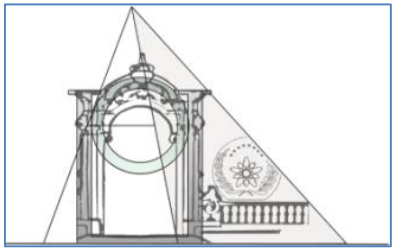
Università degli Studi della Campania *Luigi Vanvitelli*

X Workshop Nazionale
Innovazione e Ricerca per la Pratica Clinica
TERAPIE INNOVATIVE
DELLE EPATITI CRONICHE VIRALI
Firenze, 13-14 gennaio 2020
Centro Congressi Hotel Londra



HBV e HDV: nuovi scenari legati alla migrazione

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Disclosures

NC reports:

- grants from ViiV Healthcare, Janssen-Cilag and Gilead Science
- personal fees from Gilead Sciences, Abbvie, Bristol-Myers Squibb and Merk-Sharp & Dohme, Angelini

Items

- HBV and HDV epidemiology
- Impact of migrations
- HBV and HDV infection in migrants population
  - Worldwide
  - Italy
- Strategies of interventions

Estimations of worldwide prevalence of chronic hepatitis B virus infection: a systematic review of data published between 1965 and 2013

Aparna Schweitzer, Johannes Horn, Rafael T Mikolajczyk

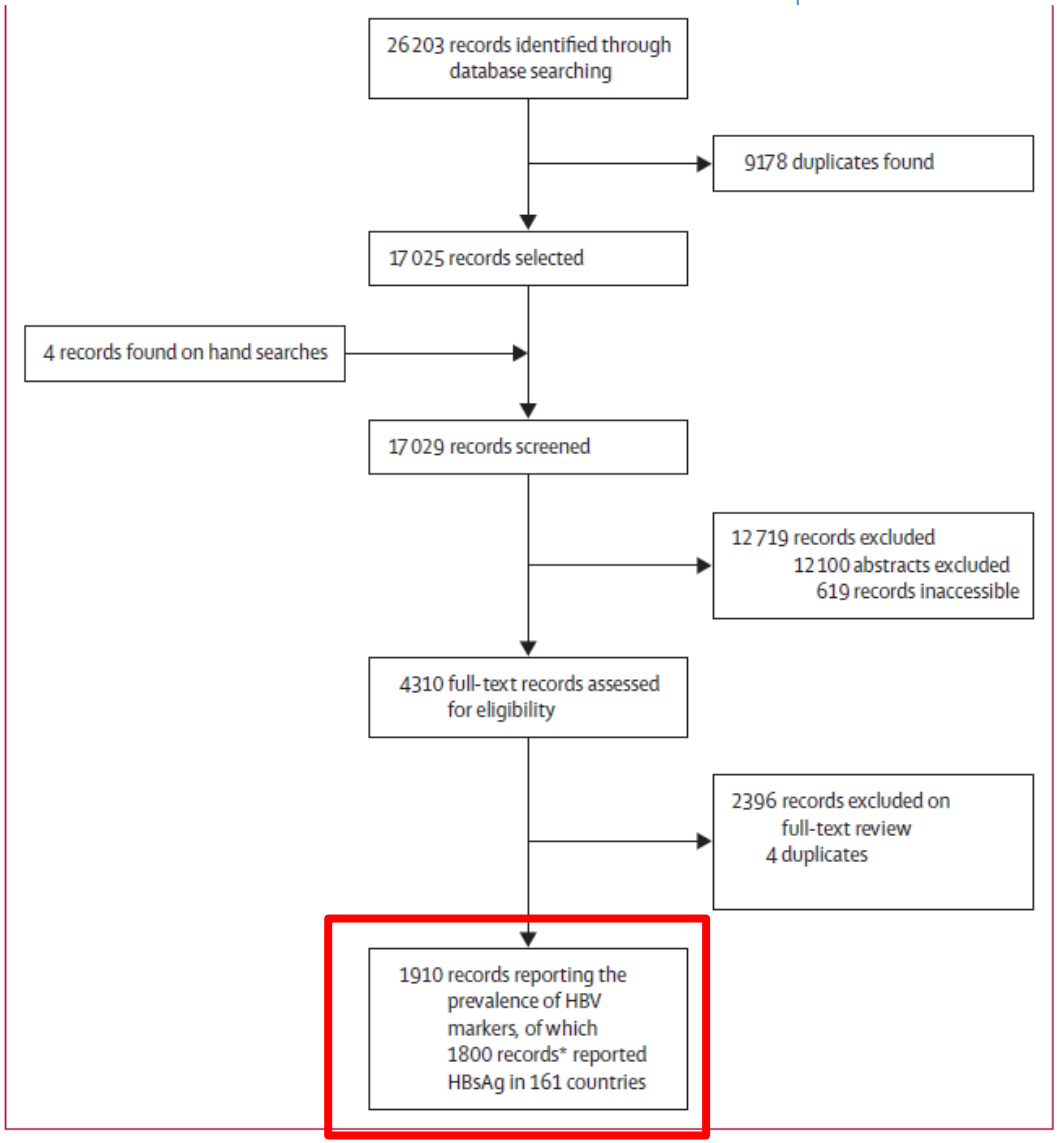


Figure 1: **Flowchart of study selection**
*In total we found 1862 reports on the prevalence of HBsAg due to multicentric, multinational studies.

Lancet 2015

Estimations of worldwide prevalence of chronic hepatitis B virus infection: a systematic review of data published between 1965 and 2013

Aparna Schweitzer, Johannes Horn, Rafael T Mikolajczyk, Gérard Krause, Jördis J Ott

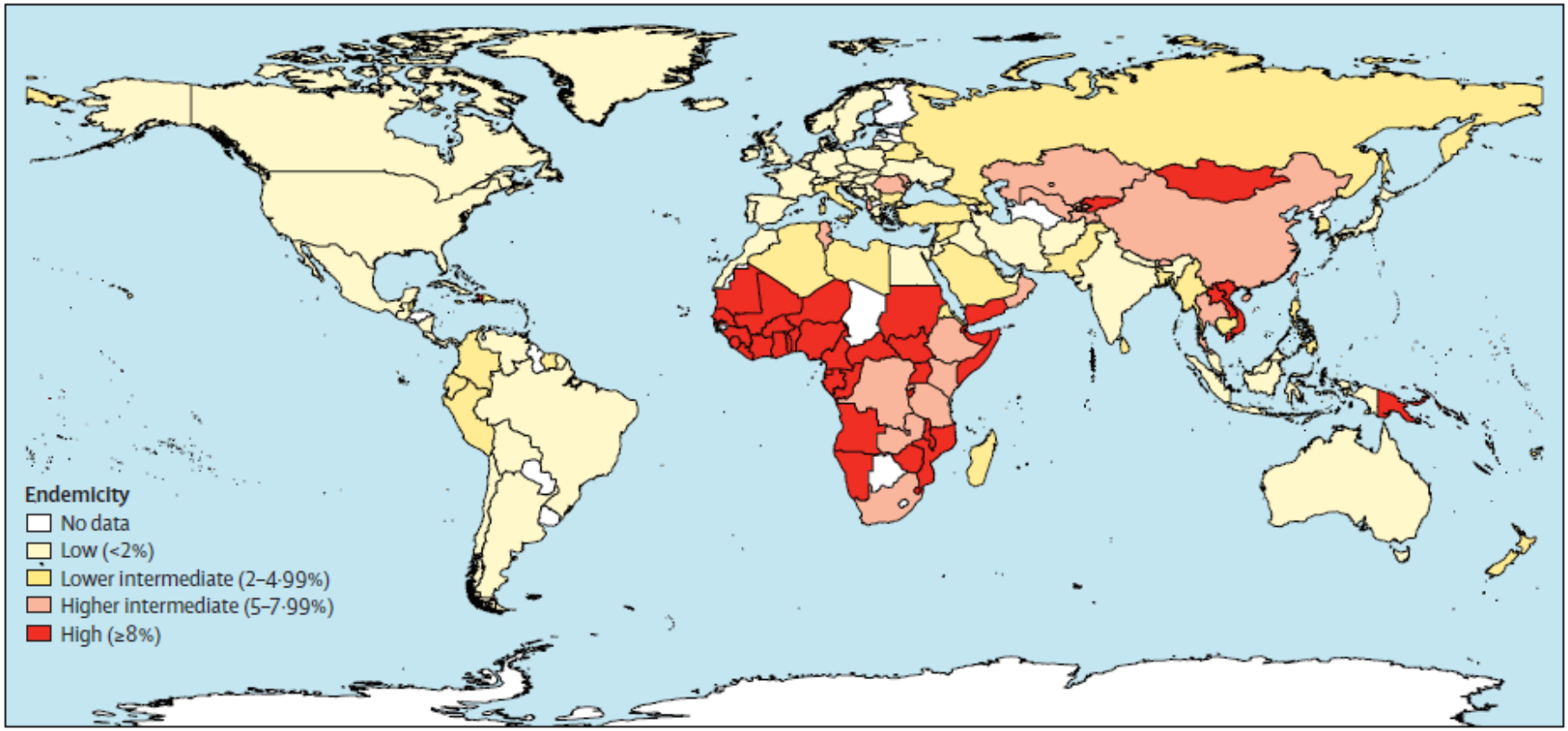
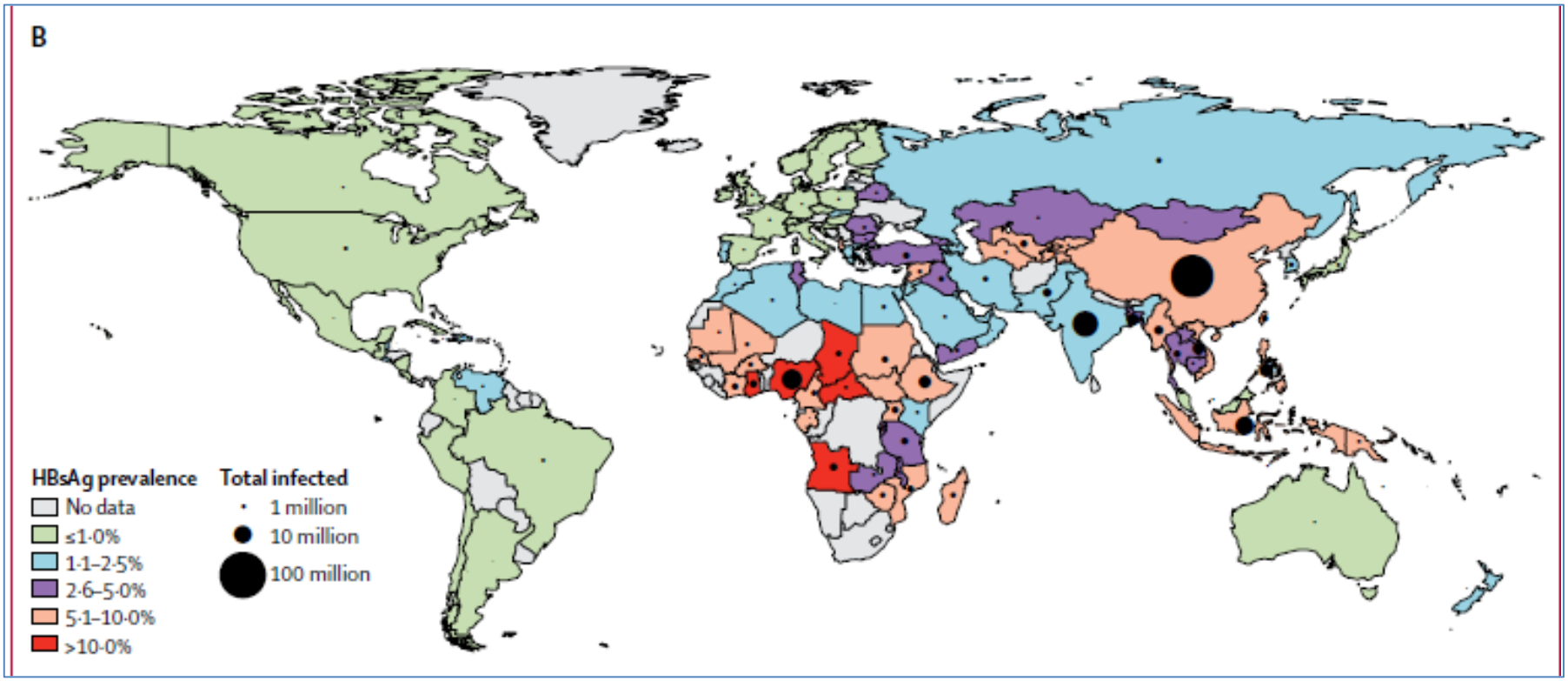


Figure 2: Global HBsAg endemicity (1957–2013)

Lancet 2015

Global prevalence, treatment, and prevention of hepatitis B virus infection in 2016: a modelling study

*The Polaris Observatory Collaborators**



Lancet Gastroenterol Hep 2018

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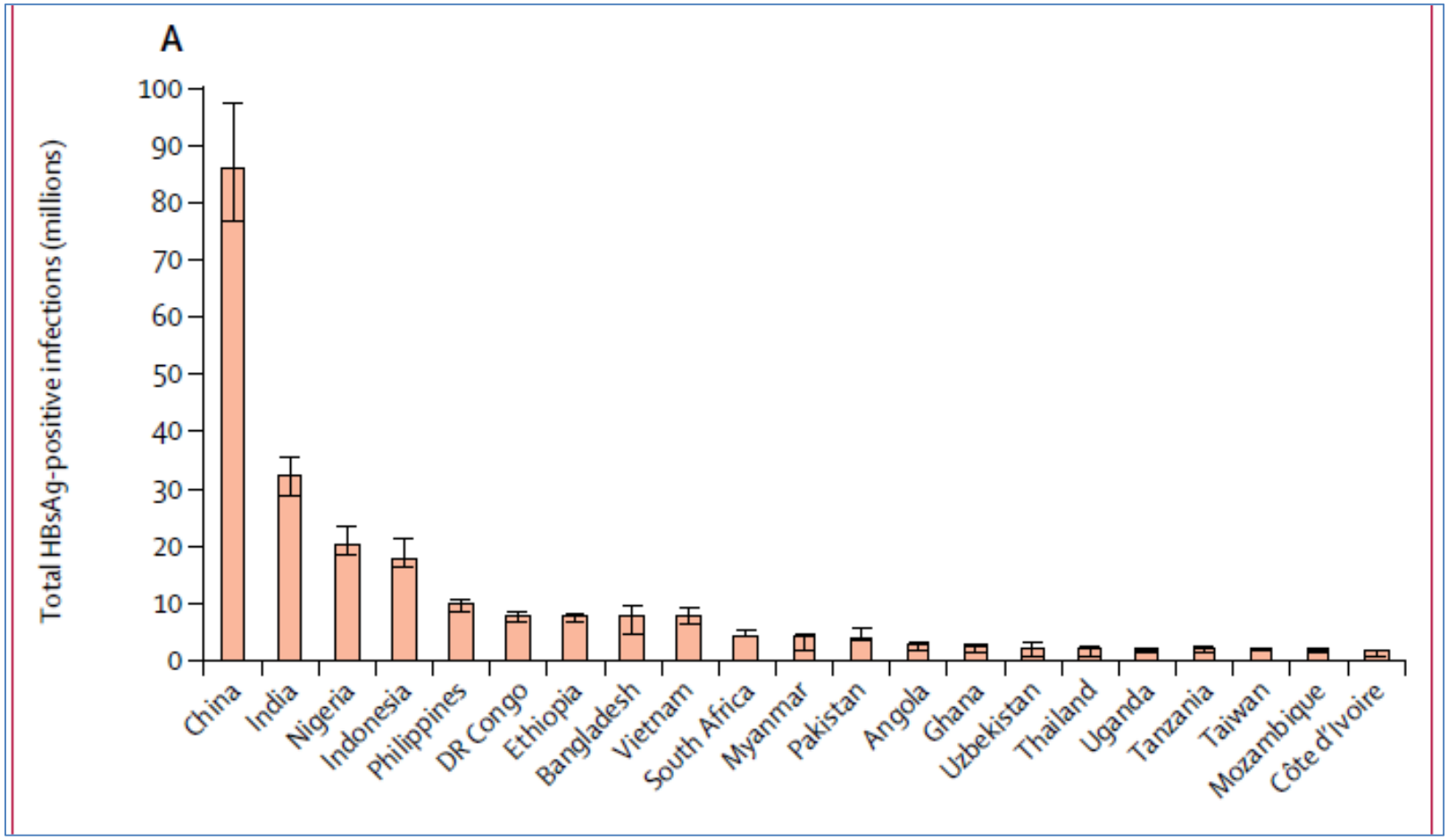

Lancet Gastroenterol Hep 2018

Global prevalence, treatment, and prevention of hepatitis B virus infection in 2016: a modelling study

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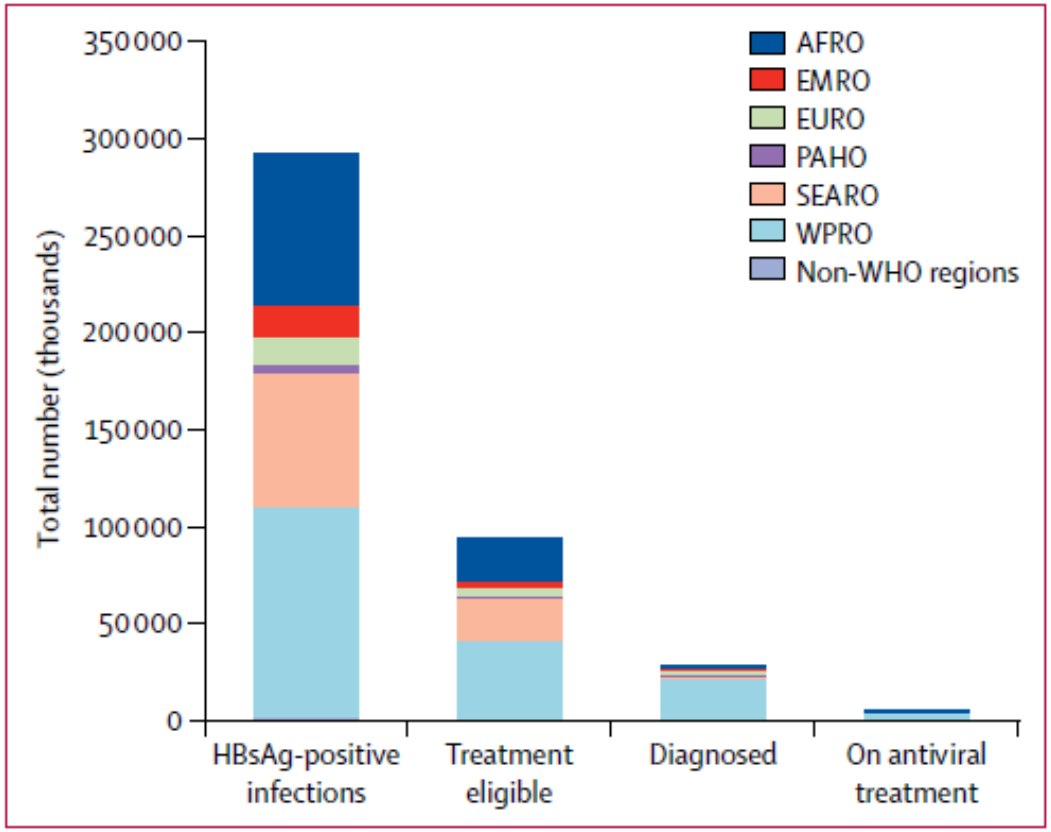
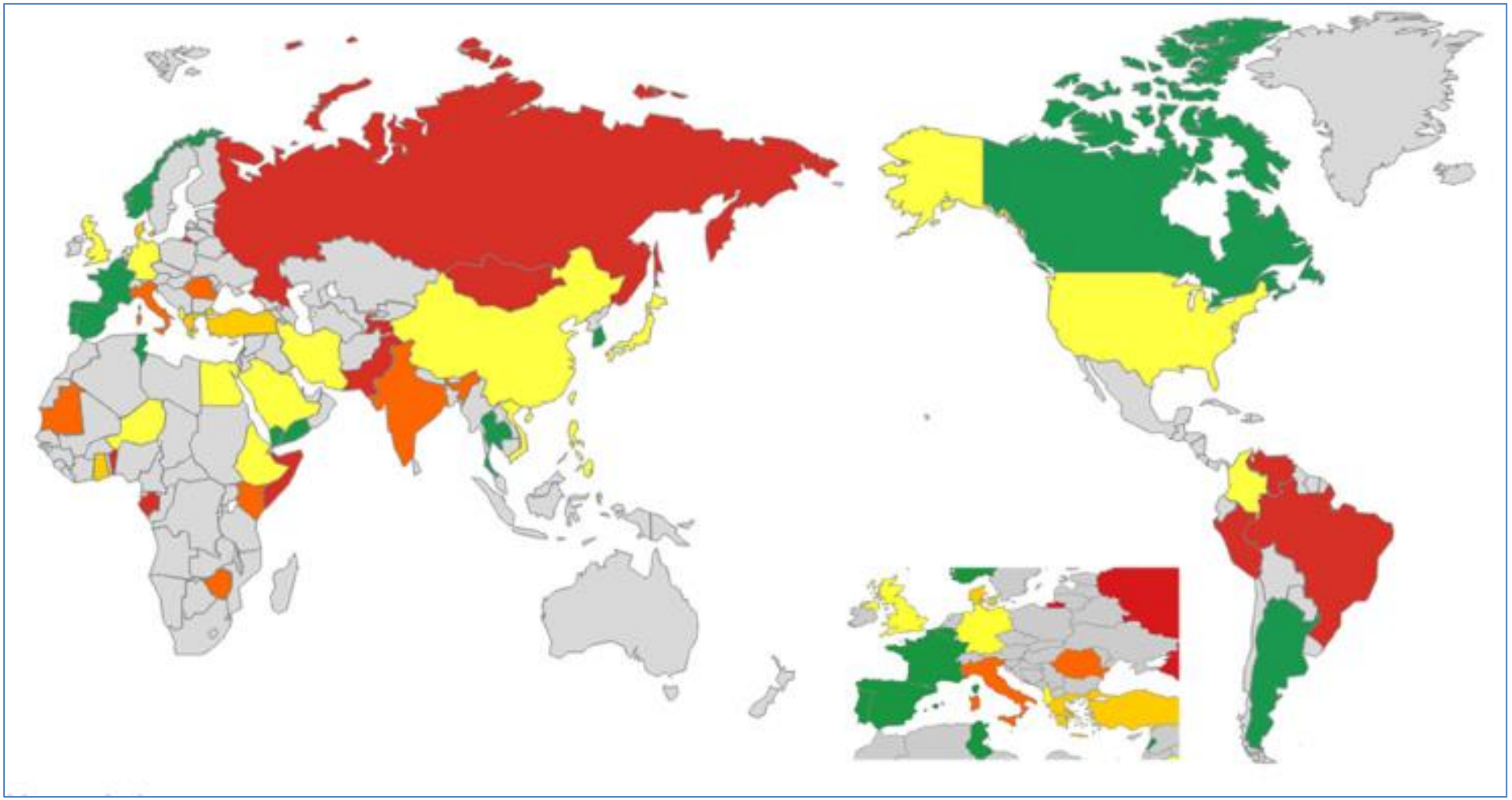
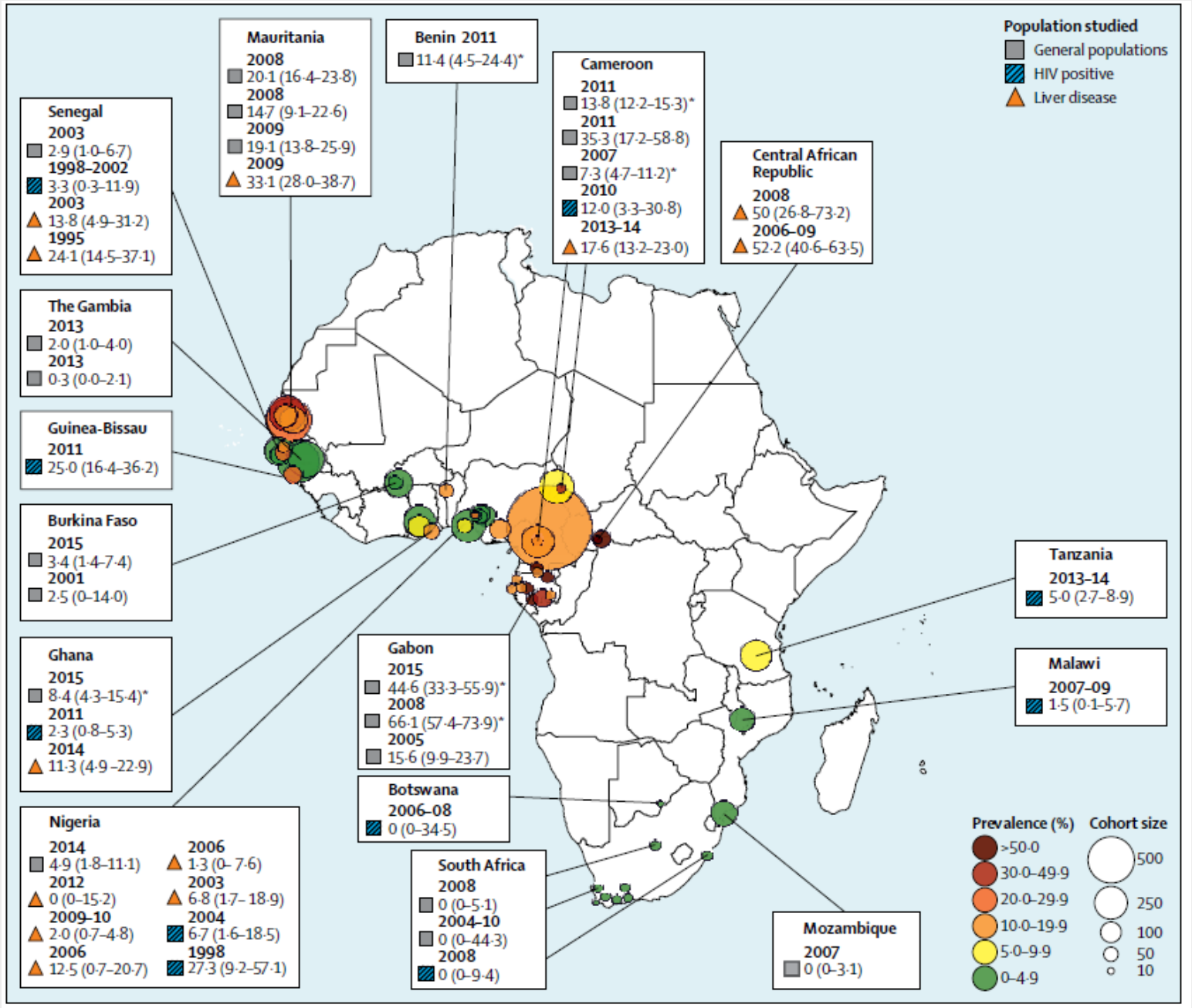


Figure 2: **Global and regional hepatitis B virus cascade of care in 2016**
AFRO=Regional Office for Africa. EMRO=Eastern Mediterranean Regional Office. EURO=Regional Office for Europe. PAHO=Pan American Health Organization. SEARO=South-East Asia Regional Office. WPRO=Western Pacific Regional Office.

Lancet Gastroenterol Hep 2018

HDV infection





Stockdale , Lancet Glob Health, 2017

Items

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- **Impact of migrations**
- HBV and HDV infection in migrants population
  - Worldwide
  - Italy
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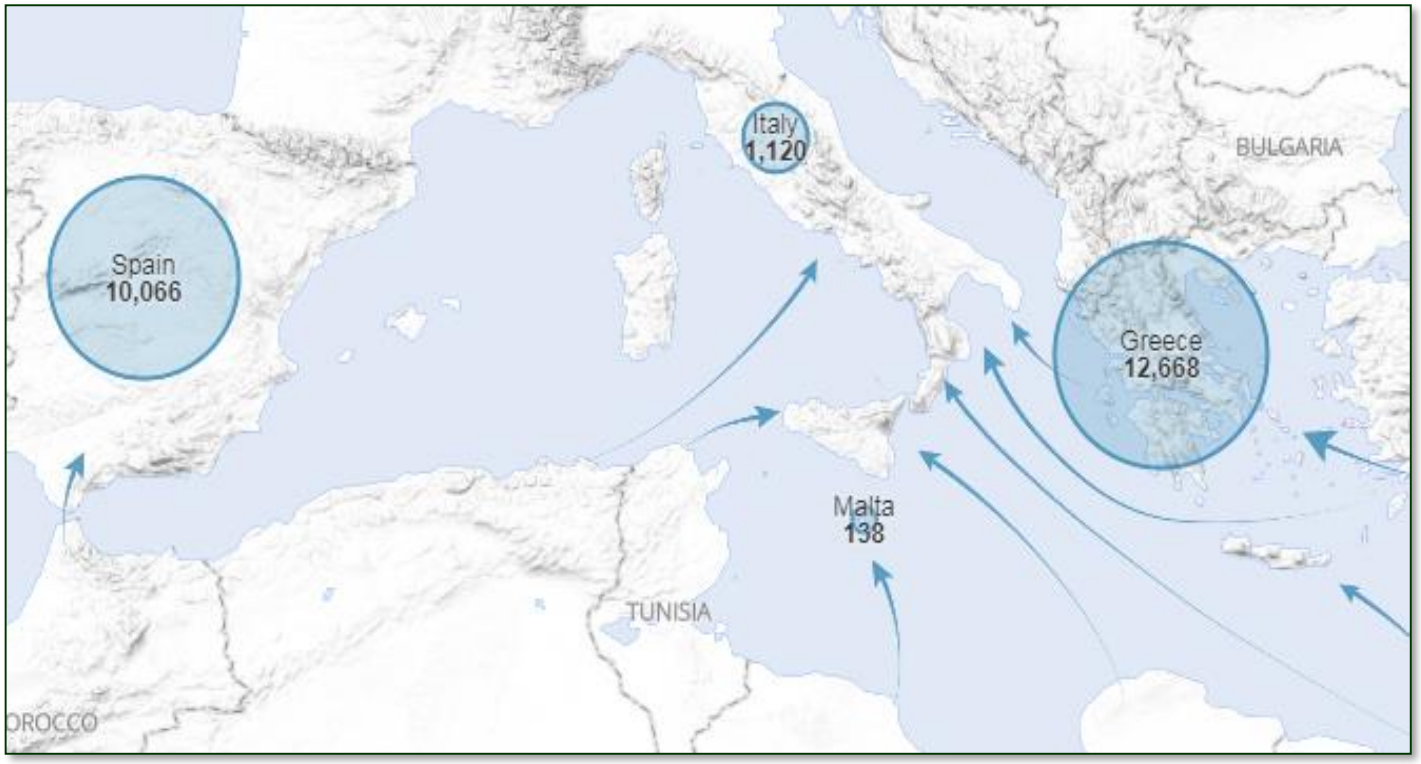
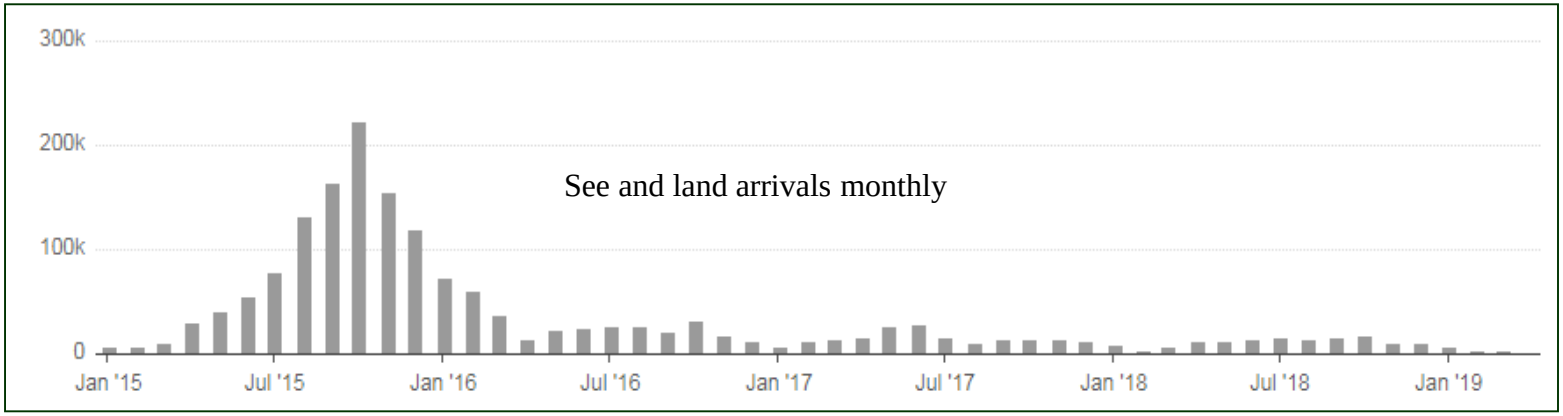
FENOMENO MIGRATORIO





See and land arrivals monthly

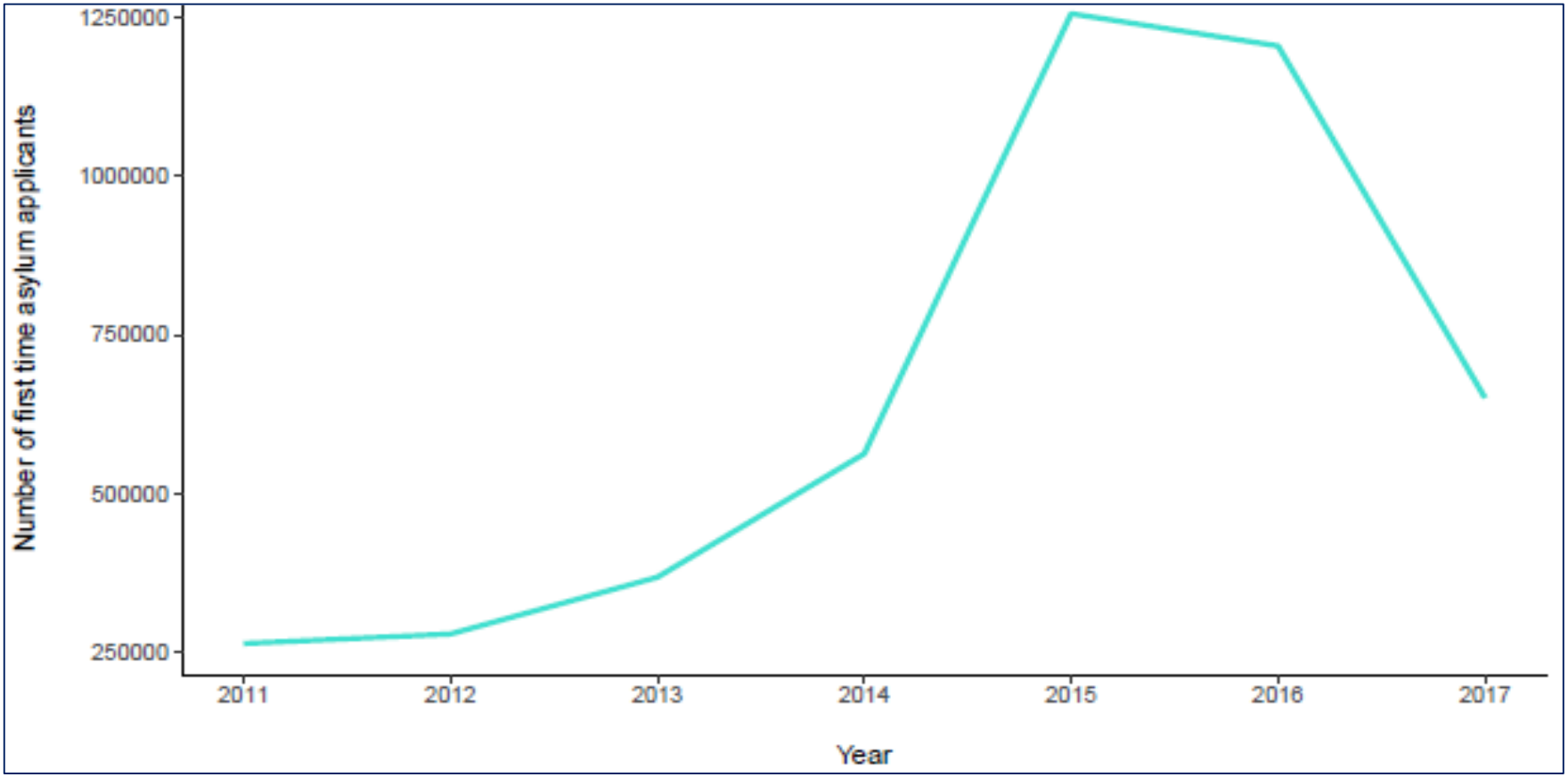
Last updated 20th May 2019

https://data2.unhcr.org/en/situations/mediterranean

Mass migration to Europe: an opportunity for elimination of hepatitis B virus?

Marijn Thijssen, Philippe Lemey, Samad Amini-Bavil-Olyaee, Simon Dellicour, Seyed Moayed Alavian, Frank Tacke, Chris Verslype, Frederik Nevens, Mahmoud Reza Pourkarim

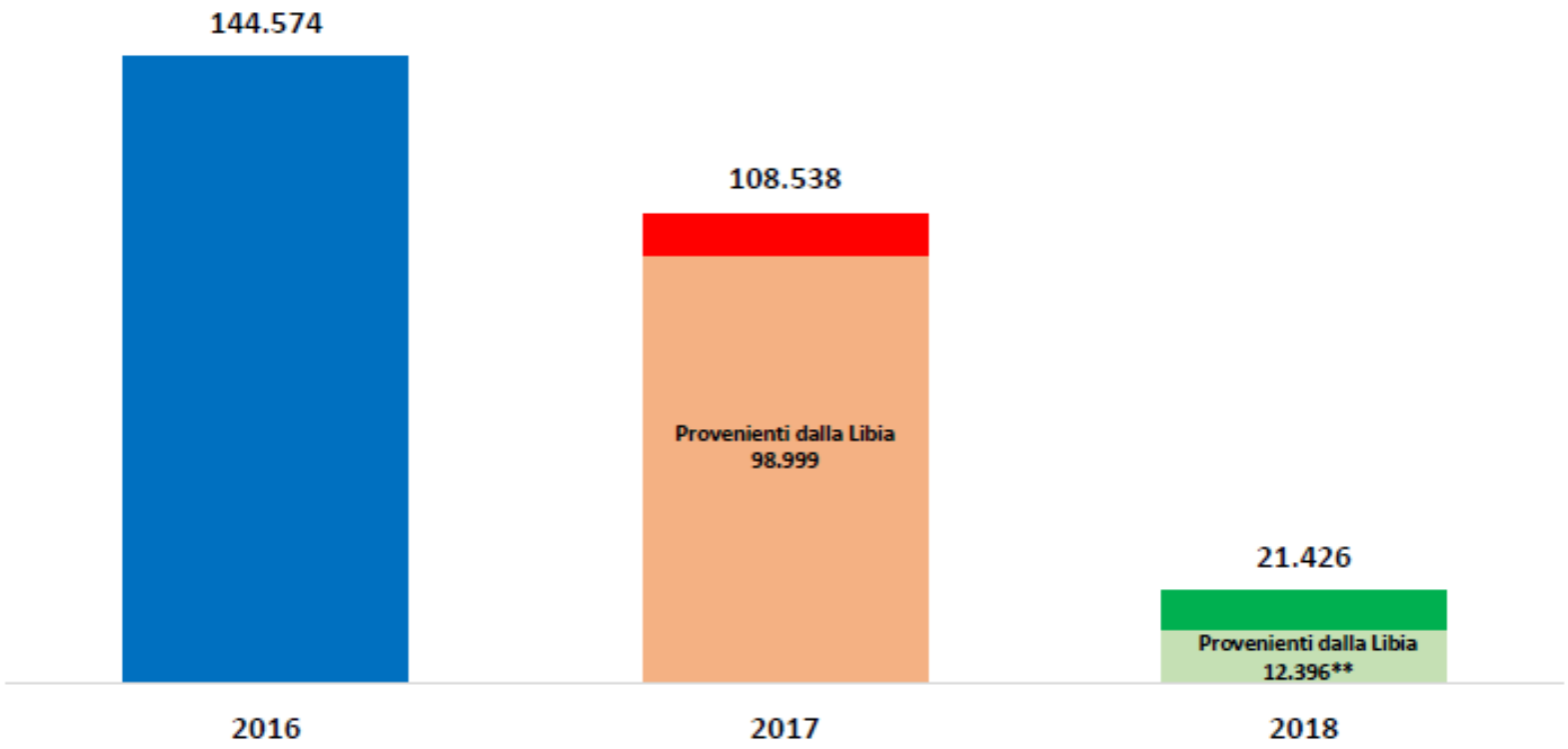
Total number of first-time asylum seekers arriving in Europe between 2011 and 2017



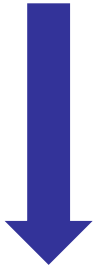
Thiyssen M; Lancet Gastroent hep 2019

FENOMENO MIGRATORIO

Il grafico illustra la situazione relativa al numero dei migranti sbarcati a decorrere dal 1 gennaio 2018 fino al 12 ottobre 2018* comparati con i dati riferiti allo stesso periodo degli anni 2016 (-85,18%) e 2017 (-80,26%)



Impact of migration in the devolped countries



on epidemiology

on virological characticts

on clinical presentation

Supplementary table 2: Average prevalence data on HBV carriers in Europe in 2011-2017 and the estimated impact of immigration on the average baseline chronic HBV carrier population in destination countries

Country	Prevalence	HBV Carriers Country	HBV Carriers Immigrants	Total HBV carriers	% HBV carrier increase
Austria	0,55	47127	11563	58690	24,5
Belgium	0,7	78535	8046	86581	10,2
Bulgaria	4,25	306916	3591	310508	1,2
Cyprus	0,9	7693	608	8301	7,9
Czech Republic	0,7	73738	181	73919	0,2
Denmark [a]	0,55	31099	3182	34281	10,2
Estonia	0,58	7648	35	7683	0,5
Finland [a]	0,2	10909	2081	12990	19,1
France	0,68	435239	17631	452869	4,1
Germany	0,6	487974	81504	569478	16,7
Greece	2,33	254157	5852	260009	2,3
Hungary	1,08	106601	15594	122195	14,6
Iceland [a]	0,55	1804	90	1894	5,0
Ireland	0,1	4654	499	5153	10,7
Italy	1,89	1139102	31881	1170983	2,8
Latvia	1,55	27775	89	27864	0,3
Liechtenstein	0,55	204	13	218	6,5
Lithuania	2,03	59528	123	59651	0,2
Luxembourg	0,55	3059	442	3500	14,4
Malta	0,55	2354	1000	3354	42,5
Netherlands	0,1	16881	7257	24138	43,0
Norway	0,55	28186	5854	34040	20,8
Poland	1,44	547422	1908	549330	0,3
Portugal	1,35	140639	242	140881	0,2
Romania	5,49	1092128	456	1092584	0,0
Slovakia	0,7	37928	132	38060	0,3
Slovenia	3,29	67804	173	67977	0,3
Spain	0,66	307442	2046	309488	0,7
Sweden [a]	0,2	19424	22665	42089	116,7
Switzerland	0,2	16360	11250	27610	68,8
UK	0,54	348866	9960	358826	2,9

[a] Countries that do not have an HBV infant vaccination program

Thiyssen M; Lancet Gastroent hep 2018

Mass migration to Europe: an opportunity for elimination of hepatitis B virus?

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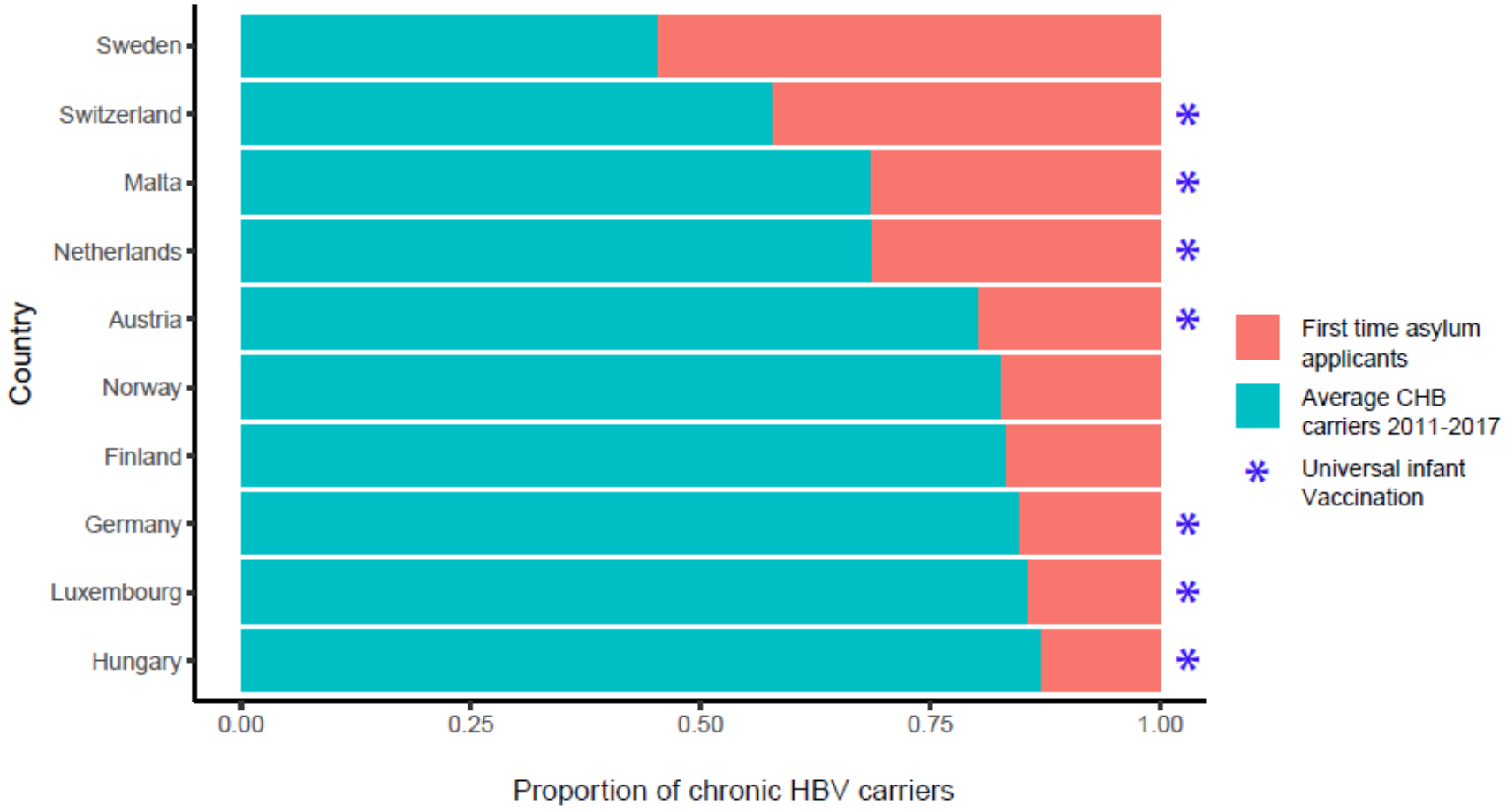
Proportion of chronic HBV carriers in European destination



Thiyssen M; Lancet Gastroent hep 2018

Hepatitis B and immigrants: a SIMIT multicenter cross-sectional study

Table 1 Characteristics of the 3,760 HBsAg-positive patients enrolled in the Società Italiana di Malattie Infettive e Tropicali (SIMIT) cohort: immigrants versus Italians

	Immigrants	Italians	*p* value
Number of cases, *n* (%)	932 (24.8)	2,828 (75.2)	
Distribution in Italian centers, *n* (%)			<0.001
Northern Italy	336 (36.1)	1,222 (43.2)	
Central Italy	521 (55.9)	603 (21.3)	
Southern Italy	75 (8.0)	1,003 (35.5)	
Region of origin, *n* (%)			
Eastern Europe	330 (35.4)	–	
Asia	346 (37.1)	–	
Sub-Saharan Africa	163 (17.5)	–	
North Africa	51 (5.5)	–	
Other[a]	42 (4.5)	–	
Gender			
Females, *n* (%)	536 (57.5)	876 (31.0)	<0.001
Age at enrollment, median (range)	34 (18–77)	52 (18–93)	<0.001
First observation for HBV			
Incident cases, *n* (%)	319 (34.2)	375 (13.3)	<0.001
Alcohol intake, *n* (%)[b]	315 (41.4)	1,213 (60.0)	<0.001
Co-infections, *n*/*n* tested (%)			
HDV	39/849 (4.6 %)	190/2,501 (7.6 %)	0.003
HBeAg-positives[c]			
n/*n* tested (%)	254/925 (27.5 %)	391/2,792 (14.0 %)	<0.001

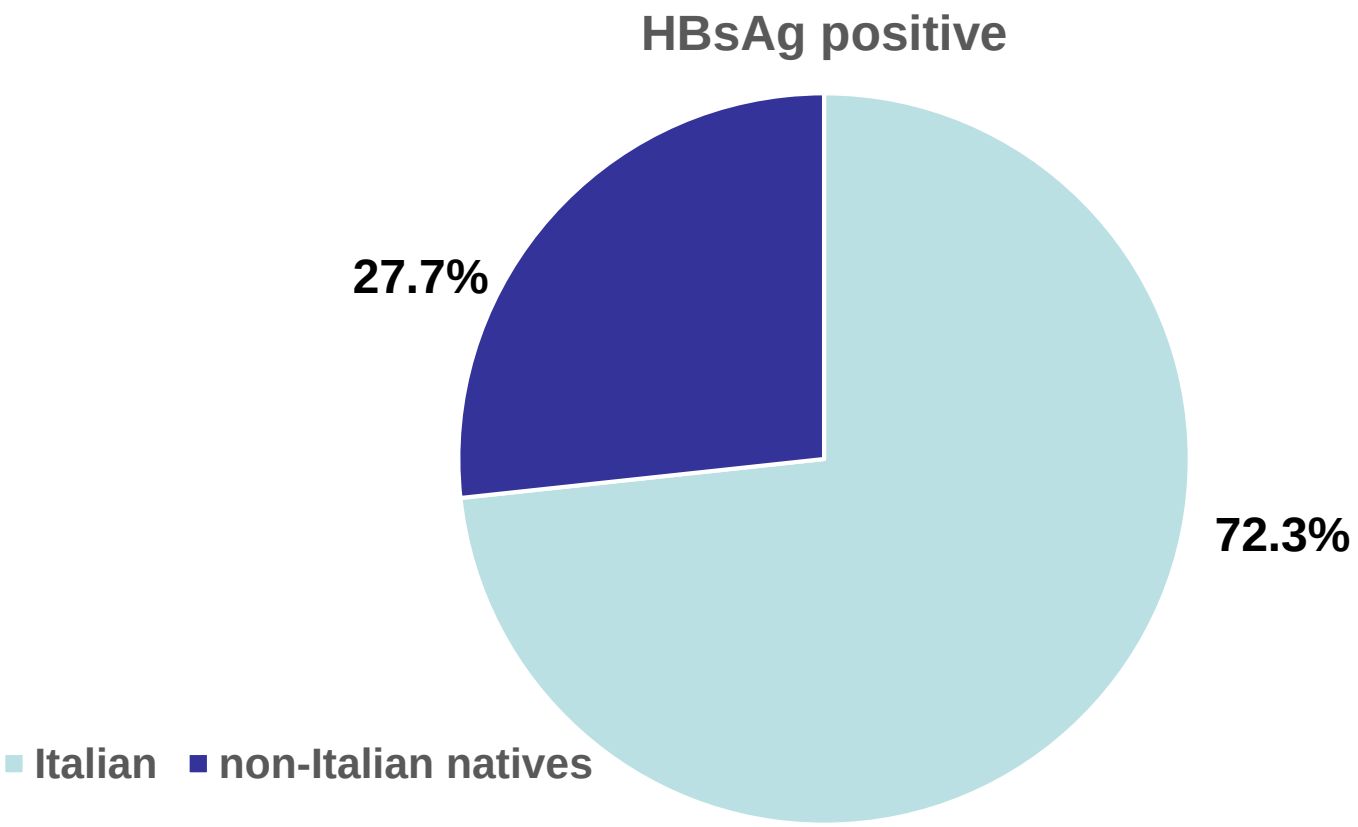
Cross-sectional study on 3,670 HBsAg positive patients observed in 74 Italian centers from February 2008 to July 31 2008

Fasano M, Infection 2013

The present profile of chronic hepatitis B virus infection highlights future challenges
An analysis of the Multicenter Italian MASTER-B cohort

Giuseppina Brancaccio[a,o,*], Alessandra Nardi[b], Salvatore Madonia[c], Massimo Fasano[d,e], Gabriella Verucchi[f], Marco Massari[g], Sergio Maimone[h], Carlo Contini[i], Fabio Levantesi[j], Arianna Alfieri[k], Caius Gavrila[l], Pietro Andreone[m], Michele Milella[n], Giovanni B. Gaeta[o]

A cross-sectional multicenter prospective study enrolled 2,877 consecutive HBsAg positive patients in 73 Italian centers in the period 2012–2015



Brancaccio G, Dig Liv Dis 2019

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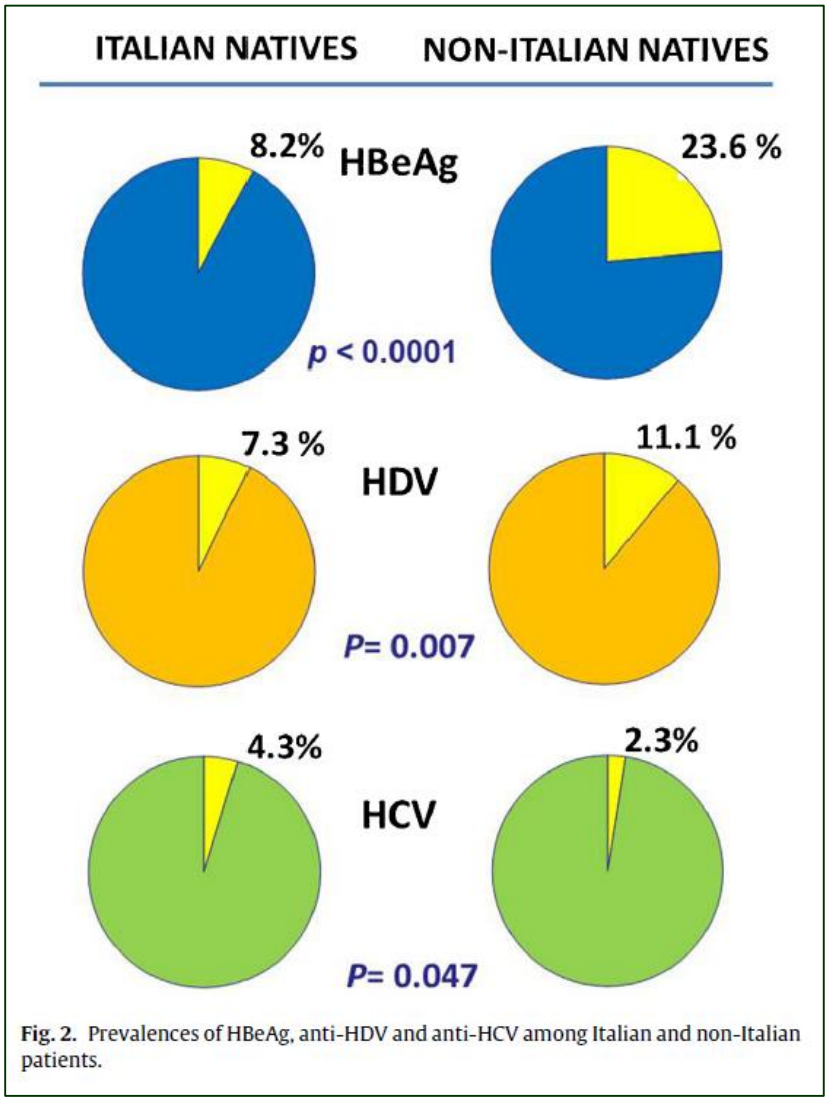

Fig. 2. Prevalences of HBeAg, anti-HDV and anti-HCV among Italian and non-Italian patients.

Brancaccio G, Dig Liv Dis 2019

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A cross-sectional multicenter prospective study enrolled 2,877 consecutive HBsAg positive patients in 73 Italian centers in the period 2012–2015

Table 2
Characteristics of Italian native patients vs. non-Italian natives.

Variables	Italian natives (n = 2,106) Median or n	Non-Italian Natives (n = 767) (Q1, Q3) or%	p value
Age (years)	54.5 (44.7, 63.0)	35.2 (28.6, 43.6)	<0.0001
BMI (Kg/m^2)	25.3 (23.1, 27.7)	23.8 (21.9, 26.2)	<0.0001
Gender (male)	1526 (72.46%)	444 (57.89%)	<0.0001
Disease stage			<0.0001
Chronic infection	373 (17.93%)	181 (23.88%)	<0.0001
Chronic hepatitis	1197 (57.55%)	458 (60.42%)	
Cirrhosis	510 (24.52%)	119 (15.70%)	
Liver biopsy	944 (44.93%)	261 (34.03%)	<0.0001

Brancaccio G, Dig Liv Dis 2019

A cross-sectional multicenter prospective study enrolled 854 consecutive HBsAg positive patients in 9 Italian centers in the first 6 months in 2019

Year of observation	2001 Sagnelli CID 2008 (N=1336)	2006 Stroffolini JMV 2009 (N=1386)	2014 Stroffolini JMV 2017 (N=513)	2019 Present (N=894)	P value*
SEX RATIO	2.5	2.8	1.8	1.6	< 0.05
OUT-PATIENTS	80.4%	92.5%	88.5%	95.5%	< 0.05
INCIDENCE CASES	14.6%	9.5%	N.A.°	7.2%	< 0.05
BORN ABROAD	4.5%	7.4%	7.4%	19.0%	< 0.01
> 4 ALCOHOLIC DRINKS/DAY	N.A.***	7.0%	16.4%	1.0%	< 0.01
UNDER THERAPY	N.A.***	60.5%	N.A.***	89.3%	< 0.01**

Stroffolini T submitted 2020

Items

- HBV and HDV epidemiology
- Impact of migrations
- **HBV and HDV infection in migrants population**
  - **Worldwide**
  - **Italy**
- Strategies of interventions

Seroprevalence of Chronic Hepatitis B Virus Infection and Prior Immunity in Immigrants and Refugees: A Systematic Review and Meta-Analysis

Carmine Rossi[1,2*], Ian Shrier[1,2], Lee Marshall[1], Sonya Cnossen[1], Kevin Schwartzman[2,3], Marina B. Klein[2,4], Guido Schwarzer[5], Chris Greenaway[1,2,6]

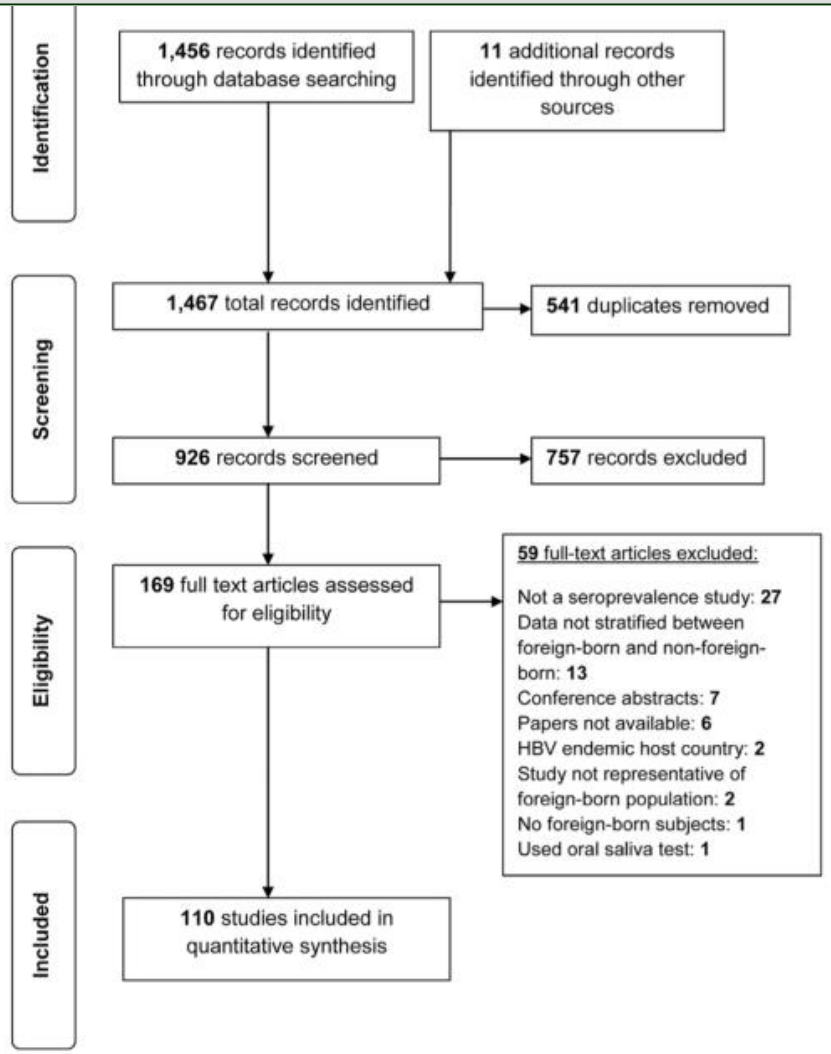

Figure 1. Summary of literature search and study selection.
doi:10.1371/journal.pone.0044611.g001

The overall pooled seroprevalence of infection in all international migrants, among the 110 studies, was 7.2% (95% CI: 6.3%– 8.2%).

Rossi PLOS 2012

Seroprevalence of Chronic Hepatitis B Virus Infection and Prior Immunity in Immigrants and Refugees: A Systematic Review and Meta-Analysis

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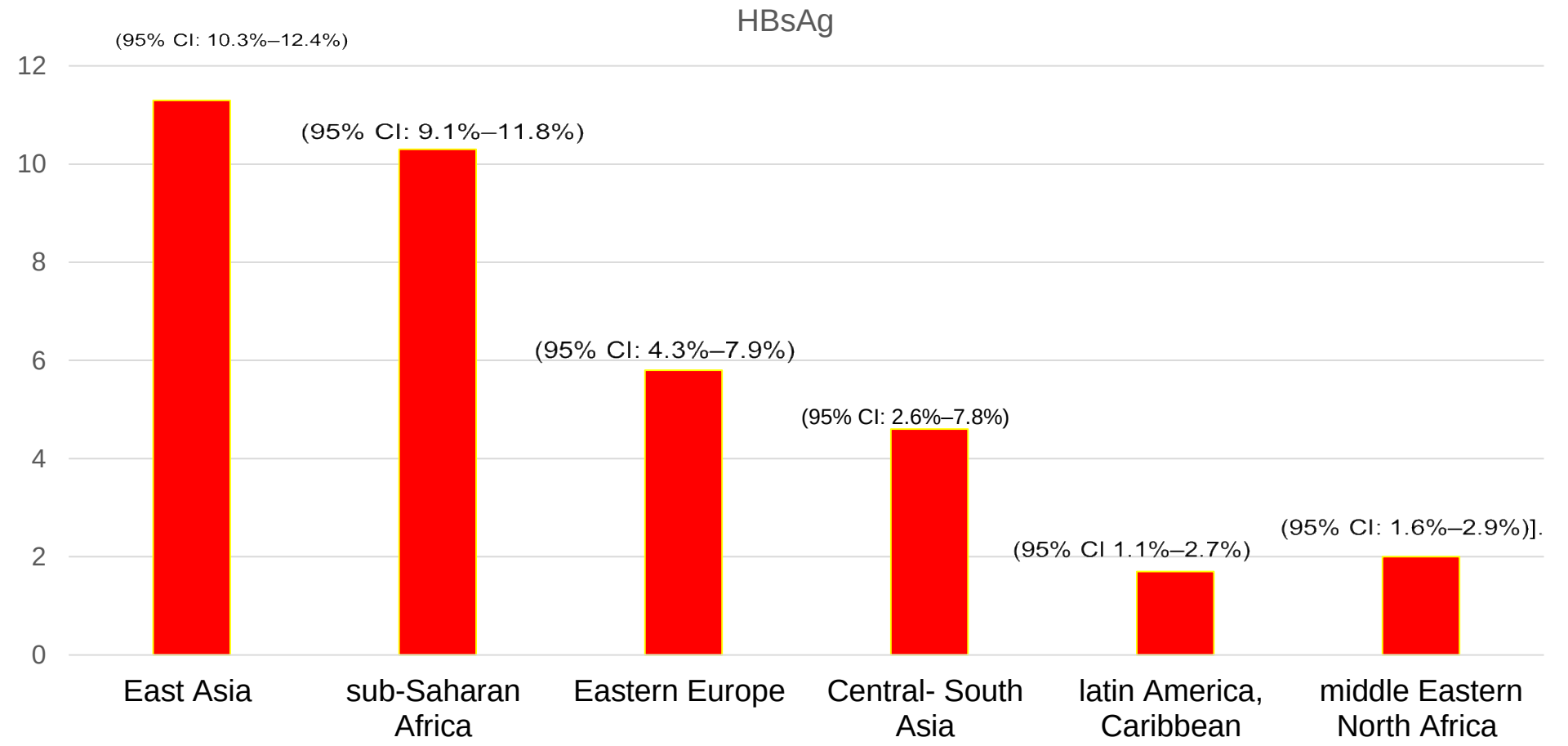


Rossi PLOS 2012

Prevalence of Hepatitis B, C, HIV and syphilis markers among refugees in Bari, Italy

Silvio Tafuri[1], Rosa Prato[2*], Domenico Martinelli[2], Livio Melpignano[1], Maria De Palma[1], Michele Quarto[1], Cinzia Germinario[1]

Table 1 Study population per sex and continent of origin (No. = 529)

	Female		Male		Total
Continent	No.	%	No.	%	No.
Africa	87	17	423	83	510
Asia	–	–	19	100.0	19
Total	87	16.4	442	83.6	529

Table 2 Distribution of hepatitis B and hepatitis C markers per sex and continent of origin (No. = 529)

	Male	Female	*p*	Africa	Asia	*p*
No.	442 (83.6%)	87 (16.4%)		510 (96.4%)	19 (3.6%)	
HBsAg(+)	43 (9.7%)	1 (1.1%)	*0.008*	44 (8.6%)	0	*>.05*
Anti-HBc (+)	214 (48.4%)	27 (31%)	*0.002*	234 (45.9%)	7 (36.8%)	*>.05*
HBsAg (-), anti-HBc (-)	228 (51.6%)	60 (68.9%)	*0.002*	276 (54.1%)	12 (63.2%)	*>.05*
Anti-HCV(+)	23 (5.2%)	1 (1.1%)	*>0.5*	22 (4.3%)	2 (10.5%)	*>.05*
Any infection	63 (14.3%)	2 (2.3%)	*0.0001*	54 (10.5%)	2 (12.4%)	*>.05*

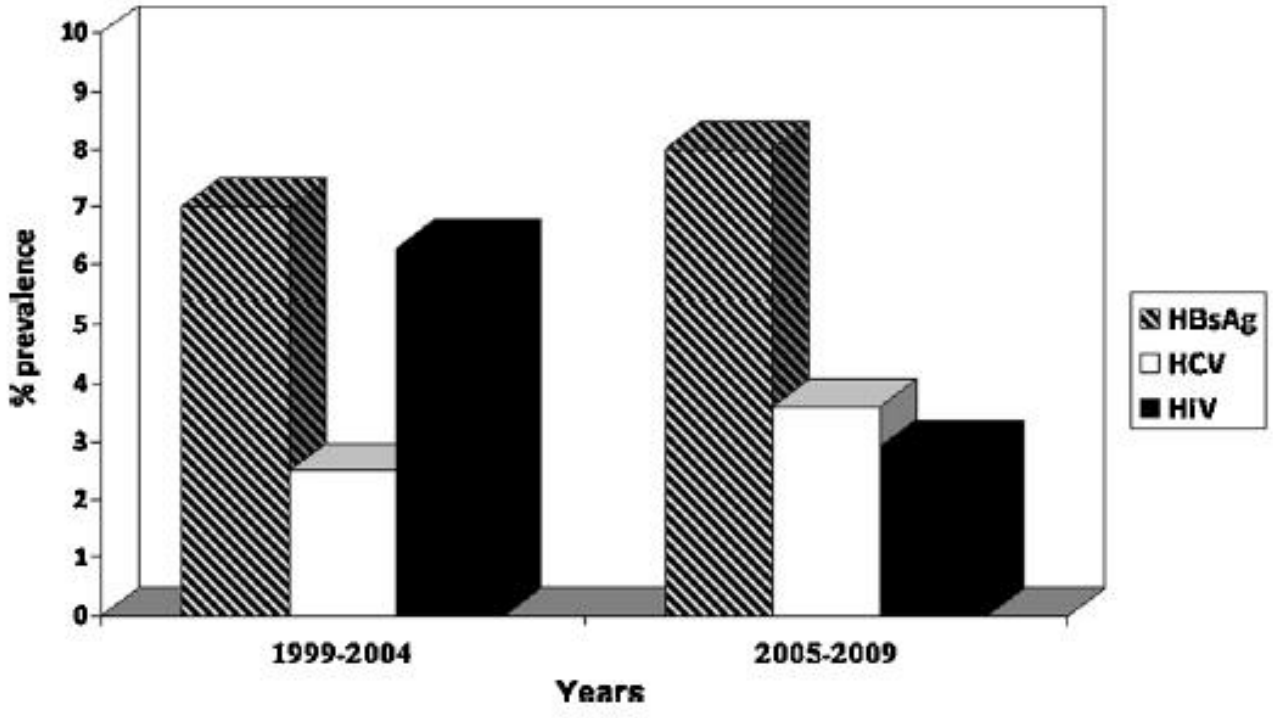
8 (1,4%) HIV positive

BMC Infect Dis 2010

Active recruitment strategy in disadvantaged immigrant populations improves the identification of human immunodeficiency but not of hepatitis B or C virus infections☆

Gianfranca Stornaiuolo[a], Vincenzo Cuniato[b], Gianluca Cuomo[a], Espedito Nocera[b], Giuseppina Brancaccio[a], Maddalena De Rosa[b], Agostina Pontarelli[a], Giovanni Grasso[b], Gaetano Danzi[c], Alessandra Grossi[d], Renato F. Natale[b], Giovanni B. Gaeta[a,*]

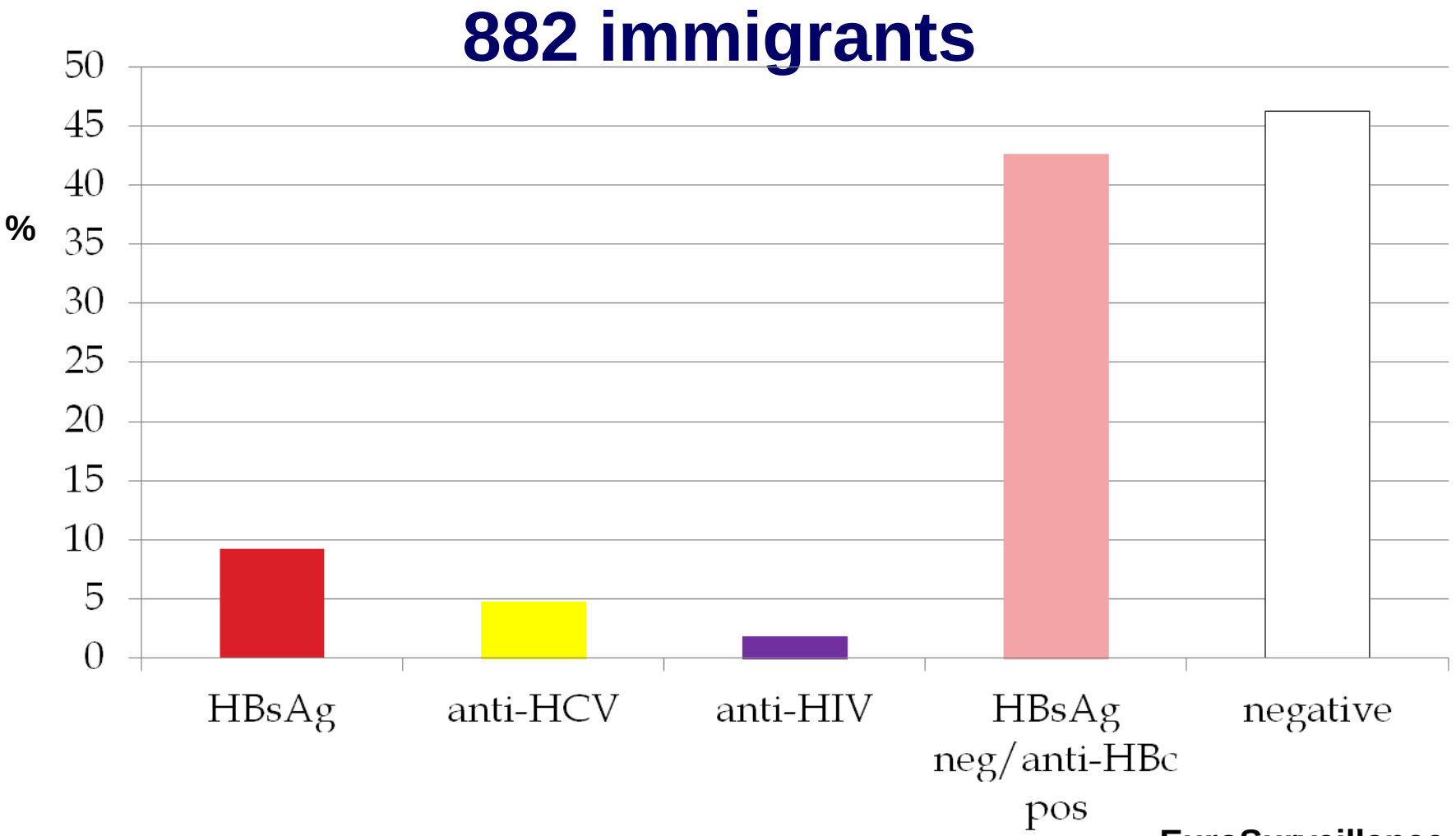
Between 1999 and 2009 we prospectively recruited 2,681 immigrants in Castelvolturno, Caserta). During the first part of this period (1999–2004), active recruitment was performed using a mobile unit. In the second 5-year period (2005–2009), only outpatients coming to the medical centre were recruited.



DLD 2014

Hepatitis B virus, hepatitis C virus and human immunodeficiency virus infection in undocumented migrants and refugees in southern Italy, January 2012 to June 2013

N Coppola [1], L Alessio [1,2], L Gualdieri [3], M Pisaturo [4,5], C Sagnelli [2,6], N Caprio [1,7], R Maffei [1,3], M Starace [1], IF Angelillo [8], G Pasquale [1], E Sagnelli [1,5]



EuroSurveillance 2015

HepatMon. In Press(In Press):e11260. doi: 10.5812/hepatmon.11260.
Published online 2017 May 30. Research Article

Hepatitis B Virus Genotypes, Epidemiological Characteristics, and Clinical Presentation of HBV Chronic Infection in Immigrant Populations Living in Southern Italy

Evangelista Sagnelli,[1,*] Loredana Alessio,[2] Caterina Sagnelli,[3,1] Luciano Gualdieri,[4] Mariantonietta Pisaturo,[5] Carmine Minichini,[1] Giovanni Di Caprio,[1,2] Mario Starace,[1] Lorenzo Onorato,[1,2] Margherita

109 HBV DNA positive patients

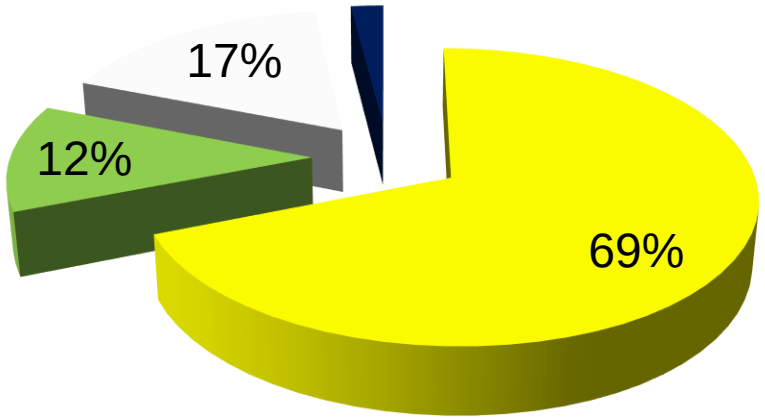
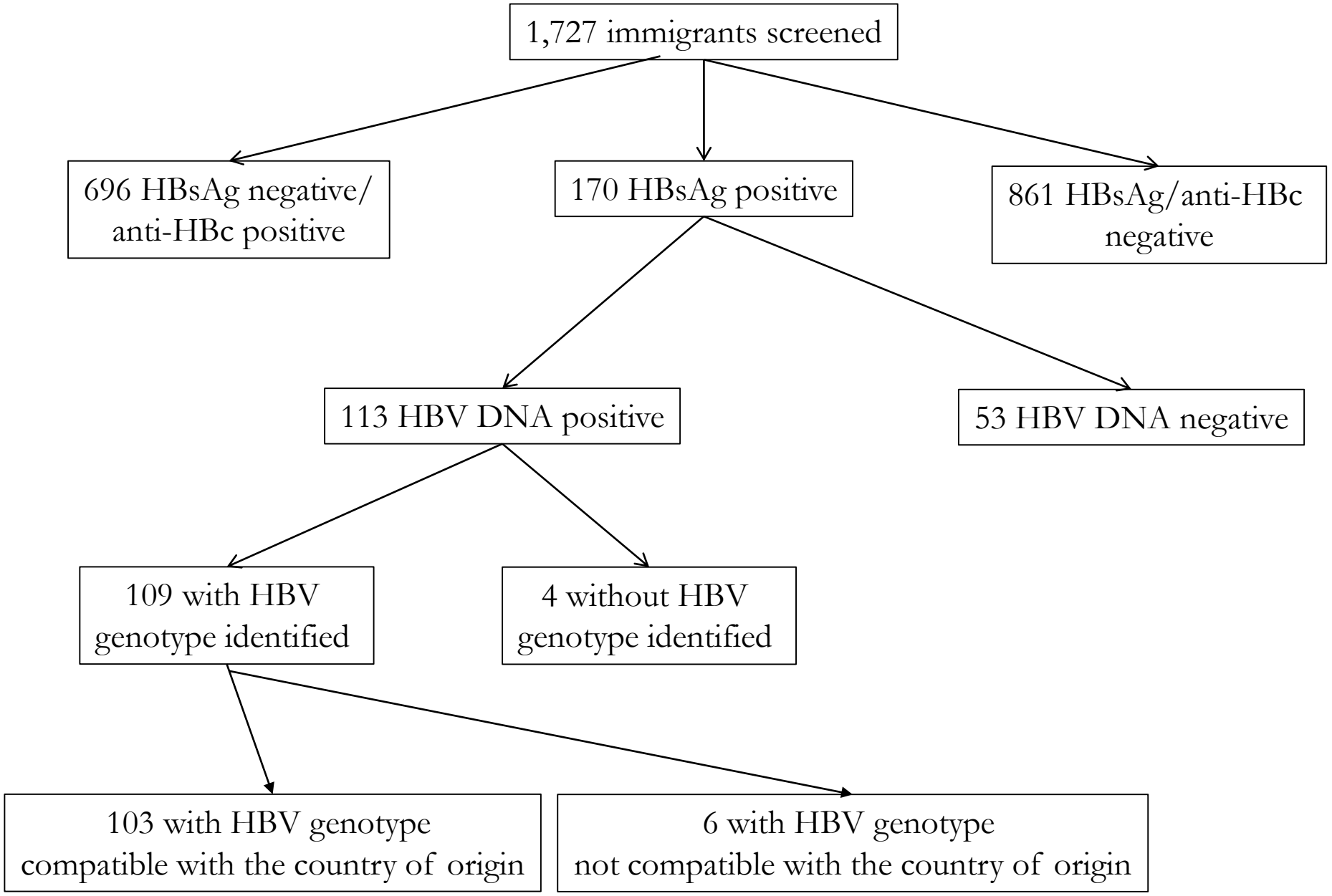


Table 3. Clinical and Virological Characteristics of the Studied Immigrants with HBsAg-Positive, According to Hepatitis B Virus Genotypes

HBV Genotype	A	C	D, D1, D2	E
Number of patients	18	3	13	75
HBV DNA IU/mL (M±SD)	5.8E7 ± 2.4E8	2.7E5 ± 4.7E5	2.0E4 ± 3.9E4	1.1E8 ± 8.9E8
HBV DNA < 2000 IU/mL	9 (50)	1 (33.3)	7 (53.8)	44 (58.7)
HBV DNA ≥ 2000 IU/mL	9 (50)	2 (66.6)	6 (46.1)	31 (41.3)
HBeAg-positive, No. (%)	9 (50)	1 (33.3)	0 (0)	16 (21.3)
Anti-delta-positive, No. (%)	0	0	0	0
AST, highest NV 40 IU/L, mean ± SD	32.1 ± 22.1	110.9 ±126.1	37.3 ± 22.7	52.7 ± 63.5
ALT, highest NV 40 IU/L, man ± SD	39.1 ± 25.7	153.0 ± 180.0	15.0 ± 45.0	57.6 ± 80.8
With inactive chronic liver disease, No. (%)	10 (55.5)	1 (33.3)	8 (61.5)	52 (69.3)
With chronic hepatitis, No. (%)	7 (38.9)	1 (33.3)	5 (38.5)	17 (22.7)
With cirrhosis, No. (%)	1 (5.5)[a]	1 (33.3)[b]	0	[c]6 (8.0)

Hepatitis Monthly 2017

HBV molecular epidemiology and clinical condition in immigrants living in Italy



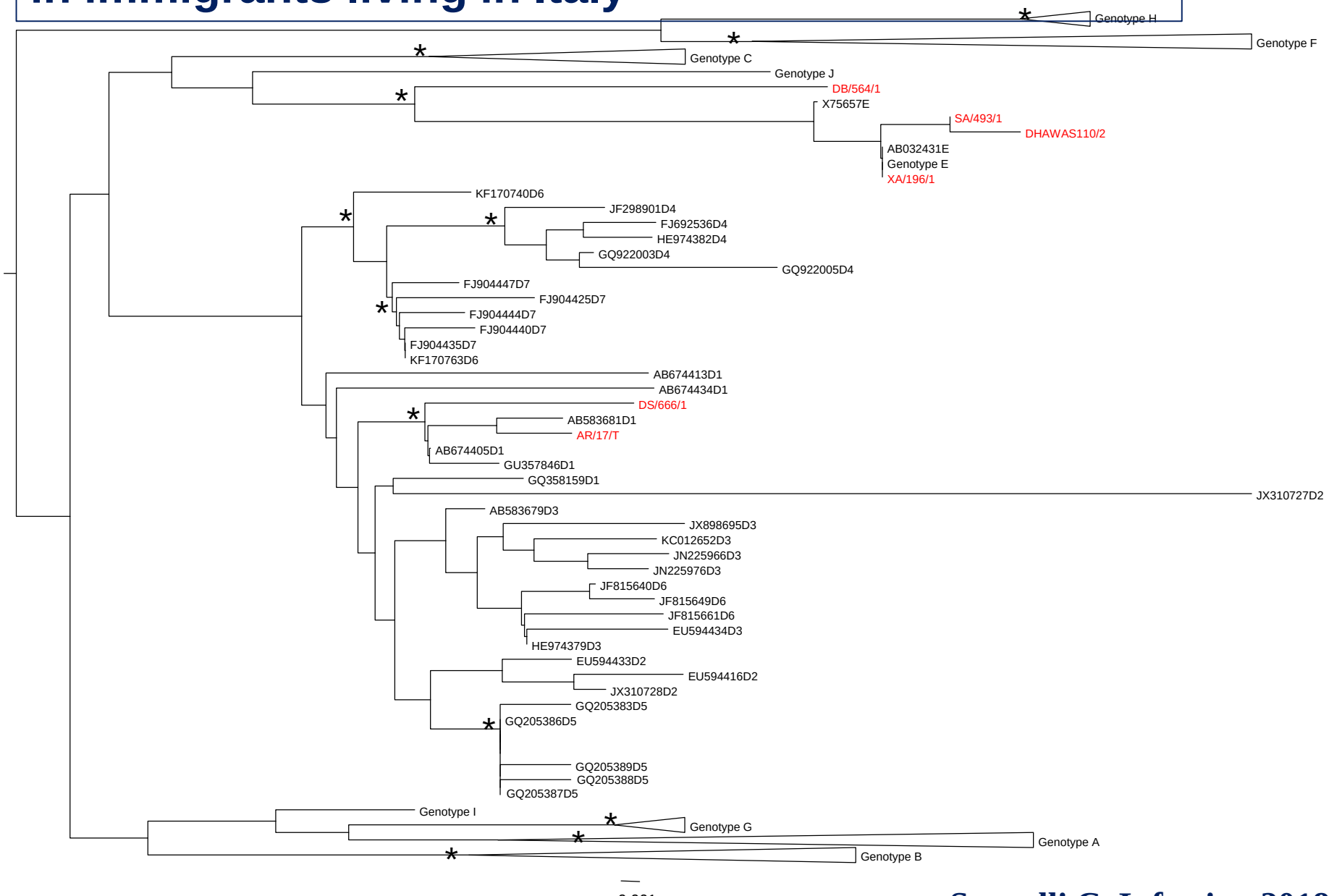
Sagnelli C, Infection 2018

HBV molecular epidemiology and clinical condition in immigrants living in Italy

Patient	Gender	Age, years	Country of origin	In Italy from, months	HBV Genotype
SA/493/1	M	31	Romania	60	E
DB/564/1	M	27	Russia	58	E
DHAWAS110/2	M	27	Sri Lanka	48	E
DS/666/1	M	33	Senegal	24	D
XA/196/1	M	36	Albania	9	E
AR/17/T	M	22	Burkina Faso	14	D

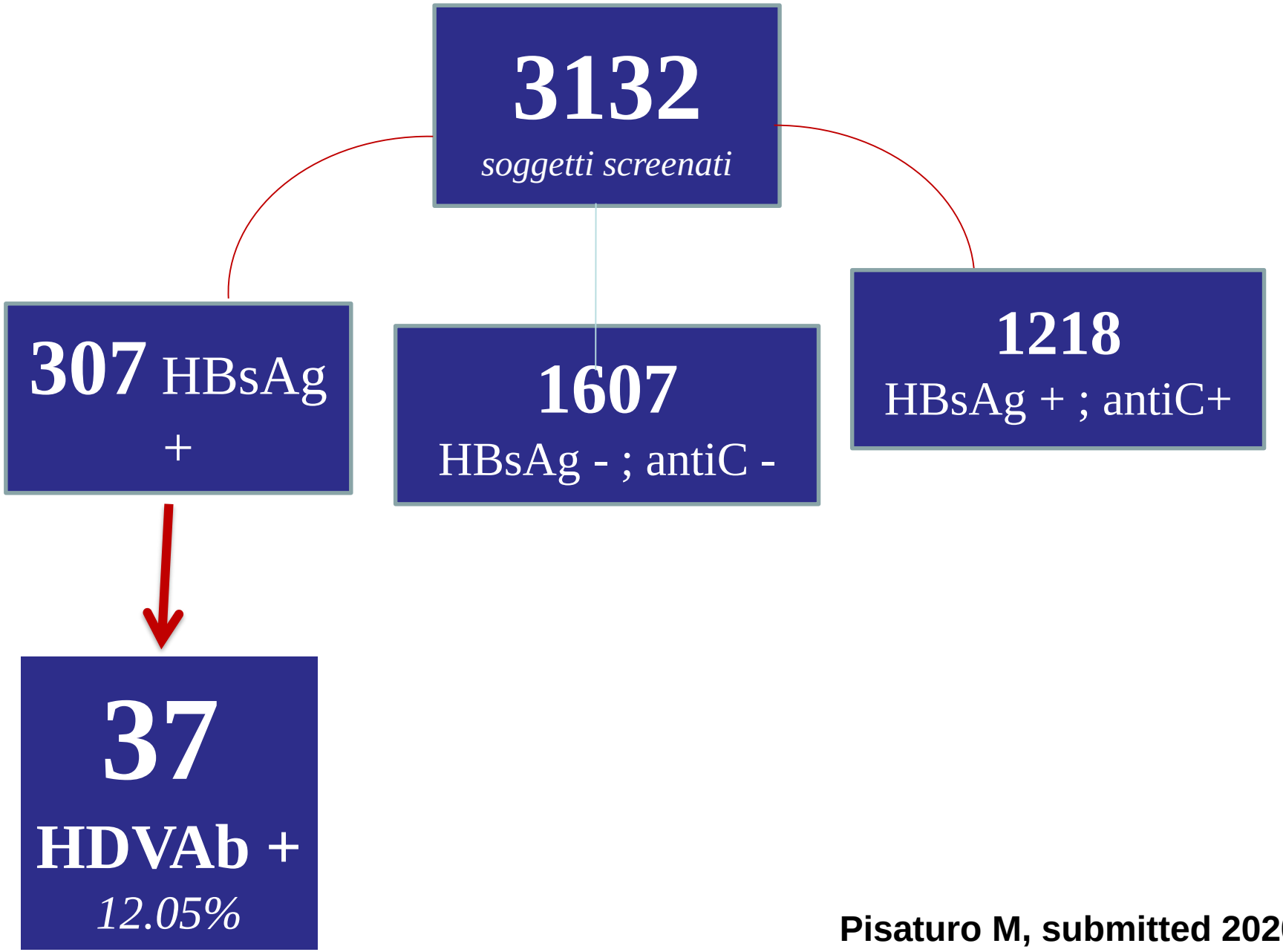
Sagnelli C, Infection 2018

HBV molecular epidemiology and clinical condition in immigrants living in Italy



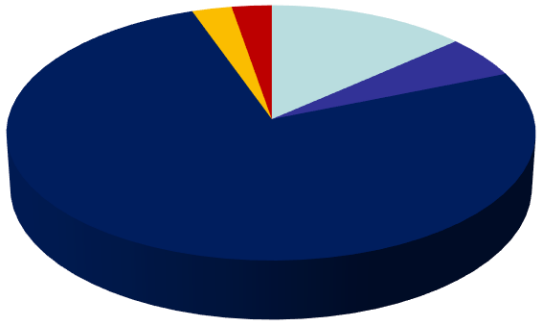
Sagnelli C, Infection 2018

HDV infection in HBsAg-positive immigrants



Pisaturo M, submitted 2020

HDV prealence according countries of origin



AFRICA SUBSAHARIANA	**antiHDV+ 28**
• Burkina Faso	1
• Costa d'Avorio	4
• Gambia	3
• Ghana	3
• Guinea	1
• Mali	2
• Nigeria	3
• Senegal	7
• Sierra Leone	1
• Somalia	1
• Togo	2

EST EUROPA	**antiHDV + 5**
• **Albania**	**1**
• **Bulgaria**	**1**
• **Romania**	**3**

AMERICA	antiHDV+ 1
• Repubblica Domenicana	1

NORD AFRICA	antiHDV+ 2
• Marocco	1
• Sudan	1

ASIA MERIDIONALE	**antiHDV+ 1**
• Bangladesh	1

Pisaturo M, submitted 2020

	Anti-Delta negative	Anti-delta positive	p
N° of patients	270	37	
Age, years, mean ± SD	28 (±9.57)	32 (±9.74)	0.011
Males, n° (%)	249 (92.2)	28 (75.67)	0.0014
Legal status			
Undocumented immigrants	124 (45.92)	21 (56.76)	0.216
Low-income refugees	146 (54.07)	16 (43.24)	
Country of origin, n° (% by row)			
Eastern Europe, 17 cases	12 (70.59)	5 (29.41)	
Northern Africa, 4 cases	2 (50)	2 (50)	
Sub Saharian Africa, 264 cases	236 (89.4)	28 (10.6)	0-05
India-Pakistan area, 16 cases	15 (93.75)	1 (6.25)	
Others, 6 cases	5 (83.3)	1 (16.6)	
In Italy for months, mean ± SD	20 (±41.7)	42 (±42.01)	0.042
Years of schooling, mean ± SD	4.6 (±3.9)	4 (±3.95)	0.40
n° (%) with alcohol intake	31 (11.48)	4 (10.81)	0.9
Declared risk factors, n° (% by column)			
IVDU	/	/	/
Unsafe sexual intercourse	204 (75.55)	32 (86.49)	0.13
Surgery, dental care, abortion	86 (31.85)	14 (37.84)	0.47
Blood transfusion	/	/	/
Other parenteral exposure*	164 (60.74)	26 (70.27)	0.26
Did not declare risk factors	22 (8.14)	1 (2.7)	

Pisaturo M, submitted 2020

Variabili indipendentemente associate alla positività per anti Delta

Variabile	OR	LI intervallo di confidenza 95%	LS intervallo di confidenza 95%	P value
Età	0,99	0,95	1,02	0,47
Sesso (F vs M)	2,71	1,02	7,22	0,046
Mesi in Italia	0,99	0,98	1,002	0,17
Origine				
- Est Europa	9,18	1,16	72,3	0,035
- Nord Africa	4,48	0,43	46,7	0,21

Pisaturo M, submitted 2020

Items

- HBV and HDV epidemiology
- Impact of migrations
- HBV and HDV infection in migrants population
  - Worldwide
  - Italy
- **Strategies of interventions**

NAPOLI

Centro per la Tutela della Salute degli Immigrati, via Egiziaca a Forcella n°34, Napoli

Centro Suore Missionarie della carità,
vico dei Panettieri n°41, Napoli

CASERTA

Centro di Accoglienza “La Tenda di Abramo”, via Paolo Borsellino, Caserta

Centro sociale ex canapificio, viale Ellittico, Caserta

Cognome __/__/__/ Nome__/__/__/ Data di nascita____/_____/_____, CENTRO_____

Data Arruolamento ____/_____/_____, Sesso: F ☐ M ☐

SIERO data ____/_____/_____: CODICE (Iniziali Cognome e nome/data nascita/ N° centro)_____

Immigrato ☐ Irregolare ☐ Clandestino ☐ In Italia da anni: _____

Provenienza geografica : _____ Religione: _____

Residenza temporanea (prov.)

Residenza italiana: Senza fissa dimora ☐ Stabile in appartamento ☐
N° co-inquilini in appartamento:_____N° bagni in appartamento:_____

Durata prevista residenza temporanea:_____

Presenza di familiari o conviventi con infezione nota da HBV: Si ☐ No ☐ Non noto ☐
Se Si, quale familiare?_____

HBV Pos ☐ Neg ☐ Non noto ☐ HCV Pos ☐ Neg ☐ Non noto ☐
HIV Pos ☐ Neg ☐ Non noto ☐ SIFILIDE:TPHA ☐ Non noto ☐

FATTORI DI RISCHIO:
ORIENTAMENTO SESSUALE: Eterosex ☐ Omosex ☐ Transex ☐ Non noto ☐
Partern stabile ☐ Partner occasionale ☐ N° partern negli ultimi 12 mesi_____
Uso di condom: Si, sempre ☐ Raramente ☐ Mai ☐ Non noto ☐

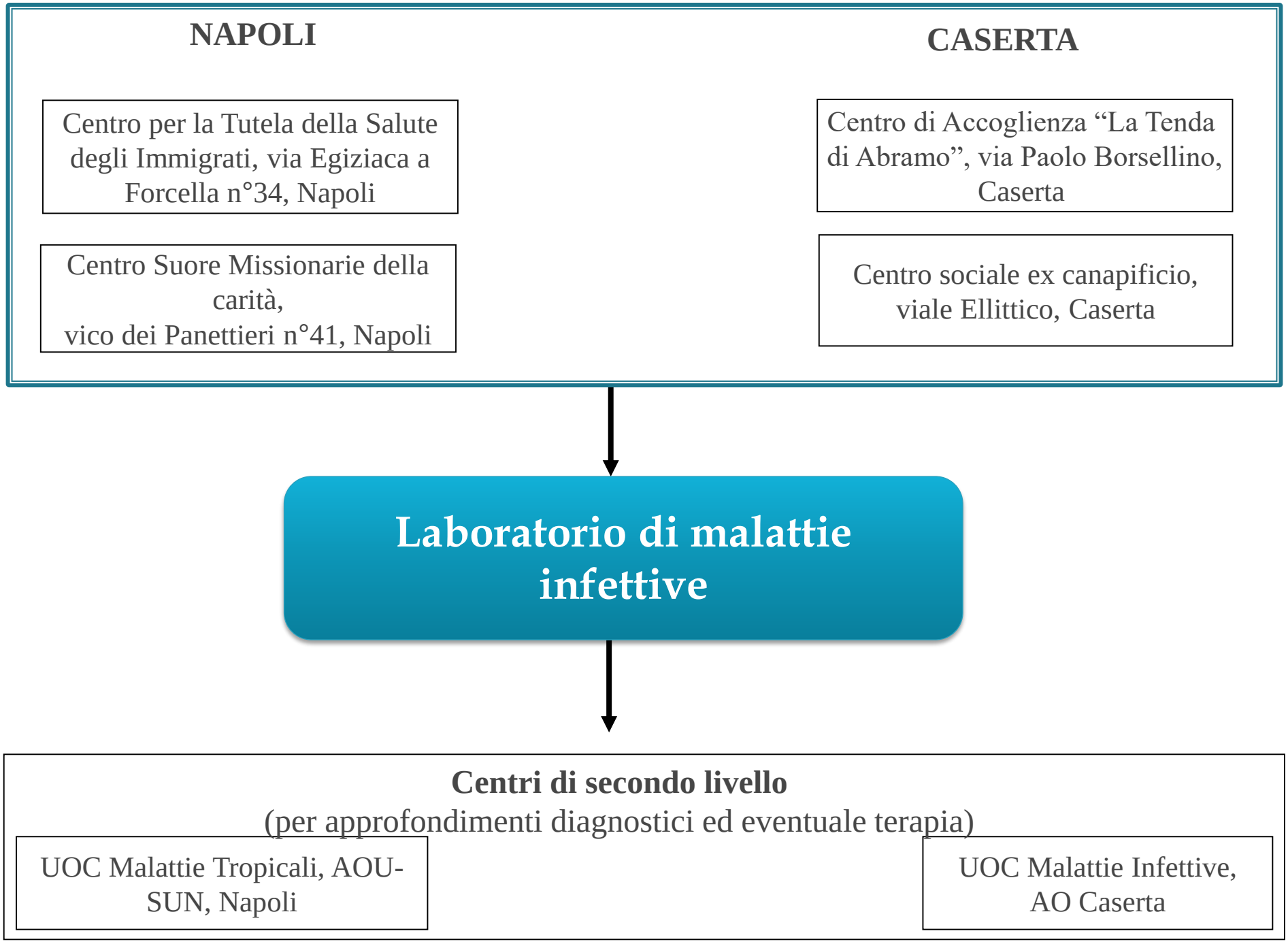
TOSSICODIPENDENZA e.v.: Si ☐ No ☐ Non noto ☐
Se Si, data inizio ____/_____/_____, data fine____/_____/_____

CHIRURGIA: Si ☐ No ☐ Non noto ☐
Se Si, tipo di intervento_____ anno _____ dove (nazione)_____

TRASFUSIONE DI EMODERIVATI : Si ☐ No ☐ Non noto ☐
Se si, anno_____dove (nazione)_____

TATUAGGI: Si ☐ No ☐ Non noto ☐ Se Si, anno____ dove (nazione)_____

PEARCING: Si ☐ No ☐ Non noto ☐ Se Si, anno_____ dove (nazione)_____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Centro di Accoglienza "La Tenda di Abramo", via Paolo Borsellino, Caserta
Centro sociale ex canapificio, viale Ellittico, Caserta
Laboratorio di malattie infettive
Centri di secondo livello
(per approfondimenti diagnostici ed eventuale terapia)
UOC Malattie Tropicali, AOU-SUN, Napoli
UOC Malattie Infettive, AO Caserta


Caserta 1 e 2
Napoli 1, 2 e 3
ROMA
CITTÀ DEL VATICANO
LAZIO
ABRUZZO
MOLISE
CAMPANIA
PUGLIA
BASILICATA
CALABRIA
SICILIA
SARDEGNA
Mar Tirreno
MEDITERRANEO
Mar Ionio
Frosinone
Isernia
Campobasso
Foggia
Barletta
Trani
Andria
Bari
Brindisi
Lecce
Taranto
Matera
Potenza
Benevento
Caserta
Golfo di Gaeta
Golfo di Salerno
Golfo di Taranto
G. di Manfredonia
Isole Tremiti
Alveo del Fucino
I. Palmaro
I. d'Ischia
I. di Capri
Cosenza
Crotone
Catanzaro
Golfo di Squillace
Vibo Valentia
Messina
Reggio di Calabria
Stretto di Messina
G. di Policastro
Isole Eolie (Lipari)
I. di Stromboli
G. di S. Eufemia
I. d'Ustica
I. Filicudi
I. Salina
I. Lipari
I. Vulcano
Palermo
Isole Egadi
Trapani
Caltanissetta
Enna
Catania
Agrigento
Siracusa
Ragusa
I. di Pantelleria
TUNISI
Bocche di Bonifacio
I. La Maddalena
I. di Caprera
I. Asinara
G. dell'Asinara
Tempio Pausania
I.Tavolara
Olbia
Sassari
G. del Coghinas
Nuoro
G. di Orosei
Oristano
G. di Oristano
Tortoli
Lanusei
Sanluri
Iglesias
I. di S. Pietro
Carbonia
I. di S. Antioco
Cagliari
G. di Cagliari
Milano Più di 1 000 000 di abitanti
Verona Da 250 000 a 1 000 000 di abitanti

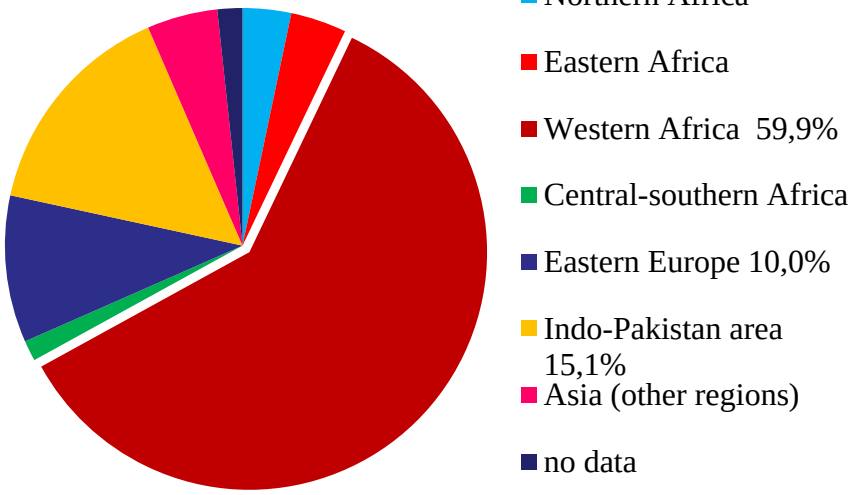

Foggia
Caserta 1 e 2
Napoli 1, 2 e 3
Basilicata
Saviano
Lamezia Terme
ROMA
CITTÀ DEL VATICANO
SARDEGNA
SICILIA
Milano Più di 1 000 000 di abitanti
Verona Da 250 000 a 1 000 000 di abitanti

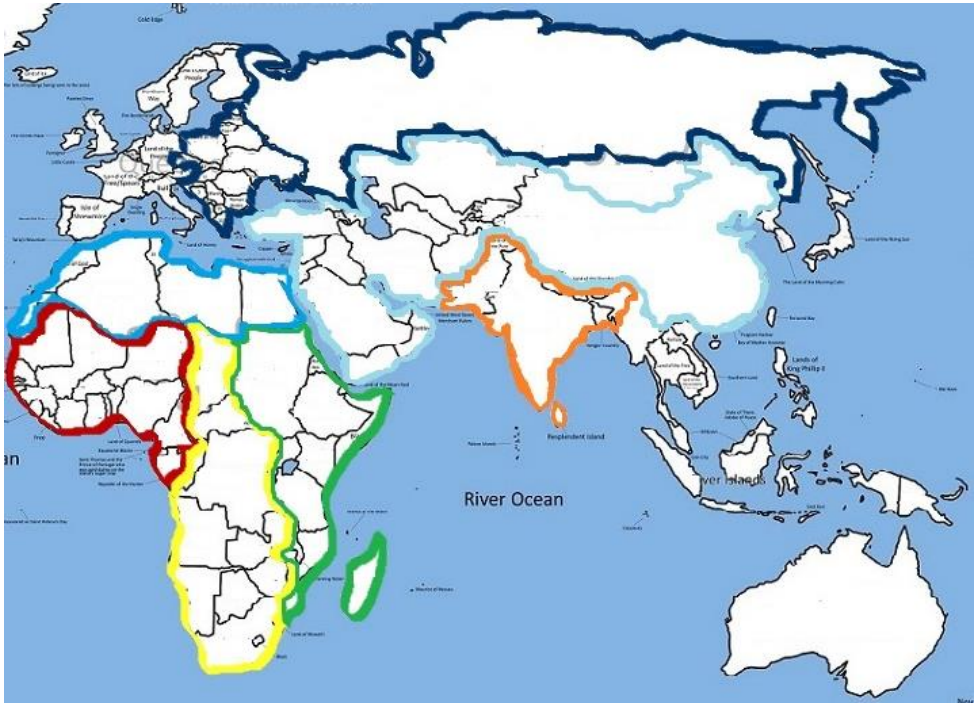
BLOOD-BORNE CHRONIC VIRAL INFECTIONS IN A LARGE COHORT OF IMMIGRANTS IN SOUTHERN ITALY: A SEVEN-CENTRE, PROSPECTIVE, SCREENING STUDY

Nicola Coppola[1,2], Caterina Monari[1,2], Loredana Alessio[2,3], Lorenzo Onorato[1,4], Luciano Gualdieri[5], Caterina Sagnelli[1,6], Carmine Minichini[1], Evangelista Sagnelli[1], Giovanni Di Caprio[2,3], Lorenzo Surace[6], Gaetano Scotto[7], Margherita Macera[1,3], Gianfranco Griffo[6], Italo Francesco Angelillo[8], Mariantonietta Pisaturo[1,4]

- **4125 subjects enrolled: 3839 (93.1%) accepted the screening**
- **Mean age 28 years ±10 SD**
- **84.0% males, 15.9% females, 0.1% unknown**

Geographical areas of origin: 7 macro-regions





Travel Medicine and Infectious Dis 2020

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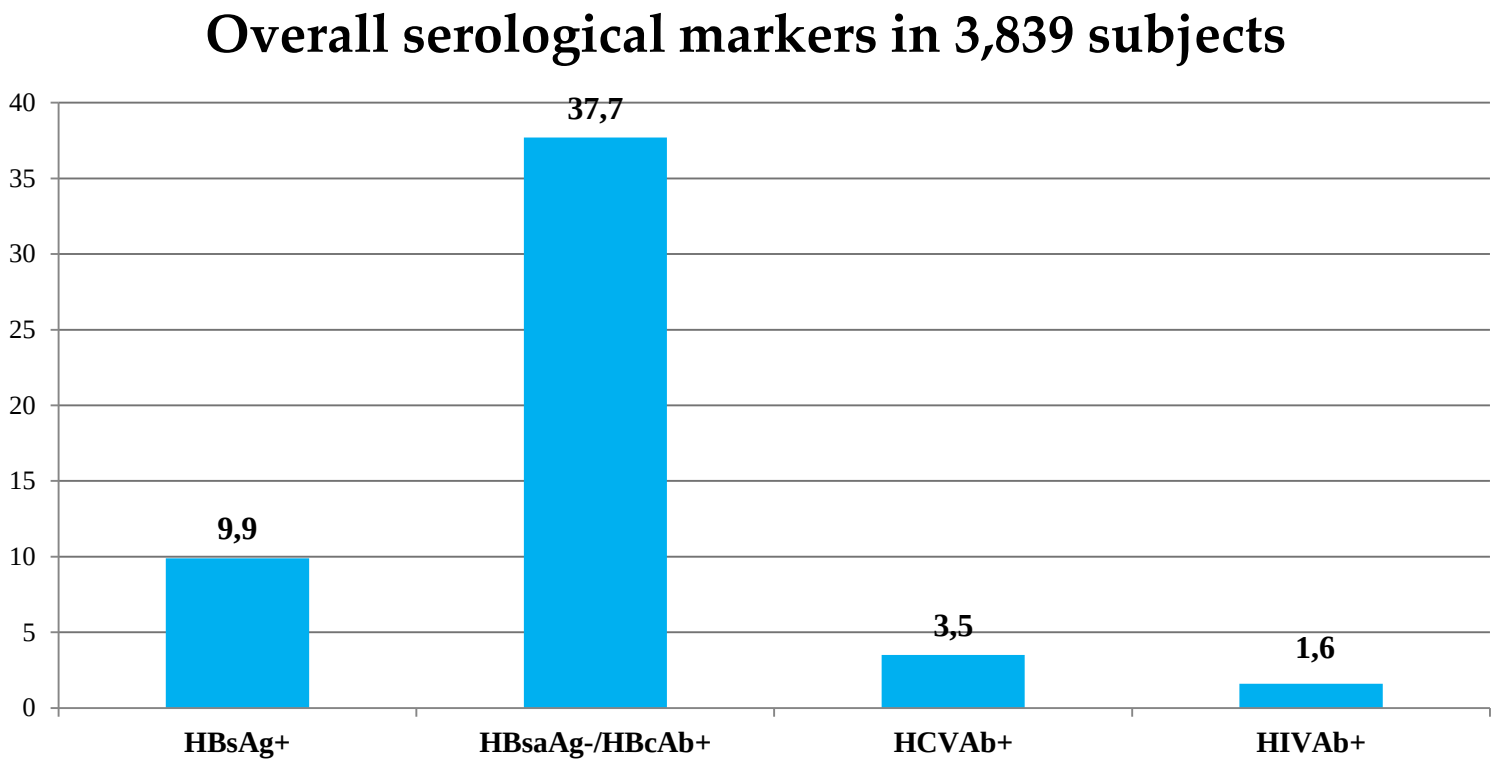

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3.839 immigrants

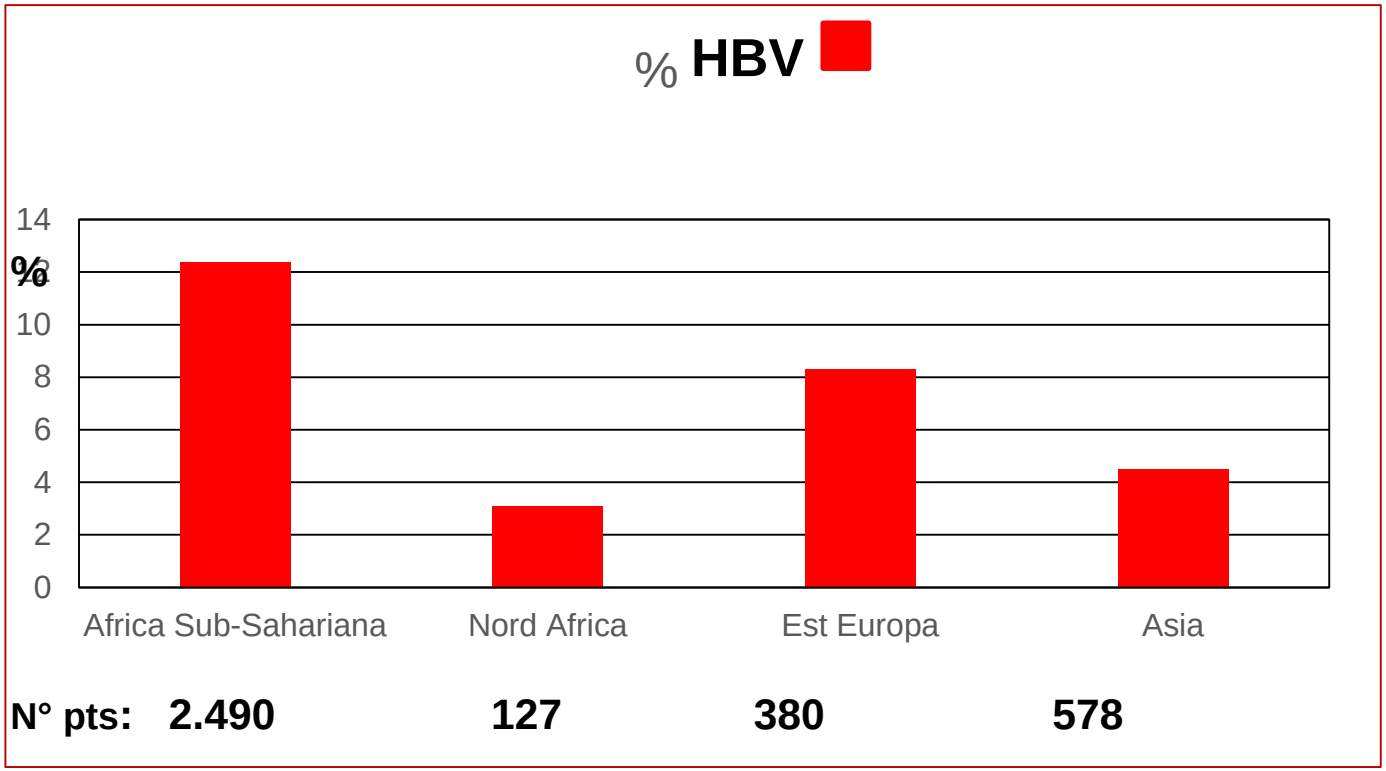

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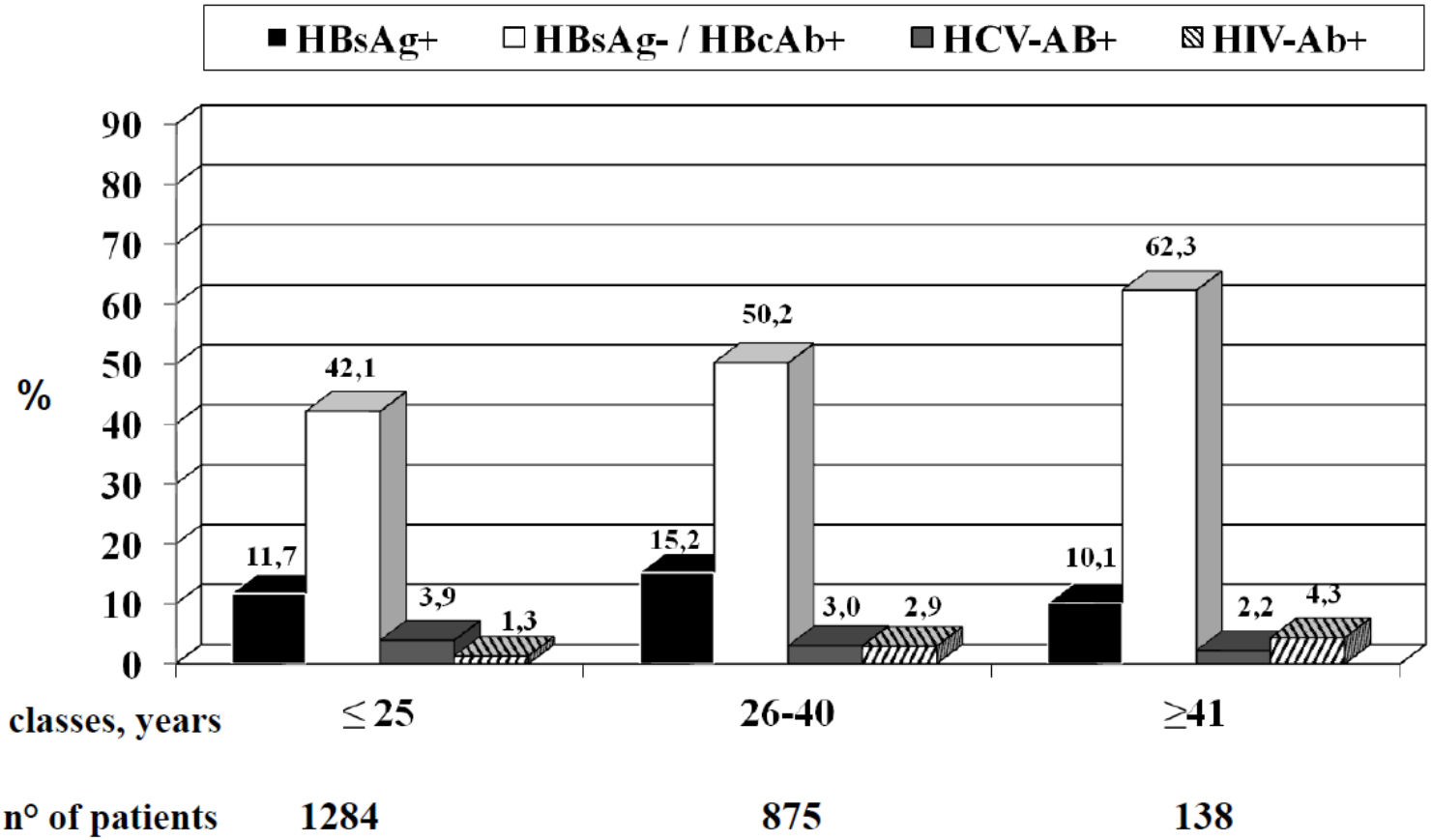
Figure 1 b: HBV, HCV, HIV infection in 2,297 immigrants from western Africa, according to age



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HBV, HCV and HIV prevalence according to country of origin
- From countries with more than 150 subjects enrroled-

	Number of subjects	Males, n (%)	Mean age (years±SD)	HBsAg+ n (%)	HBsAg-/anti-HBc+ n (%)	Anti HCV n (%)	Anti HIV n (%)
Nigeria	637	453 (71.1)	26±7·0	28 (**4.4**)	162 (25.4)	20 (3.1)	13 (2.0)
Ghana	307	293 (95.4)	29±8·2	41 (13.4)	185 (60.3)	10 (3.3)	9 (2.9)
Gambia	300	293 (97.7)	21±5·8	29 (9.7)	115 (38.3)	6 (2.0)	2 (0.7)
Senegal	285	277 (97.2)	30±9·5	64 (**22.5**)	152 (53.3)	6 (2.1)	4 (1.4)
Mali	229	226 (98.7)	24±6·2	45 (19.7)	125 (54.6)	15 (6.6)	1 (0.4)
Ivory Coast	203	184 (90.6)	26±7·1	30 (14.8)	132 (65.0)	8 (3.9)	7 (**3.4**)
Bangladesh	282	280 (99.3)	25±7·8	13 (4.6)	76 (27.0)	3(1.1)	1 (0.4)
Pakistan	251	248 (98.8)	29±8·0	12 (4.8)	49 (19.5)	22 (**8.8**)	1 (0.4)
Romania	178	68 (39.2)	35±11·5	22 (12.4)	51 (28.7)	3 (1.7)	2(1.1)

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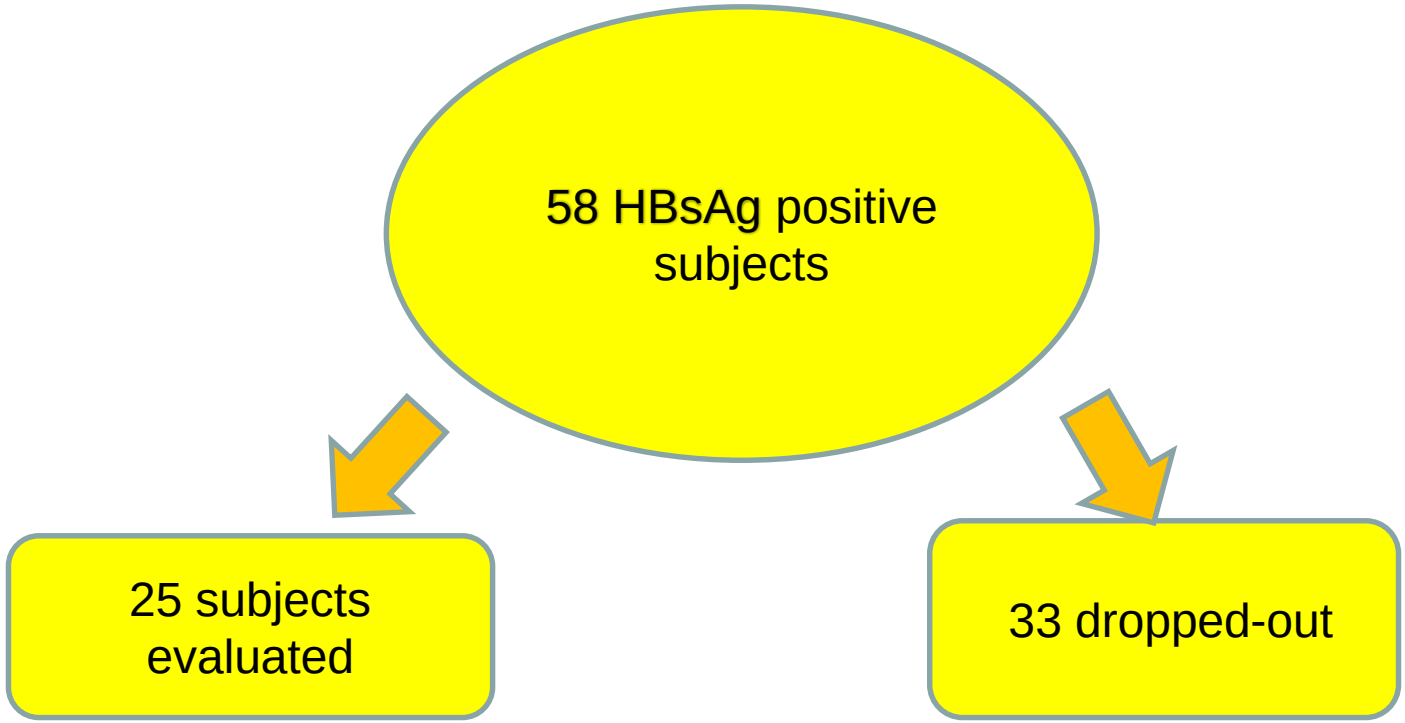
Factors associated to HBV infection

Parameter	Ongoing HBV infection: Odds Ratio	95% CI	p value	Ongoing AND past HBV infection: Odds Ratio	95% CI	p value
Gender: male vs female	**1.49**	1.04-2.14	**0.032**	**1.80**	1.46-2.22	**0.000**
Age	1,00	0.99-1.01	0.820	**1.03**	1.02-1.04	**0.000**
Country of origin						
northern Africa (ref)	-			-		
- western Africa	**4.67**	1.70-12.80	**0.003**	**9.01**	5.62-14.44	**0.000**
- eastern Africa	2.13	0.64-7.12	0.220	**3.63**	2.05-6.45	**0.000**
- central-southern Africa	2.66	0.64-11.11	0.179	**5.39**	2.64-11.03	**0.000**
- Indo-Pakistan area	1.43	0.49-4.20	0.511	**1.99**	1.21-3.26	**0.007**
- other countries of Asia	0.54	0.12-2.44	0.420	0.91	0.49-1.70	0.763
- eastern Europe	**3.44**	1.17-10.08	**0.024**	**3.73**	2.23-6.24	**0.000**

Travel Medicine and Infectious Dis 2020

From January 2012 to September 2013



Interventations

- Questionnaires
- Meeting
- Brochures
- Burocratic tutor

Questiononnaires

Country_____ Age_____

1. Quando un soggetto ha infezione da virus dell'epatite B, C e dal virus dell'immunodeficienza umana può mostrarsi in buona salute. Vero/ falso
When a subject has Hepatitis B Virus (HBV), Hepatitis C (HCV) Virus or Human immunodeficiency Virus (HIV) infection he/she can be in good health. True or false

2. I virus dell'epatite B, C e dell'immunodeficienza umana si trasmettono attraverso rapporti sessuali con persone infette. Vero/falso
The Hepatitis B Virus, Hepatitis C Virus or Human immunodeficiency Virus are transmitted through sexual contact with infected people. True or false

3. L'HIV si trasmette anche con i baci. Vero/Falso
The HIV is also transmitted through kisses. True or false

4. L'epatite B e C causano epatocarcinoma. Vero/falso
The Hepatitis B and C cause hepato-carcer. True or false

5. Si può morire di epatite HBV/HCV e di HIV. vero/falso
People can die of hepatitis B/C viruses and Human Immunodeficiency Virus. True or false

Interventations

- Questionnaires
- Meeting
- Brochures
- Burocratic tutor


Geographic Distribution of Chronic HBV Infection
An estimated 240 million people are chronically infected with hepatitis B (defined as hepatitis B surface antigen positive for at least 6 months)
More than 780 000 people die every year due to complications of hepatitis B, including cirrhosis and liver cancer
CDC

Interventations

- Questionnaires
- Meeting
- Brochures
- Burocratic tutor

Vieni a trovarci presso i nostri Centri Clinici!!

Il test del sangue è completamente gratuito

A Caserta presso:

"ex Centro Sociale Liberato", viale Ellittico 9

A Napoli presso:

"Tutela della Salute degli Immigrati", via Egiziaca a Forcella 34

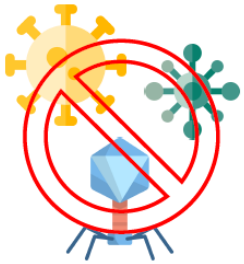
"Centro di accoglienza vicolo Verticoeli ", via Tribunali

"Centro di accoglienza femminile", via Tommasoni, villa Tommasoni, Saviano (NA)

STOP VIRUS!!!

STOP

HBV HCV HIV

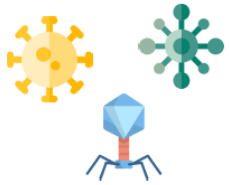


Cosa sono i virus HBV e HCV?

L'HBV e l'HCV sono virus che colpiscono il fegato causando l'Epatite virale, possono progredire nel tempo provocando la cirrosi epatica (alterazione di forma e funzione del fegato) e/o il tumore del fegato

Cos'è l'HIV?

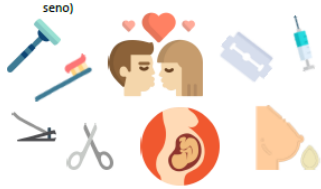
L'HIV è il virus responsabile dell'AIDS (Sindrome da Immunodeficienza Acquisita) e consiste in una progressiva diminuzione delle difese del corpo. Nel tempo compaiono altre malattie infettive e non, anche molto gravi.



Spesso queste malattie sono asintomatiche. Altre volte si possono manifestare con malessere generale, nausea, vomito e diarrea.

Come si trasmettono i virus HBV, HCV e HIV?

- Rapporti sessuali non protetti (vaginali e anali)
- Sangue: scambio di siringhe infette, strumenti per tatuaggi e piercing contaminati con sangue infetto, uso in comune di oggetti personali (rasoi, tagliaunghie, spazzolino da denti, etc) contaminati da sangue
- Da madre infetta al bambino (durante gravidanza, parto e allattamento al seno)



Con il test specifico (un prelievo di sangue) per la ricerca degli anticorpi nel sangue è possibile sapere se si è stati contagiati da questi virus.

Nei primi mesi dopo il contagio il test può essere negativo, perciò è bene ripeterlo, fino a 3 mesi dopo il contagio.

Come si può prevenire il contagio dai virus HBV, HCV e HIV?

- Usare sempre il profilattico durante i rapporti sessuali genitali, anali e orali
- Usare soltanto siringhe sterili
- Assicurarsi che gli strumenti utilizzati per piercing e tatuaggi siano utilizzati una volta sola (monouso)
- Evitare il contatto diretto con il sangue
- Molte infezioni possono trasmettersi durante gravidanza, parto e allattamento dalla madre al bambino: sottoporsi al test del sangue e ai controlli per le infezioni è la migliore protezione per i bambini

Esiste un vaccino per proteggersi dall'HBV, e farmaci contro HCV e HIV.

Uje kwenye zahanati yetu!

Kipimo hakina gharama yoyote

Caserta:

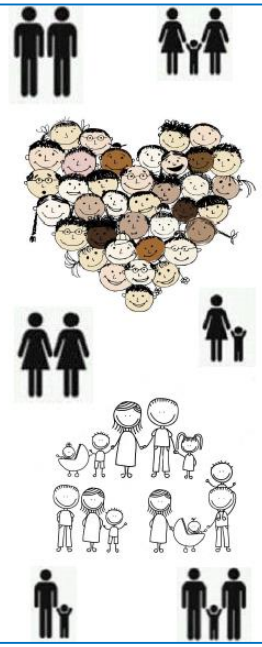
"ex Centro Sociale Liberato", viale Ellittico 9

Napoli:

"Tutela della Salute degli Immigrati", via Egiziaca a Forcella 34

"Centro di accoglienza vicolo Verticoeli ", via Tribunali

"Centro di accoglienza femminile", via Tommasoni, villa Tommasoni, Saviano (NA)



STOP VIRUSI!!!

STOP

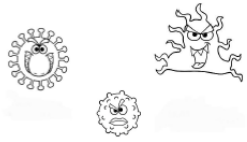
HBV HCV HIV

HBV na HCV ni nini?

HBV na HCV ni virusi vinavyoshambulia ini na kusababisha ugonjwa wa homa ya ini (Hepatitis B), virusi hivi vinaweza pia kusababisha sirosisi (Cirrhosis yaani mabadiliko ya umbo na kazi za ini) na/au saratani ya ini.

HIV ni nini?

HIV, VVU ni virusi vinavyosababisha ugonjwa wa UKIMWI (Upungufu wa Kinga Mwilini) na kuharibu mfumo wa kingamwili. Magonjwa mengine ya kuambukiza na yasiyo ya kuambukiza huweza kushambulia mwili kwa urahisi kutokana na maambukizi ya VVU.



Mara nyingi magonjwa haya hayana dalili. Magonjwa haya huweza kuanza kama kichefuchefu, kutapika na kuhara.

HBC, HCV na HIV huambukizwaje?

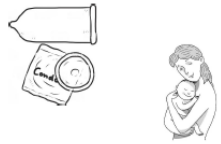
- Kwa njia ya ngono zembe (iwe kwa njia ya uke au kwa njia ya haja kubwa)
- Damu: kuchangia sindano ambayo haijachemshwa baada ya mtu mwingine kuitumia, kutumia vifaa vya kuchorea bombwe na kupenyeza piercing mwilini vilivyochafuliwa na damu yenye maambukizi, kubadilishana vitu binafsi (kama wembe, mashine ya kukatia kucha, mswaki n.k)
- Kutoka kwa mama aliye na maambukizi ya virusi kwenda kwa mtoto wakati wa ujauzito, kujifungua au kunyonyesha.

Uchunguzi wa kimaabara (kipimo cha damu) wa kingamwili kwenye damu huweza kuashiria kama mtu ameambukizwa virusi hivi.

Miezi ya mwanzo baada ya kuambukizwa kipimo kinaweza kisionyeshe uwepo wa maambukizi wa virusi, hivyo ni vema kupimwa baada ya miezi mi-tatu ya maambukizi.

Kuzuia maambukizi ya virusi vya HBC, HCV na HIV

- Tumia kondomu wakati wa kujamiiana (ngono kwa njia ya uke, njia ya haja kubwa, na mdomoni)
- Tumia sindano iliyochemshwa
- Hakikisha kwamba vyombo vya kuchorea bombwe na kupenyeza piercing mwilini vinatumiwa mara moja tu
- Epuka kugusa au kuloanishwa na damu
- Maradhi mengi husambaa kutoka kwa mama aliye na virusi kwenda kwa mtoto wakati wa ujauzito, kujifungua na kunyonyesha: kupima ni njia bora ya kuepusha maambukizi kwa mtoto wako.



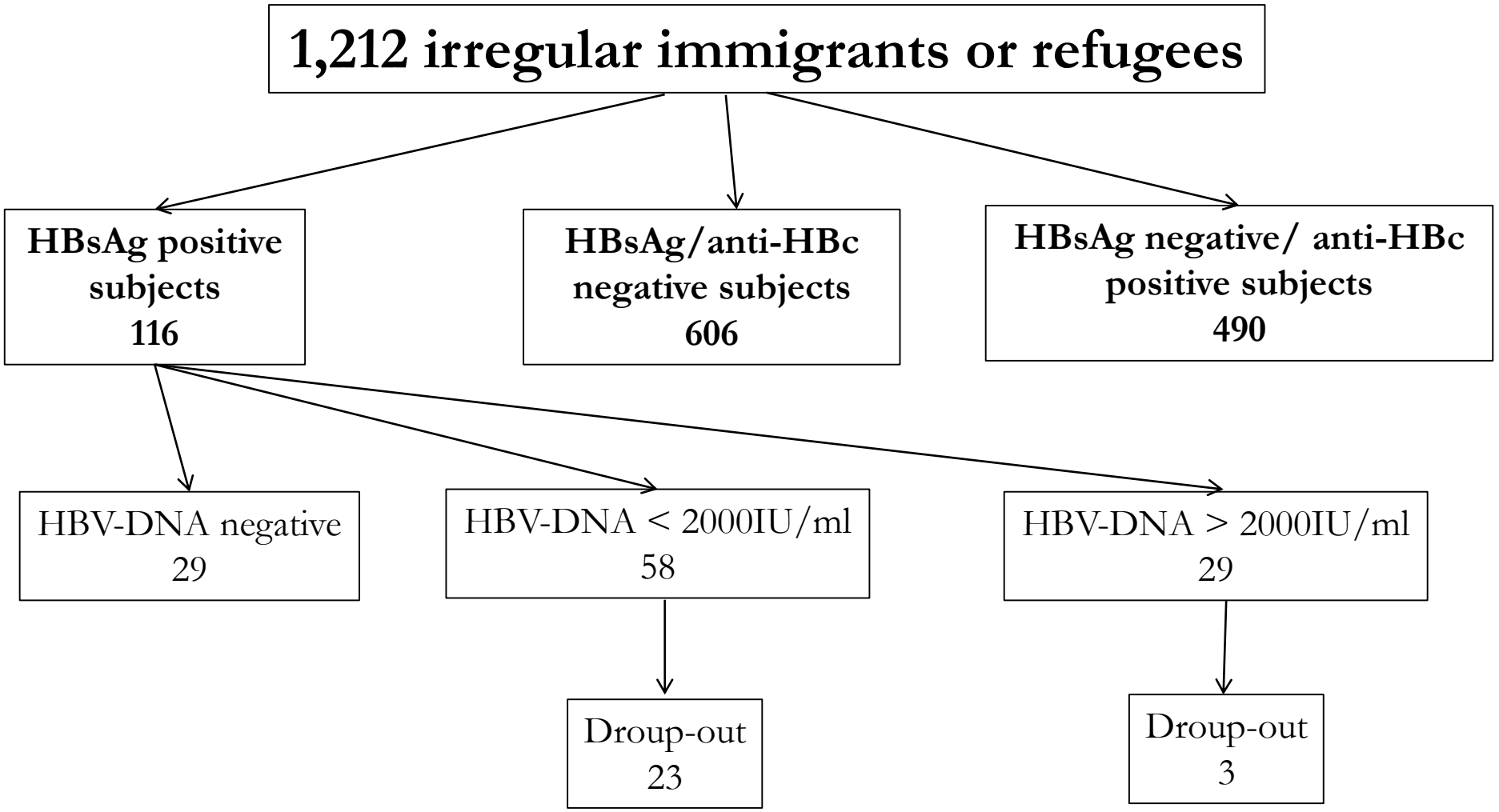
Chanjo ya kuzuia VVU ipo, na vile vile madawa dhidi ya HCV na HIV.

Interventations

- Questionnaires
- Brochures
- Meeting
- Burocratic tutor

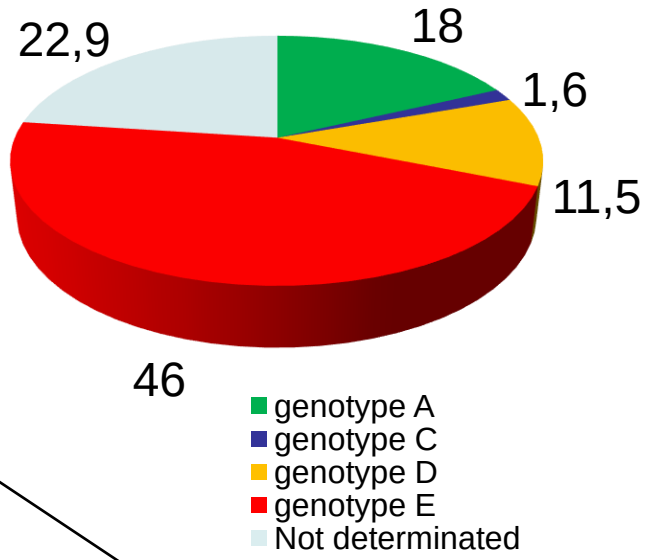
Hepatitis B virus infection in undocumented immigrants and refugees in Southern Italy: demographic, virological, and clinical features

Nicola Coppola[1*], Loredana Alessio[1,2], Luciano Gualdieri[3], Mariantonietta Pisaturo[4,5], Caterina Sagnelli[6,7], Carmine Minichini[1], Giovanni Di Caprio[1,2], Mario Starace[1], Lorenzo Onorato[1,2], Giuseppe Signoriello[8], Margherita Macera[1], Italo Francesco Angelillo[9], Giuseppe Pasquale[1] and Evangelista Sagnelli[5]



BMC Infect Dis Pov 2017

HBV infection



HBV DNA positive
61

Asymptomatic carriers
43

Follow-up

Chronic hepatitis
14

IFN-based therapy: 5
Nucleos(t)ide-analogue therapy: 6

SVR: 7

cirrhosis
4
(HCC 2)

Nucleos(t)ide-analogue therapy: 3

SVR: 3

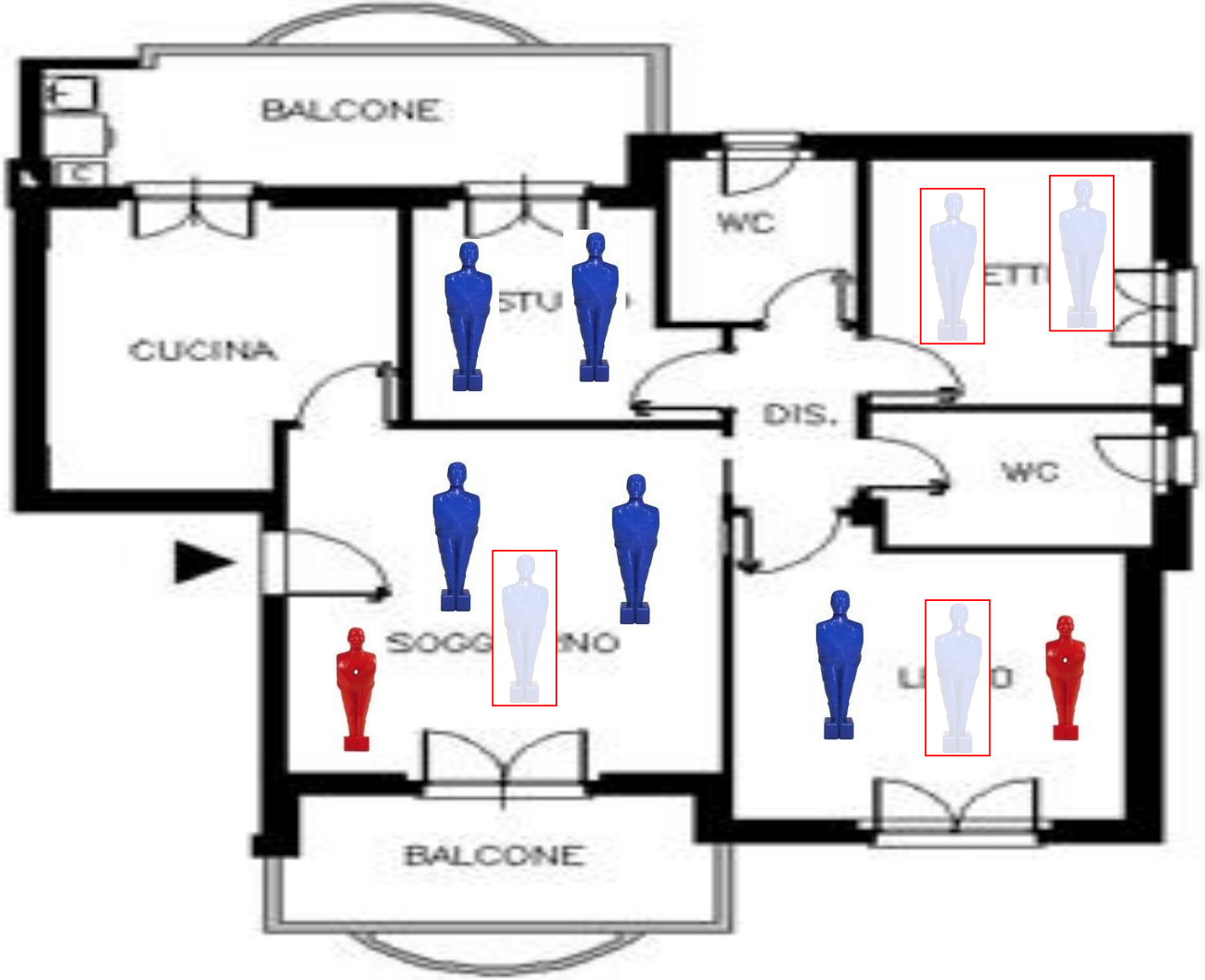
BMC Infect Dis Pov 2017

Programma di vaccinazione anti- HBV

HBsAg positivi

Anti core positivi

HBsAg-/anti-HBc-

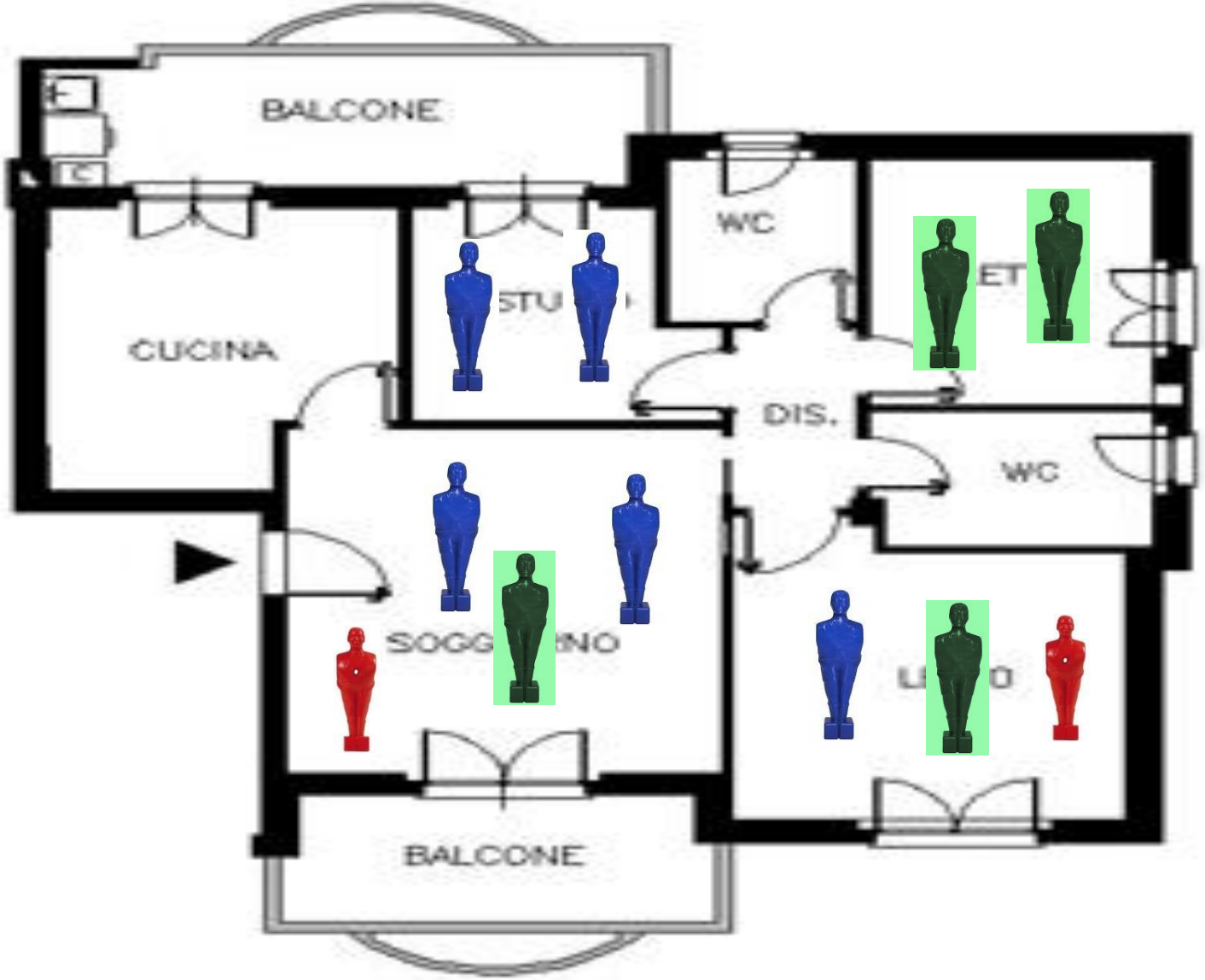


Programma di vaccinazione anti- HBV

HBsAg positivi

Anti core positivi

Vaccinati



CONCLUSIONS

- Due to migration flows, significant changes in the epidemiology of HBV (and HDV) infections are observed in developed countries

- In the Italian migration population:
  - HBV infection was found about 10%, especially in those from sub-Saharan Africa

- Taking care of this vulnerable group of individuals should be a moral duty for every Government or National Healthcare System in developed countries

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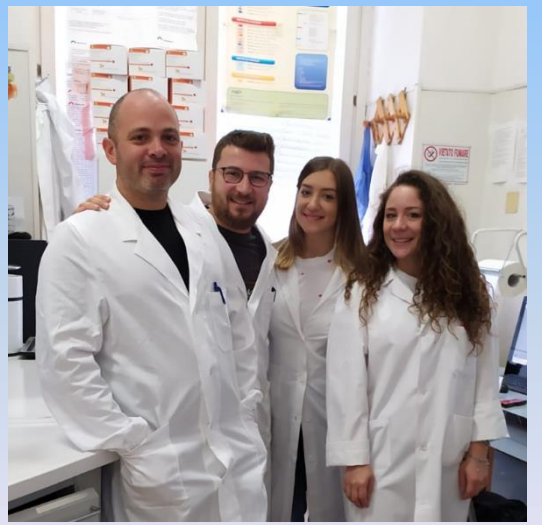

Grazie per l'attenzione!

GRAZIE PER L'ATTENZIONE!

Conclusions

- HBV vaccination has an excellent efficacy and a long-time and high immunogenicity
- immunological memory may persist for years after HBV vaccination, even in the absence of anti-HBs
- Few data in high-risk groups (health-care workers, MSM, immigrants, etc)

Studies on HBsAg mutations associated with immune escape and failure to detect HBsAg

First Author	Country	No. of patients	Type of Study	Patients with HBsAg mutation, n° (%)	Clinical significance	HBsAg mutation
Sticchi	Italy	256	Cross-sectional	8 (3.1)	Detection failure; Vaccine escape	G145R ,T126I
Luongo	Italy	1	Case report	1	Vaccine escape	M125T, T127P Q129H
Lee	Korea	1	Case report	1	Vaccine escape	G145R, P120Q, I126T
Seddigh	UK	4		2	Vaccine escape	P142S, G145R, G145A
Ngui	England, Wales	17	Cross-sectional	2 (12%)	Vaccine escape	P120Q, F134Y, D144A, I126N
Carman	multinational	32	Cross-sectional	1	Vaccine escape	G145R
Laoi	Ireland	32	Cross-sectional	6 (18.5%)	Vaccine escape, detection failure	G145A,F134L, D144E,S143L
Foy	USA	1	Case report	1	Immune escape	D144E