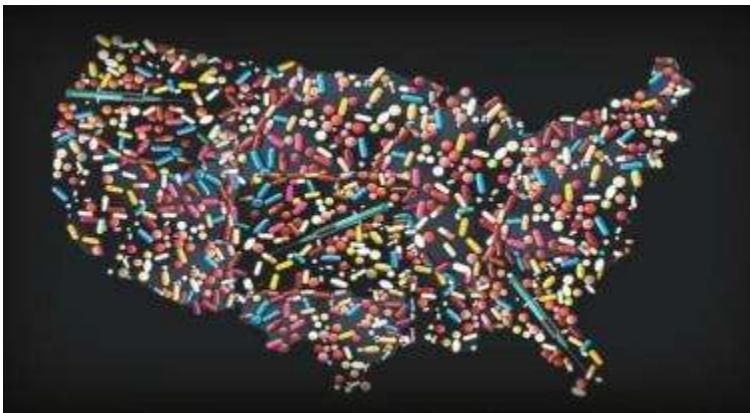
It is estimated that around **25%** of all European HIV patients have concomitant (HCV) co-infection¹

Co-infection with HIV and HCV complicates each disease²

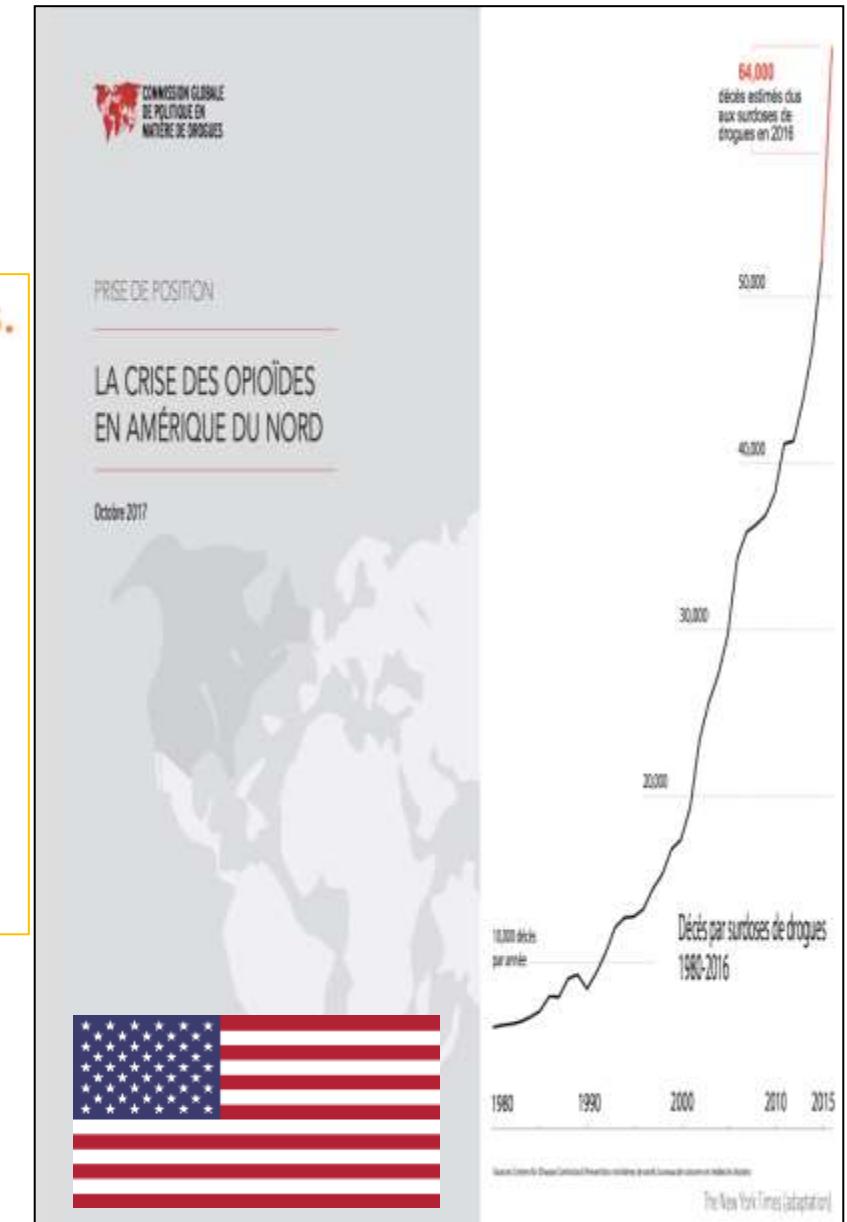
A significant proportion of HIV positive gay men who are successfully treated for HCV are rapidly re-infected with the virus² with the two-year re-infection rate at a North London hospital at 40%.²

At Chelsea & Westminster Hospital NHS Foundation Trust, which hosts robust ChemSex referral and support services, the reinfection rate is 25%.³

Crise des Opioïdes aux USA



<https://www.globalcommissionondrugs.org>



THE OPIOID EPIDEMIC BY THE NUMBERS



130+

People died every day from opioid-related drug overdoses³
(estimated)



10.3 m

People misused prescription opioids in 2018¹



47,600

People died from overdosing on opioids²



2.0 million

People had an opioid use disorder in 2018¹



808,000

People used heroin in 2018¹



81,000

People used heroin for the first time¹



2 million

People misused prescription opioids for the first time¹



15,349

Deaths attributed to overdosing on heroin (in 12-month period ending February 2019)²



32,656

Deaths attributed to overdosing on synthetic opioids other than methadone (in 12-month period ending February 2019)²

SOURCES

1. 2019 National Survey on Drug Use and Health, Mortality in the United States, 2018
2. NCHS Data Brief No. 329, November 2018
3. NCHS, National Vital Statistics System. Estimates for 2018 and 2019 are based on provisional data.



RESEARCH ARTICLE

Open Access



HCV screening in a cohort of HIV infected and uninfected homeless and marginally housed women in San Francisco, California

Kimberly Page^{1*}, Michelle Yu², Jennifer Cohen³, Jennifer Evans², Martha Shumway⁴ and Elise D. Riley⁵

Results: Among 246 women 45.9% were anti-HCV positive, of whom 61.1% were HIV coinfected; 27.4% of positives reported no prior screening. Most (72%) women were in the 'baby-boomer' birth cohort; 19% reported recent injection drug use (IDU). Factors independently associated with anti-HCV positivity were: being born in 1965 or earlier (AOR 3.94; 95%CI: 1.88, 8.26), IDU history (AOR 4.0; 95%CI: 1.68, 9.55), and number of psychiatric diagnoses (AOR 1.16; 95%CI: 1.08, 1.25).

Large Outbreak of Hepatitis C Virus Associated With Drug Diversion by a Healthcare Technician

Sharon Alroy-Preis,¹ Elizabeth R. Daly,¹ Christine Adamski,¹ Jodie Dionne-Odom,^{1,2} Elizabeth A. Talbot,^{1,2} Fengxiang Gao,¹ Steffany J. Cavallo,¹ Katrina Hansen,¹ Jennifer C. Mahoney,¹ Erin Metcalf,¹ Carol Loring,¹ Christine Bean,¹ Jan Drobniuc,³ Guo-Liang Xia,³ Saleem Kamili,³ and José T. Montero¹; for the New Hampshire and Centers for Disease Control and Prevention Investigation Teams

¹New Hampshire Department of Health and Human Services, Division of Public Health Services, Concord, and ²Geisel School of Medicine at Dartmouth, Hanover, New Hampshire; and ³Division of Viral Hepatitis, Centers for Disease Control and Prevention, Atlanta, Georgia

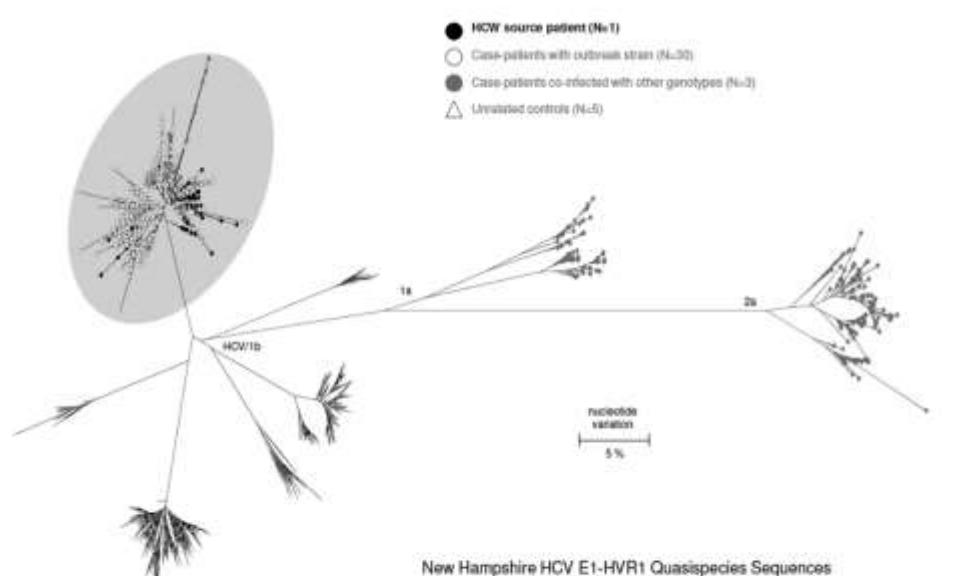


Figure 2. Phylogenetic tree showing relatedness between patient hepatitis C infections during a drug diversion-associated hepatitis C virus outbreak, New Hampshire. Abbreviations: HCV, hepatitis C virus; HCW, healthcare worker.

Mai 2012, New Hampshire (NH), 4 premiers cas de VHC de même source qui a permis d' identifier 32 cas de VHC + des 1074 patients ayant eu un Cathétérisme Cardiaque(CC), mise en évidence par des lacunes (!) dans le contrôle des utilisations de fentanyl et mise en cause du cas index : un technicien de l'unité, addict au Fentanyl, VHC +, s'auto-injectant les préparations ... 49 ans de prison

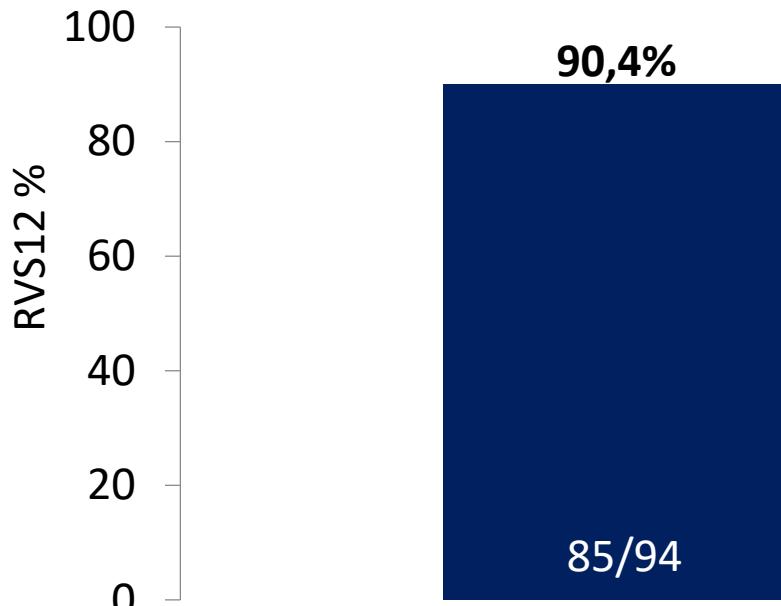
Rappel ! l'usage de drogues actif n'est pas un obstacle au traitement du VHC par les DAA

AASLD 2018-P664 actualisé. D'après M O'Sullivan, et al. UK

AASLD 2018-P619 actualisé . D'après A. Boyle, et al. UK

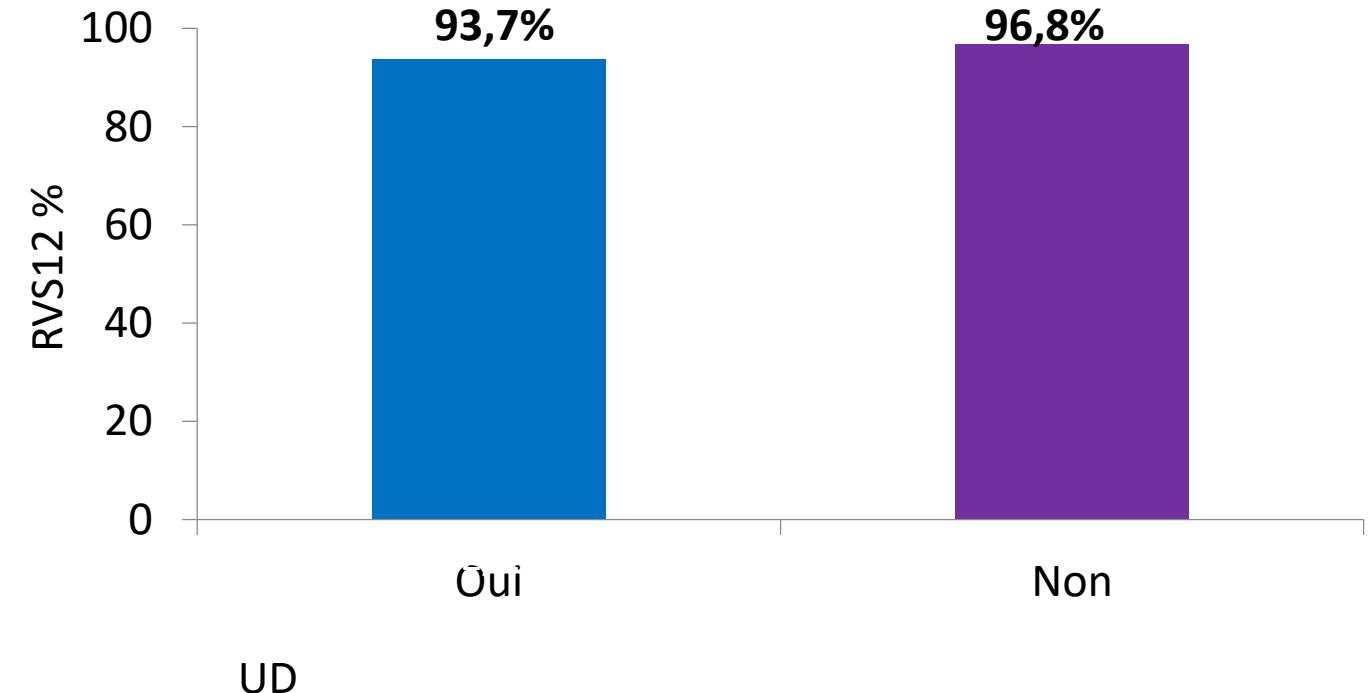
Etude anglaise

- 95 patients (2013-21)
- Alcool > 210 g/sem : 49 %
- Usage actif de drogue : 33 %
- F4 : 34 %
- Traitement par AVD



Etude écossaise

- 354 patients
- TSO : 58%
- Usage de drogue < 3 mois : 53 %
- F4 : 15,5 %
- Traitement par Glécaprevir/Pibrentasvir



Transplantation from HCV-infected donors to HCV-uninfected recipients: short course therapy to prevent transmission

Aim:

To evaluate short-course therapy with DAA + an HCV entry inhibitor to prevent HCV transmission in D+/R- transplantation

NEW

Methods:

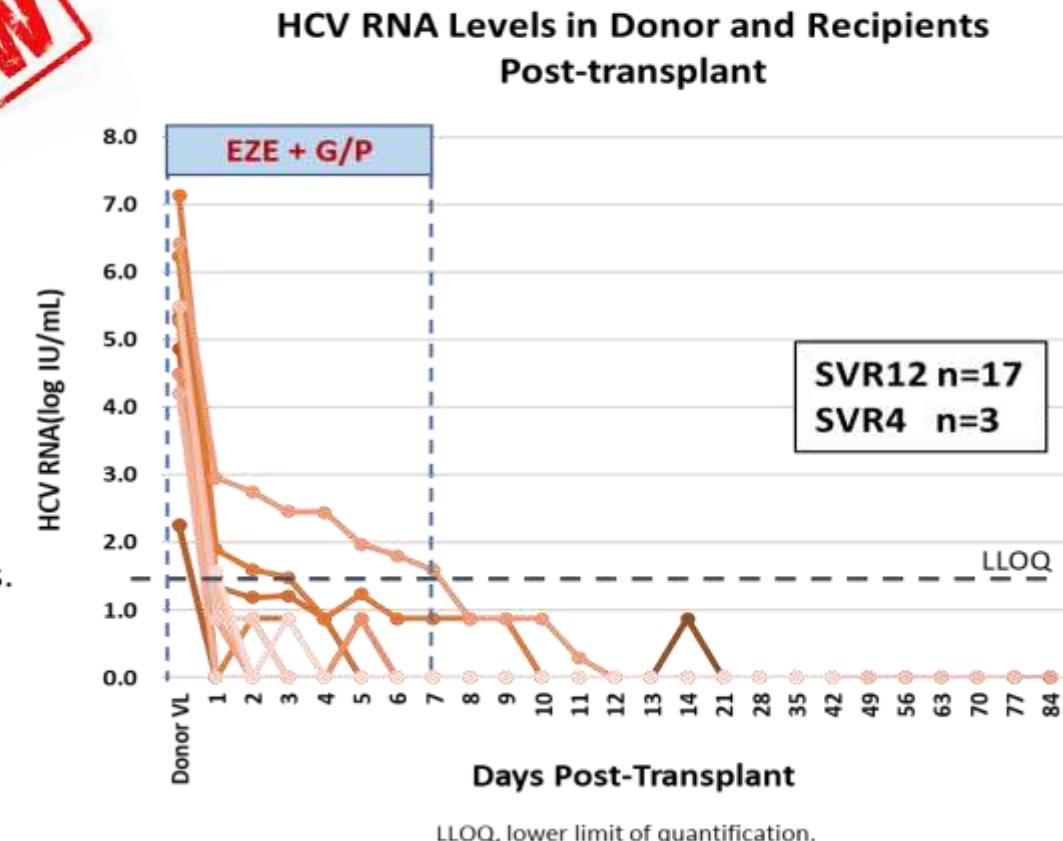
Ezetimibe 10 mg + glecaprevir/pibrentasvir 300/120 mg was given for 1 day before and 7 days after organ transplantation from HCV-infected donors (D+) to uninfected recipients (R-).

Main Findings:

- 20 HCV-negative recipients received organs (10 lung, 7 kidney, 3 heart) from 14 HCV-viremic donors (median HCV RNA 5.33 log IU/mL).
- All 20 recipients are HCV RNA negative at last f/u (12w n=17, 4w n=3).
- Donor VL was the only predictor of transient post-transplant viremia.
- Reversible ALT and CK elevations were noted with no other safety concerns.

Conclusions:

Ezetimibe + glecaprevir/pibrentasvir for 1 d pre- and 7 d post-transplant, prevented transmission or establishment of infection in HCV D+/R- organ transplantation.



Feld JJ, et al. Abstract 38

AASLD 2019

Effet « collatéral » de la crise des Opioïdes aux Etats-Unis

AIDS

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Home > Published Ahead-of-Print > Early diagnosis and risk factors of acute hepatitis c in hig...

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Early diagnosis and risk factors of acute hepatitis c in high-risk men who have sex with men on pre-exposure prophylaxis

Gras, Julien^a; Mahjoub, Nadia^b; Charreau, Isabelle^c; Cotte, Laurent^d; Tremblay, Cécile^e; Chas, Julie^f; Raffi, François^g; Cua, Eric^h; Guillou, Brigitteⁱ; Guigue, Nicolas^b; Chaix, Marie Laure^{b,j}; Meyer, Laurence^c; Molina, Jean Michel^{a,j}; Delaugerre, Constance^{b,j} and the Ipergay study group

AIDS: September 2, 2019 - Volume Publish Ahead of Print - Issue - p

doi: 10.1097/QAD.0000000000002364

ORIGINAL ARTICLE: PDF Only

• PreP et HCV

Among 429 enrolled participants, 14 were diagnosed with AHCV infection, with a median follow-up of 2.1 (IQR: 1.5–2.8) years. AHCV incidence was 1.40 per 100 person-years (95%CI, 0.74–2.39). Patients with AHCV reported a significantly higher number of sexual acts and/or partners, and more frequent recreational drug use at baseline. At the prior visit before AHCV diagnosis (median of 2 months earlier), sensitivities of HCV RNA and HCV antigen tests were respectively 100% and 89%, whereas none of the patients had a positive serology, and only 25% had elevated ALT.

CID 2016;62 (15 March)

Risk of Late Relapse or Reinfection With Hepatitis C Virus After Achieving a Sustained Virological Response: A Systematic Review and Meta-analysis

Bryony Simmons,¹ Jawaad Saleem,¹ Andrew Hill,² Richard D. Riley,³ and Graham S. Cooke¹

¹Division of Medicine, Imperial College London, ²Pharmacology and Therapeutics, Liverpool University, and ³Research Institute of Primary Care and Health Sciences, Keele University, Staffordshire, United Kingdom

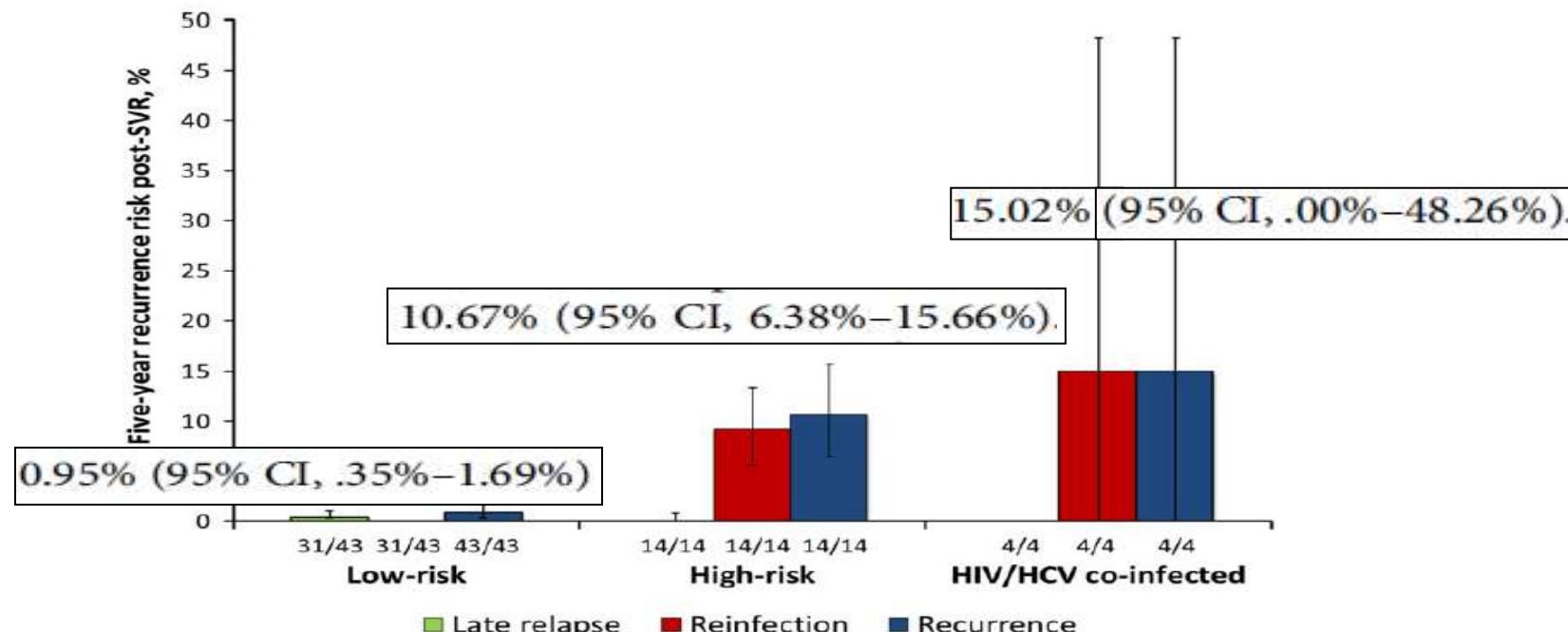


Figure 2. Summary 5-year risk (95% confidence interval) of recurrence post-sustained virological response (SVR), by risk group. Presented are the pooled estimates for the 5-year risk of recurrence after achieving an SVR. Also shown are the number of studies that were included to derive each estimate. Abbreviations: HCV, hepatitis C virus; HIV, human immunodeficiency virus.

HIV transmission category	Number	Number of reinfections	Years of follow-up	Rate of reinfection per 100 person-years (95% CI)
All categories	2359	17	3546	0.48 (0.30–0.77)
PWID	1459	5	2329	0.21 (0.09–0.52)
MSM	177	12	202	5.93 (3.37–10.44)
Other/unknown	723	0	1015	—

CI, confidence interval; DAA, direct-acting antivirals; HCV, hepatitis C virus; PWID, people who inject drugs.

No.	Age	Sex	Risk Factor	HCV genotype	Cirrhosis	DAA regimen	Weeks to reinfection	Reinfection genotype	Risk practices for reinfection	Treatment of reinfection	Outcome
1	40	M	MSM	1a	No	OBV/PTV/r + DSV	14	1a	uAIC, chemsex (slamming)	SOF/LDV	SVR
2	40	M	MSM	1a	No	SOF/LDV	18	4	uAIC, chemsex, STI	GZR/EBV	SVR
3	46	M	MSM	4	No	OBV/PTV/r	15	1a	uAIC, chemsex, STI	GLE/PIB	SVR
4	49	M	MSM	1a	No	OBV/PTV/r + DSV	12	1a	uAIC	SOF/VEL/VOX	Ongoing
5	29	M	MSM	1a	No	SOF/LDV	19	1a	uAIC, chemsex (slamming)	None	Lost to FU
6	36	M	MSM	4	No	OBV/PTV/r	26	1a	uAIC, chemsex	OBV/PTV/r + DSV	SVR
7	45	M	MSM	1a	No	SOF/LDV	15	1a	uAIC, chemsex (slamming)	GZR/EBV	Ongoing
8	40	M	MSM	4	No	SOF/LDV	21	1a	uAIC, STI	SOF/LDV	Pending
9	40	M	MSM	1a	No	SOF/LDV	8	4	uAIC, chemsex (slamming)	SOF/LDV	Pending
10	42	M	MSM	1a	Yes	SOF/LDV	27	1a	uAIC	GLE/PIB	SVR
11	50	M	MSM	1b	No	SOF/LDV	14	1a	uAIC, STI	SOF/LDV	Pending
12	43	M	MSM	4	No	SOF/LDV	55	4	uAIC, chemsex, STI	SOF/LDV	SVR
13	34	F	PWID	1b	No	OBV/PTV/r + DSV	13	1a	IDU	GZR/EBV	Ongoing
14	55	M	PWID	1a	No	SOF/LDV	10	3	IDU	SOF/VEL	Ongoing
15	46	M	PWID	4	Yes	SOF/LDV	60	1b	IDU	SOF/LDV	SVR
16	46	M	PWID	1b	Yes	SOF/LDV	50	1a	IDU	None	Death
17	56	M	PWID	4	No	SOF/LDV	12	4	None reported	SOF/VEL/VOX	Pending

DAA, direct-acting antivirals; DSV, dasabuvir; F, female; FU, follow-up; GLE/PIB, glecaprevir/pibrentasvir; GZR/EBV, grazoprevir/elbasvir; HCV, hepatitis C virus; M, male; OBV/PTV/r, ombitasvir/paritaprevir/ritonavir; PWID, people who inject drugs; SOF/LDV, sofosbuvir/ledipasvir; SOF/VEL/VOX, sofosbuvir, velpatasvir, voxilaprevir; STI, sexually transmitted infection; SVR, sustained viral response; uAIC, unprotected anal intercourse.

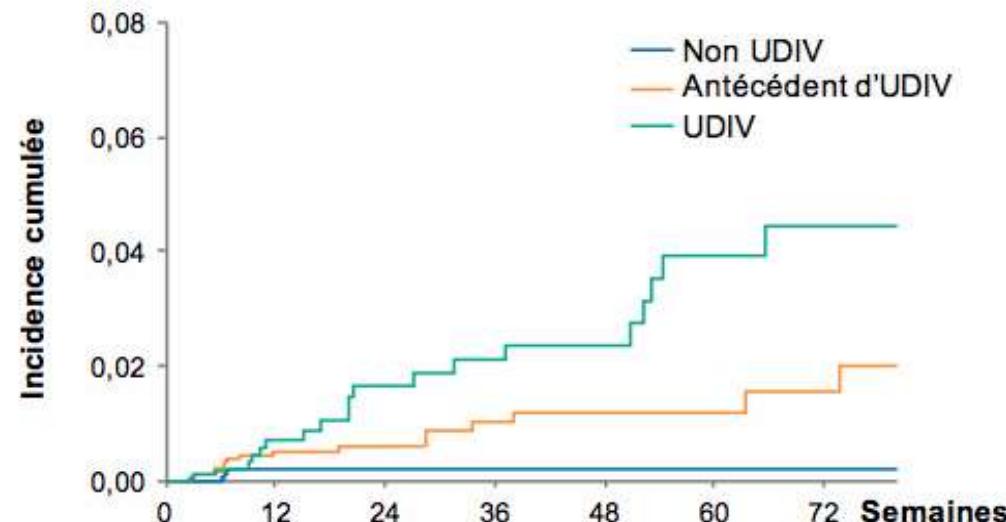
Reinfection by hepatitis C virus following effective all-oral direct-acting antiviral drug therapy in HIV/hepatitis C virus coinfected individuals.

Berenguer, Juan; Gil-Martin, Angela; Jarrin, Inmaculada; Montes, Maria; Dominguez, Lourdes; Aldamiz-Echevarria, Teresa; Tellez, Maria; Santos, Ignacio; Troya, Jesus; Losa, Juan; Serrano, Regino; De Guzman, Maria; Calvo, Maria; Gonzalez-Garcia, Juan (Madrid CoRe Studt group)

AIDS. 33(4):685-689, March 15, 2019.

- Étude ayant pour objectif d'évaluer la fréquence et les risques associés aux réinfections au sein d'une grande cohorte canadienne incluant 4 114 patients traités par AVD
- Réinfection définie par un ARN VHC positif après l'obtention d'une RVS12

Incidence cumulée des réinfections en fonction des antécédents d'usage de drogues i.v.



Non UDIV	1 446	1 194	621	526	375	290	212
Antécédent d'UDIV	1 793	1 495	743	610	440	335	234
UDIV	675	747	459	379	287	215	165

Taux de réinfection (pour 100 personnes-années)

Population totale	1,44
< 45 ans	4,16
> 65 ans	0,38
UDIV récents (< 3 ans)	3,11
UDIV anciens (> 3 ans)	1,41
UDIV sous TSO quotidiens	1,90
UDIV sans TSO ou occasionnels	4,10
VIH	3,44

→ Taux de réinfection au sein d'une large cohorte de patients traités par AVD : 1,44 pour 100 PA

→ L'usage de drogues récent est associé à un taux de réinfection plus élevé. Parmi les UDIV actifs, le jeune âge, le sexe masculin, la consommation excessive d'alcool et l'infection au VIH sont associés à un risque plus élevé



The impact of COVID-19 on hepatitis elimination

Published Online
July 27, 2020
[https://doi.org/10.1016/
S2468-1253\(20\)30238-7](https://doi.org/10.1016/S2468-1253(20)30238-7)

Around the world, the communities most underserved by health systems have been among the hardest hit by the COVID-19 pandemic.¹ Often, these are the same groups that are disproportionately affected by viral hepatitis. With just 10 years to achieve WHO's target,

adopted in 2016, to eliminate hepatitis by 2030,² has the COVID-19 pandemic put reaching that goal in greater doubt?

The World Hepatitis Alliance (WHA), a global umbrella organisation representing more than 300 member

Civil society organisations are a key contributor to national hepatitis elimination programmes³ and 123 (94%) of 131 analysable responses reported that their services had been affected by the crisis.

64 respondents gave reasons for lack of access to treatment, 32 (50%) of whom (14 [64%] of 22 in LMICs) felt that the cause was people avoiding health-care facilities due to COVID-19. Of 40 respondents from outside the USA, 22 (55%) felt that travel restrictions were the main reason people were unable to access treatment.



International Journal of Antimicrobial Agents 30 (2007) 297–308

INTERNATIONAL JOURNAL OF
Antimicrobial Agents

www.ischemo.org

Review

Recycling of chloroquine and its hydroxyl analogue to face bacterial, fungal and viral infections in the 21st century

Jean-Marc Rolain ^{*}, Philippe Colson, Didier Raoult

*Unité des Rickettsies, CNRS UMR 6020, Université de la Méditerranée, Faculté de Médecine et de Pharmacie,
27 Boulevard Jean Moulin, 13385 Marseille Cedex 5, France*



RAOULT : LE "MBAPPÉ DE LA RECHERCHE" ?

ALERTE INFO - "Il faut bien trouver quelqu'un qui symbolise cette crise et c'est tombé sur moi" (J. Raoult/BFM TV)

International Journal of Antimicrobial Agents

Official journal of the International Society of Antimicrobial Chemotherapy

Editor-in-Chief: J.M. Rolain, PhD

> [View Editorial Board](#)

Table 1
Bacteria, fungi and viruses inhibited by chloroquine and/or hydroxychloroquine (in vitro data)

Bacteria	Reference	Fungi	Reference	Virus	Reference
<i>Coxiella burnetii</i>	[5,13]	<i>Histoplasma capsulatum</i>	[24]	HIV	[2,29–32]
<i>Tropheryma whipplei</i>	[7,8]	<i>Cryptococcus neoformans</i>	[15,25]	SARS-CoV	[33,34]
<i>Legionella pneumophila</i>	[11]	<i>Paracoccidioides brasiliensis</i>	[26]	Influenza viruses	[35–38]
<i>Francisella tularensis</i>	[12]	<i>Penicillium marneffei</i>	[15,27]	Flavivirus, including yellow fever virus	[39]
<i>Mycobacterium tuberculosis</i>	[14]	<i>Aspergillus fumigatus</i>	[28]	Rubella virus	[40,41]
<i>Mycobacterium avium</i>	[15]			HAV	[42]
<i>Salmonella Typhi</i>	[16]			HBV	[43,44]
<i>Escherichia coli</i>	[17]			HCV	[45]
<i>Bacillus anthracis</i>	[18]			Arenavirus	[46]
<i>Bacillus subtilis</i>	[19]			Lymphocytic choriomeningitis virus	[47]
<i>Borrelia burgdorferi</i>	[20]			Rabies virus	[48]
<i>Brucella abortus</i>	[21]			Varicella-Zoster virus	[49]
<i>Staphylococcus aureus</i>	[22]			Respiratory syncytial virus	[50]
<i>Listeria monocytogenes</i>	[23]			Sindbis virus	[51]
				Herpes simplex viruses	[41,52,53]
				Epstein-Barr virus	[54]
				Poliioviruses	[55–57]
				Newcastle disease virus	[58]
				Borna disease virus	[59]
				Vesicular stomatitis virus	[37,60–62]
				Vaccinia virus	[63]
				Murine RNA tumour virus	[64]
				FMDV	[65]
				Mayaro virus	[66]
				Feline calicivirus	[67]
				African swine fever virus	[68]
				Bovine leukaemia virus	[69]
				Canine parvovirus	[70]
				Minute Virus of Mice	[71]

[45] Blanchard E, Belouzard S, Goueslain L, et al. Hepatitis C virus entry depends on clathrin-mediated endocytosis. *J Virol* 2006;80:6964–72.



Systematic review

Clinical evidence for repurposing chloroquine and hydroxychloroquine as antiviral agents: a systematic review

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Conclusion

CQ and HCQ have been examined for their antiviral properties in many *in vitro* and animal studies for more than five decades and in a limited number of human clinical studies spanning over 25 years. For HIV and HCV infections, the benefit of either drug is doubtful and perhaps no longer relevant as other effective treatments are now available for viral load suppression (HIV) or cure (HCV). There is good evidence that CQ is ineffective in curing dengue infection or preventing dengue haemorrhagic fever. CQ also may not have any benefit in curing acute chikungunya infection. A role for HCQ or CQ in COVID-19 is as yet unclear and needs to be assessed by well-designed randomized double-blind clinical trials.

A large central word "merci" in red, surrounded by various other words for "thank you" in different languages, including English, French, Spanish, Italian, German, Dutch, Portuguese, and many others from around the world.