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Hepatitis C virus, Hepatitis B virus and human immunodeficiency virus infection in illegal immigrant's populationattended to AL- jabal alakhter area- Libya

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ABSTRACT

Assess the prevalence of Human Immunodeficiency Virus (HIV), Hepatitis B and C Virus and serological markers in immigrant people of various nationalities, living in the AL- Jabal alakhdar area. HIV, Hepatitis B and C are, and will remain for some time, major health problems in Libya.The retrospective study was conducted in AL- Bayda, Cyrene and AL-Quba illegal immigrant centers between October-December 2017.All samples were tested using enzyme immunoassay (ELISA). The study considers a total of 14,918 samples, mostly males. The highest prevalence rate of viral infection was HBsAg with 35 (1.22%) recorded in Al-Bayda center in 2016, while the lowest was 9 (1.82%) recorded in Al-Qubba center in 2015. The highest value of HCV was 18 (0.81%) in Al-Bayda center in 2016, while the highest value is in Both Elqubba (1.12%) and Cyrene centers (0.30%) which were recorded in 2017. HIV infected person in 2015,was one male (0.2%) in the Elqubba center and his nationality was Egyptian and only two females were recorded (0.4%) in Cyrene in 2016, their nationality waschad, while in 2017 One female was recorded (0.06%) in Cyrene and her nationality was chad and one male (0.2%) in Al-bayda from Egypt. Number of males (12919) exceeds females (1999). The highest frequency was 15 males and their ages were 24 years old. The highest level of infected illegal immigrants was from Egypt as 429 of them infected followed by 134 Chadians , 118 Sudanese, 105 Bangladesi's, 26 Syrians, 6 turkish and 6 Palestinian , 5 Tunisians and 3 Nigerians respectively.

Keywords: Hepatitis B, hepatitis C virus, HIV, Illegal immigrants.

INTRODUCTION

Immigration as a term of international law means the act of persons of foreign origin who settle in a country and abide therein with or without the hope of return.[11] WHO estimates reveal that the global prevalence of viral hepatitis may be as high as 500 million, with an annual mortality rate of up to 1.3 million individuals. The majority of this global burden of

disease is borne by nations of the developing world with high rates of vertical and iatrogenic transmission of HBV and HCV, as well as poor access to healthcare. Migrants predominantly originate from the developing countries of the south, into the developed economies of North America and Western Europe. Scenarios of war, poverty and famine push every day large numbers of people to leave their homeland in the hope of finding better living conditions. Most of them come from North Africa, the Middle East and Eastern Europe migration flows have altered the epidemiology of hepatitis B virus (HBV) and C (HCV) in Italy. Furthermore, migration flows have altered the epidemiology of hepatitis B virus (HBV) and C (HCV) in Italy.[2] The problem of HCV is much more vast and difficult to control, as there is today a specific vaccine against the virus. Hepatitis B (HBV) and Hepatitis C (HCV) viruses are leading causes of chronic liver disease and associated morbidity and mortality globally.[4] According to WHO estimates, an estimated 500 million (1 in 12 people) are living with chronic viral hepatitis, making HBV and HCV one of the top 10 infectious disease killers globally[4]. At least 1.3 million deaths annually can be attributed to chronic liver disease caused by HBV and HCV.[5] In addition, viral hepatitis also largely responsible for the global increase in liver cancer. Liver cancer is now the fifth most common cancer among men globally (ninth among women) with an annual mortality of at least 750,000 patient.[4,6] Since the majority of people living with chronic viral hepatitis are asymptomatic until the late stages of disease, estimates suggest that 40–80% of people with chronic viral hepatitis are unaware of the infection.[5] The largest burden of morbidity and mortality from chronic liver disease continues to be in nations of the developing world. For example, 5–10% of the adult population in East Asia and sub-Saharan Africa are estimated to have chronic HBV infection.[7]These countries are also the source of a steady influx of migrants into North America and the European Union (EU), posing unique challenges to the public health and immigration systems in the host nations. This review will focus on immigration in the context of the global viral hepatitis epidemic, outlining the data on prevalence of viral hepatitis among migrants, current standards for identification and treatment of infected individuals, and the evidence supporting targeted screening of immigrants and refugees. The immigration medical examination is a complete medical exam. It may include any or all of the following: a physical examination, a mental examination, a review of past medical history, laboratory tests and tests to establish medical diagnoses. The medical history questionnaire includes a question on HIV status. The HIV/AIDS epidemic has resulted in particularly controversial migration policies. The disease's magnitude, lingering misconceptions about it,[8] the lack of a cure, and its association with marginalized populations in an era of unprecedented movement of persons across borders, are factors that make HIV/AIDS-related restrictions on migration an especially contentious issue. Besides sexual intercourse, HIV can also be transmitted during drug injection by the sharing of needles contaminated with infected blood; by the transfusion, of infected blood or blood

products; and from an infected woman to her baby – before birth, during birth or just after delivery. The aim of this study was to assess the prevalence of Human Immunodeficiency Virus (HIV), Hepatitis B Virus (HBV) and Hepatitis C Virus (HCV) serological markers in immigration people of various nationalities, living in AL- Jabal alakhtheer area.

MATERIALS AND METHOD

Materials: Immunoassay that detect antibodies or antigens and give a result in less than 30 minutes. Most RDTs can performed with capillary whole blood collected by finger- stick sampling. Laboratory –based serological immunoassays that detect antibodies, antigens or combination of both.

Methods: The retrospective study was conduct in AL- bayda , Cyrene and AL-quba illegal immigrants center between October-December 2017. Illegal immigrants with confirmed HIV infection, tested negative to serological detection of HBV surface antigen (HBsAg). All samples were test for anti- HBc, anti- HBs and anti- HCV antibodies using enzyme immunoassay (ELISA).

RESULTS AND DISCUSSION

A total of (14,918) samples mostly males were analyzed illegal the immigration Centers in AL-bayda,city received (7041) immigrants from male gender, followed by Ceryne city was (5,024) immigrants their gender were males and females and Al-gubba town was (2853) immigrants their gender were males.

Comparison between illegal immigrants with HBsAg and the years

Figure (1) shows the number of HBsAg injured in Elqubba, Cyrena and Al-Bayda city in each of the years 2015, 2016 and 2017. The data indicate that the highest number was 35 (1,22%) recorded in the Al-Bayda at 2016, while the lowest was 9 (1.82%) recorded in Elqubba at 2015, Injuries in both city of the Elqubba and Cyrena recorded the highest value at 2017 while in the city of Al-Bayda a decline in the number of infected in 2017 than it is in 2016, and overall, the highest recorded value of injury recorded in the Al-Bayda city through the 2015 , 2016 and 2017 years , it is may be due to the size of The sample of the study in addition to the large numbers of immigrants in the city of compared to the the Elqubba and Cyrena .

Table (1) Comparison between illegal immigrants with HBsAg and the years.

%	Bayda	%	Cyrene	%	Qubba	Year
1.38	18	2	15	1.82	9	2015
1.22	35	2.11	19	1.17	12	2016
1	32	1.53	25	2.5	29	2017

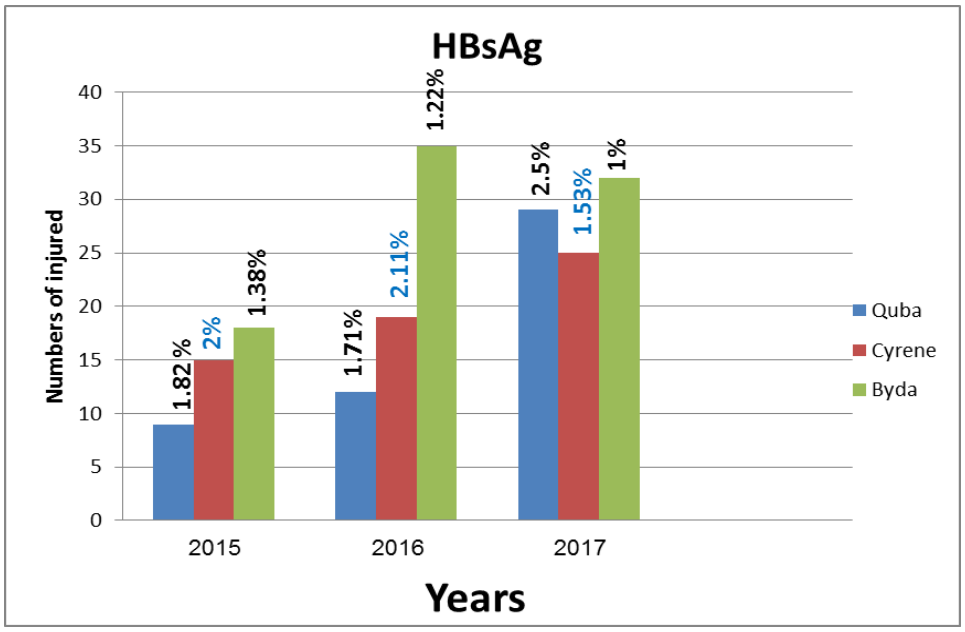

Figure. (1) Comparison between illegal immigrants with HBsAg and the years.

Distribution of the illegal immigrants HCV infected according to the years.

The data in Figure (2) indicate the number of HCV infected persons in Elqubba, Cyrena and Al-Bayda city, where we note that the lowest number of infected persons was recorded at 2015 in three cities, and the highest recorded value of the injury was (0.81%) in the Al-

Bayda city at 2016, while there was a decline of this value (0.36%) at 2017, and the highest value of the injured in Both Elqubba13 (1.12%) and Cyrene 5 (0.30%) city was recorded in 2017 . The rate of increase in the number of infected in both city, Elqubba and Al-Bayda between 2015 and 2016 was greater than Cyrena , addition to the decline in the number of infected was recorded in Al-Bayda at 2017 compared to what is in the year 2016.

Table (2) Distribution of the illegal immigrants HCV infected according to the years.

%	Bayda	%	Cyrrene	%	Quba	year
0.38	5	0.4	2	0 .6	3	2015
0.81	18	0.44	4	1.24	10	2016
0.36	13	0.30	5	1.12	13	2017

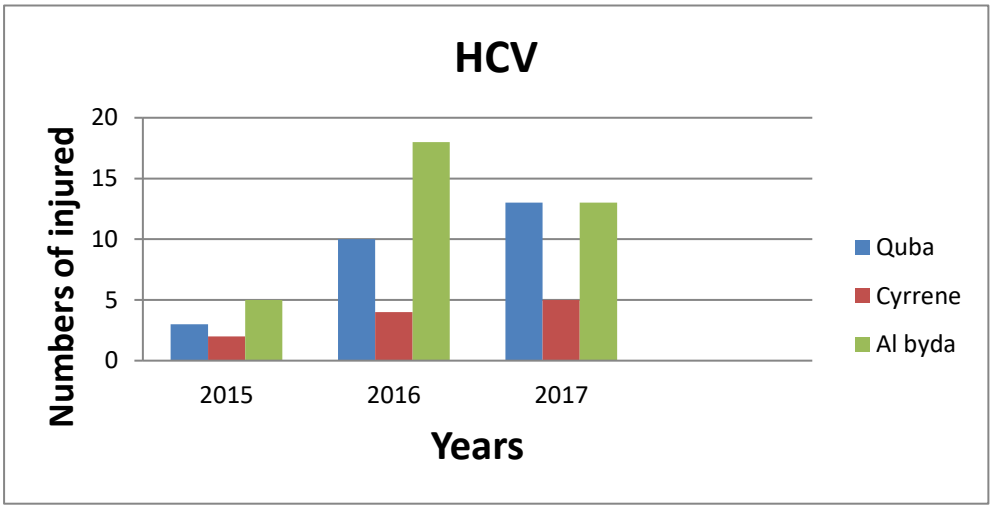

Figure. (2) Distribution of the illegal immigrants HCV infected according to the years.

Comparison between the immigrants HIV infected according to the years.

Figure (3) shows the number of people infected with HIV in the years 2015, 2016 and 2017 in Elqubba, Cyrena and Al-Bayda centers, and we note that in 2015, there was only one male (0.2%) in the Elqubba in 2015 and his nationality was Egypt and recorded only two females (0.4%) in Cyrene at 2016, their nationality etched, while in 2017 record One female (0.06%) in Cyrene her nationality was etched and one male (0.2%) in Al-bayda from Egypt.

Table (3) Comparison between the immigrants HIV infected according to the years.

%	Gender	Bayad	%	Gender	Cyrene	%	Gender	Quba	Year
		0			0	0.2	M	1	2015
		0	0.4	F	2			0	2016
0.2	M	1	0.06		1			0	2017

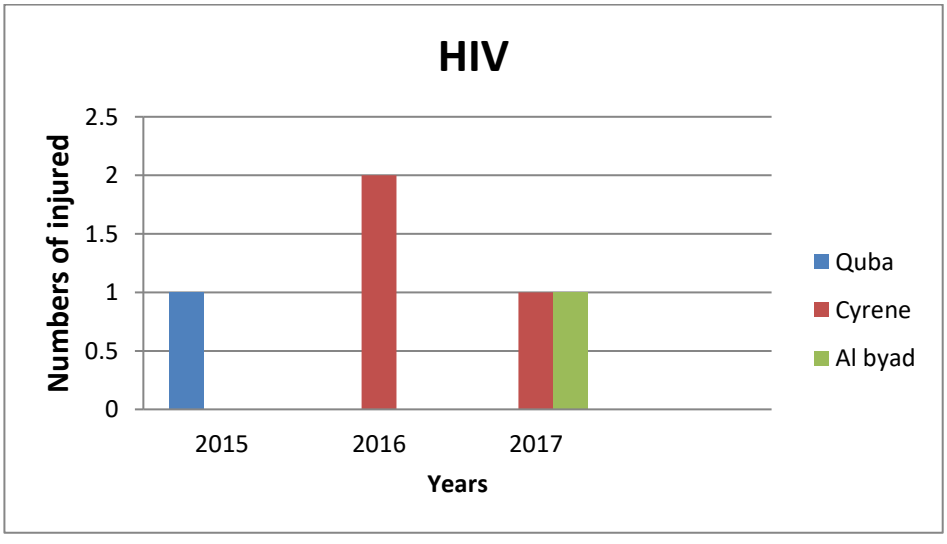

Figure. (3) Comparison between the immigrants HIV infected according to the years.

Comparison between the genders of migrants.

The number of migrants according to sex is illustrated by the figure(4) and indicates that the number of males exceeds females in each of the three cities under study (Elqubba, Cyrena and Al-Bayda) where the highest value was recorded for males in Al-Bayda city (7041). The females in Cyrena was 1999 and not recorded in both city Elqubba and Al-Bayda while the males was 3025. The value of the males in Alquba was 2853 and the females not recorded. Generally, the number of illegal migrants of both sexes reached 2853, 5024 and 7041 in Elquba, Cyrene and Al-Bayda respectively.

Table (4) Comparison between the genders of migrants.

Male	Female	Place
2853	0	Quba
3025	1999	Cyrene
7041	0	Al bayda
12919	1999	Total

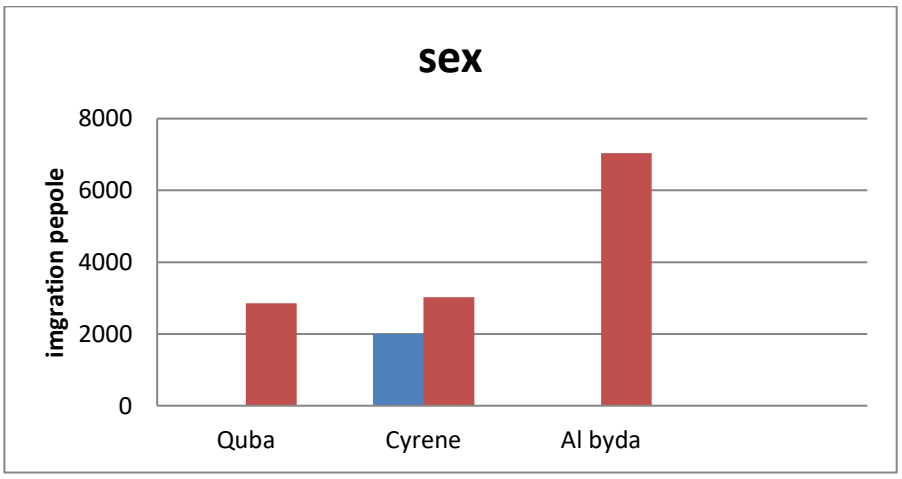

Figure. (4) Comparison between the genders of migrants.

Comparison between of viral infected immigrants and the ages.

Depending on only ages that enrolled from Al bayda, cyrene and Elqubba illegal immigrants center, The highest frequency of infected ages from illegal immigration center from EL-qubba town was (15 immigrants males) with ages 24 years, followed by (14 males) 23 years and (14 males) 26 years respectively, while he lowest level of infected immigrants males was (1) in ages 31, 35, 36 and 55 years respectively. The highest level of infected immigrants from Al- bayda city was (11 males) with ages 20 years, while the lowest level was 1 with males their ages 35,38,45 and 48 years.

Table (5) Comparison between of viral infected immigrants and the ages.

Albyad	cyrene	Quba	Age
		2	1957
2		1	1963
1		2	1970
1		3	1973
		2	1975
2			1976
1		5	1980
		1	1981
2			1982
1		1	1983
		1	1985
3			1986
		1	1987
4		2	1988

5		3	1990
4		3	1991
7		14	1992
3		4	1993
8		15	1994
5		14	1995
		4	1996
2		2	1997
		3	1998
		5	1999

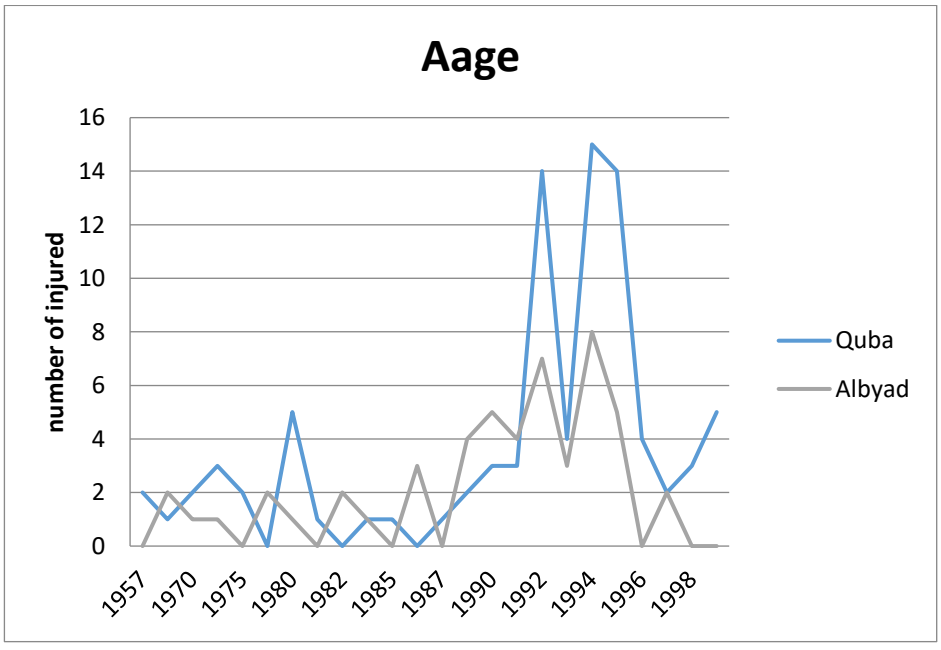

Figure. (5) Comparison between of viral infected immigrants and the ages.

Distribution of immigrants according to their nationality.

The highest level of infected illegal migrants was in Egypt 429 followed by etched 134, Sudan 118, Bangladesh 105, Syria 26, and turkey 6, and Palestine 6 respectively, Tunisia 5 while the lowest was 3 in Najera.

Table (6) Distribution of immigrants according to their nationality.

Infected immigrants	National
5	Tunisia
134	Etched
6	Turkey
6	Palestine
3	Nigeria
118	Sudan
105	Bangladesh
429	Egypt
26	Syria

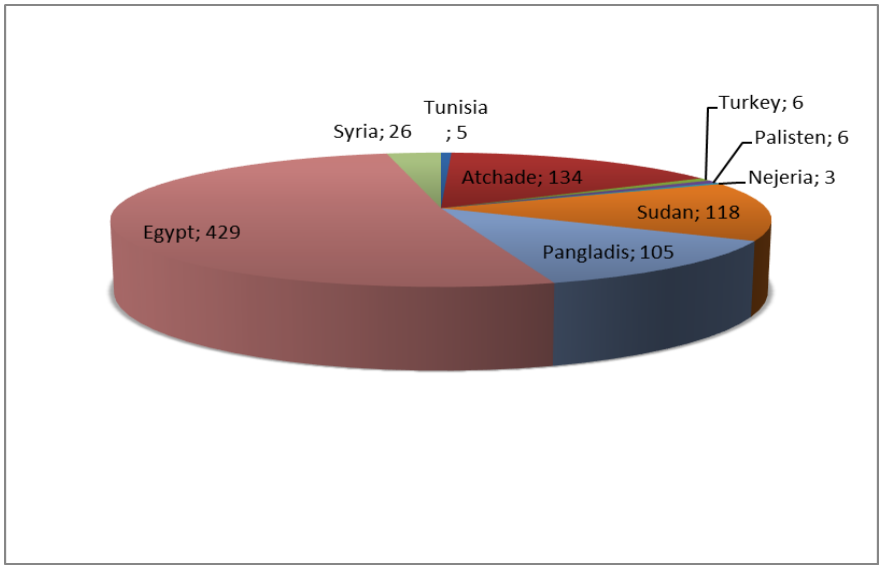

Figure. (6) Distribution of immigrants according to their nationality.

CONCLUSION

People fleeing from cruel wars and/or extreme need are often destitute. Correct management of the healthcare problems of immigrants requires expert personnel, funds and dedicated structures for their assistance. The data illustrate the demographic, clinical and virological characteristics of HBV infection in immigrants in Libya and indicate the need for Libyan healthcare authorities to enhance their support for providing screening, HBV vaccination, treatment, and educational programs for this populations. This study demonstrates that the HIV/HBSAg and HCV co-infection rate significantly underestimated with the current serology testing.

REFERENCES

1. Hatton TJ, Williamson JG. Demographic and Economic Pressure on Emigration out of Africa Scand. J of Economics. 2003;105:465–486. doi: 10.1111/1467-9442.t01-2-00008. [Cross Ref]

2. Sidibé M. Putting education first. Available from: http://www.huffingtonpost.com/michel-sidib/aids-education_b_1915767.html.

3. Rossi C, Shrier I, Marshall L, Cnossen S, Schwartzman K, Klein MB, Schwarzer G, Greenaway C. Seroprevalence of chronic hepatitis B virus infection and prior immunity in immigrants and refugees: a systematic review and meta-analysis. PLoS One. 2012;7:e44611. doi: 10.1371/journal.pone.0044611. [PMC free article][PubMed] [Cross Ref]

4. World Health Organization. Hepatitis B. World Health Organization Fact Sheet No. 204. [Accessed 2005 Jun 5] Available from: http://who.int/mediacentre/factsheets/fs204/en.

5. Sagnelli E, Stroffolini T, Mele A, Imparato M, Almasio PL. Chronic hepatitis B in Italy: new features of an old disease--approaching the universal prevalence of hepatitis B e antigen-negative cases and the eradication of hepatitis D infection. Clin Infect Dis. 2008;46:110–113. doi: 10.1086/524074. [PubMed] [Cross Ref]

6. Sagnelli E, Stroffolini T, Mele A, Imparato M, Sagnelli C, Coppola N, Almasio PL. Impact of comorbidities on the severity of chronic hepatitis B at presentation. World J Gastroenterol. 2012;18:1616–1621. doi: 10.3748/wjg.v18.i14.1616. [PMC free article] [PubMed] [Cross Ref]

7. Sagnelli E, Sagnelli C, Pisaturo M, Macera M, Coppola N. Epidemiology of acute and chronic hepatitis B and delta over the last 5 decades in Italy. World J Gastroenterol. 2014;20:7635–7643. doi: 10.3748/wjg.v20.i24.7635. [PMC free article] [PubMed] [Cross Ref]

8. Sagnelli E, Stroffolini T, Mele A, Almasio P, Coppola N, Ferrigno L, Scolastico C, Onofrio M, Imparato M, Filippini P. The importance of HCV on the burden of chronic liver disease in

Italy: a multicenter prevalence study of 9,997 cases. J Med Virol. 2005;75:522–527. doi: 10.1002/jmv.20313. [PubMed] [Cross Ref]

9. Lavanchy D. Hepatitis B virus epidemiology, disease burden, treatment, and current and emerging prevention and control measures. J Viral Hepat. 2004;11:97–107. doi: 10.1046/j.1365-2893.2003.00487.x. [PubMed][Cross Ref]

10. McCarthy AE, Weld LH, Barnett ED, So H, Coyle C, Greenaway C, Stauffer W, Leder K, Lopez-Velez R, Gautret P, et al. Spectrum of illness in international migrants seen at GeoSentinel clinics in 1997-2009, part 2: migrants resettled internationally and evaluated for specific health concerns. Clin Infect Dis. 2013;56:925–933. doi: 10.1093/cid/cis1016. [PubMed] [Cross Ref]

11. Scotto G, Martinelli D, Di Tullio R, Fazio V. Epidemiological and Clinical Features of Hepatitis B Virus Genotypes among Immigrants in Southern Italy. Hepat Res Treat. 2010;2010:878356. doi: 10.1155/2010/878356. [PMC free article] [PubMed] [Cross Ref]

12. Tafuri S, Prato R, Martinelli D, Melpignano L, De Palma M, Quarto M, Germinario C. Prevalence of Hepatitis B, C, HIV and syphilis markers among refugees in Bari, Italy. BMC Infect Dis. 2010;10:213. doi: 10.1186/1471-2334-10-213. [PMC free article] [PubMed] [Cross Ref]

13. Majori S, Baldo V, Tommasi I, Malizia M, Floreani A, Monteiro G, Ferrari A, Accordini A, Guzzo P, Baldovin T. Hepatitis A, B, and C infection in a community of sub-Saharan immigrants living in Verona (Italy) J Travel Med. 2008;15:323–327. doi: 10.1111/j.1708-8305.2008.00230.x. [PubMed] [Cross Ref]

14. Coppola N, Alessio L, Gualdieri L, Pisaturo M, Sagnelli C, Caprio N, Maffei R, Starace M, Angelillo IF, Pasquale G, et al. Hepatitis B virus, hepatitis C virus and human immunodeficiency virus infection in undocumented migrants and refugees in southern Italy, January 2012 to June 2013. Euro Surveill. 2015;20 doi: 10.2807/1560-7917.ES.2015.20.35.30009. [PubMed] [Cross Ref]

15. Rivas P, Herrero MD, Poveda E, Madejón A, Treviño A, Gutiérrez M, Ladrón de Guevara C, Lago M, de Mendoza C, Soriano V, et al. Hepatitis B, C, and D and HIV infections among immigrants from Equatorial Guinea living in Spain. Am J Trop Med Hyg. 2013;88:789–794. doi: 10.4269/ajtmh.12-0319. [PMC free article][PubMed] [Cross Ref]

16. Toro C, Jiménez V, Rodríguez C, Del Romero J, Rodés B, Holguín A, Alvarez P, García-Campello M, Gómez-Hernando C, Guelar A, et al. Molecular and epidemiological characteristics of blood-borne virus infections among recent immigrants in Spain. J Med Virol. 2006;78:1599–1608. doi: 10.1002/jmv.20744.[PubMed] [Cross Ref]

17. El-Hamad I, Pezzoli MC, Chiari E, Scarcella C, Vassallo F, Puoti M, Ciccaglione A, Ciccozzi M, Scalzini A, Castelli F. Point-of-care screening, prevalence, and risk factors for hepatitis B

infection among 3,728 mainly undocumented migrants from non-EU countries in northern Italy. J Travel Med. 2015;22:78–86. doi: 10.1111/jtm.12176. [PubMed] [Cross Ref]

18. World Health Organization (WHO). Global Health Observatory (GHO) data. HIV/AIDS prevalence in sub-Saharan Africa. Geneva: WHO. [Accessed 22 Aug 2015]. Available from:http://www.who.int/gho/urban_health/outcomes/hiv_prevalence_text/en/

19. Stornaiuolo G, Cuniato V, Cuomo G, Nocera E, Brancaccio G, De Rosa M, et al. Active recruitment strategy in disadvantaged immigrant populations improves the identification of human immunodeficiency but not of hepatitis B or C virus infections. Dig Liver Dis. 2014;46(1):62-6. https://doi.org/10.1016/j.dld.2013.08.126 PMID: 2414880619

20.Weinbaum CM, Williams I, Mast EE, Wang SA, Finelli L, Wasley A, et al. Recommendations for identification and public health management of persons with chronic hepatitis B virus infection. MMWR Recomm Rep. 2008;57(RR-8):1-20. PMID: 18802412

21. Majori S, Baldo V, Tommasi I, Malizia M, Floreani A, Monteiro G, et al. Hepatitis A, B, and C infection in a community of sub-Saharan immigrants living in Verona (Italy). J Travel Med. 2008;15(5):323-7. https://doi.org/10.1111/j.1708-8305.2008.00230.x PMID: 19006505

22. Chironna M, Germinario C, Lopalco PL, Quarto M, Barbuti S. HBV, HCV and HDV infections in Albanian refugees in Southern Italy (Apulia region). Epidemiol Infect. 2000;125(1):163-7. https://doi.org/10.1017/S0950268899004215 PMID: 11057972

23.Chironna M, Germinario C, Lopalco PL, Carrozzini F, Barbuti S, Quarto M. Prevalence rates of viral hepatitis infections in refugee Kurds from Iraq and Turkey. Infection. 2003;31(2):70-4. https://doi.org/10.1007/s15010-002-3100-3 PMID: 12682810.

24. Sagnelli E, Sagnelli C, Pisaturo M, Macera M, Coppola N. Epidemiology of acute and chronic hepatitis B and delta over the last 5 decades in Italy. World J Gastroenterol. 2014;20(24):7635-43. https://doi.org/10.3748/wjg.v20.i24.7635 PMID: 24976701

25. Zanetti AR, Tanzi E, Romanò L, Grappasonni I. Vaccination against hepatitis B: the Italian strategy. Vaccine.1993;11(5):521-4. https://doi.org/10.1016/0264-410X(93)90222-J PMID: 8488702

26. Stornaiuolo G, Cuniato V, Cuomo G, Nocera E, Brancaccio G, De Rosa M, et al. Active recruitment strategy in disadvantaged immigrant populations improves the identification of human immunodeficiency but not of hepatitis B or C virus infections. Dig Liver Dis. 2014;46(1):62-6. https://doi.org/10.1016/j.dld.2013.08.126 PMID: 24148806

27. Weinbaum CM, Williams I, Mast EE, Wang SA, Finelli L, Wasley A, et al. Recommendations for identification and public health management of persons with chronic hepatitis B virus infection. MMWR Recomm Rep. 2008;57(RR-8):1-20. PMID: 18802412

28. Tafuri S, Prato R, Martinelli D, Melpignano L, De Palma M, Quarto M, et al. Prevalence of Hepatitis B, C, HIV and syphilis markers among refugees in Bari, Italy. BMC Infect Dis. 2010;10:213. doi: 10.1186/1471-2334-10-213

29. Majori S, Baldo V, Tommasi I, Malizia M, Floreani A, Monteiro G, et al. Hepatitis A, B, and C infection in a community of sub-Saharan immigrants living in Verona (Italy). J Travel Med. 2008;15(5):323-7. https://doi.org/10.1111/j.1708-8305.2008.00230.x PMID: 19006505

30.Chironna M, Germinario C, Lopalco PL, Carrozzini F, Barbuti S, Quarto M. Prevalence rates of viral hepatitis infections in refugee Kurds from Iraq and Turkey. Infection. 2003;31(2):70-4. https://doi.org/10.1007/s15010-002-3100-3 PMID: 12682810

31.Palumbo E, Scotto G, Faleo G, Cibelli DC, Saracino A, Angarano G. Prevalence of HBV-genotypes in immigrants affected by HBV-related chronic active hepatitis. Arq Gastroenterol. 2007;44(1):54-7. https://doi.org/10.1590/S0004-28032007000100012 PMID: 17639184

32. Maartens G, Celum C, Lewin SR. HIV infection: epidemiology, pathogenesis, treatment, and prevention. Lancet.2014;384(9939):258-71. https://doi.org/10.1016/S0140-6736(14)60164-1 PMID: 24907868

33. World Health Organization (WHO). Global Health Observatory (GHO) data. HIV/AIDS prevalence in sub-Saharan Africa. Geneva: WHO. [Accessed 22 Aug 2015]. Available from:http://www.who.int/gho/urban_health/outcomes/hiv_prevalence_text/en/

33. Federal Ministry of Health, Department of Public Health, National AIDS/STDs Control Programme. Technical report. 2010 national HIV sero-prevalence sentinel survey. Abuja: Federal Ministry of Health. [Accessed 1 Sep 2015]. Available from: http://www.nigeria-aids.org/documents/2010_National%20HIV%20Sero%20Prevalence%20Sentinel%20Survey.pdf

34. Negin J, Cumming RG. HIV infection in older adults in sub-Saharan Africa: extrapolating prevalence from existing data. Bull World Health Organ. 2010;88(11):847-53. doi: 10.2471/BLT.10.076349.

35. Chironna M, Germinario C, Lopalco PL, Quarto M, Barbuti S. HBV, HCV and HDV infections in Albanian refugees in Southern Italy (Apulia region). Epidemiol Infect. 2000;125(1):163-7. https://doi.org/10.1017/S0950268899004215 PMID: 11057972

36.Chironna M, Germinario C, Lopalco PL, Carrozzini F, Barbuti S, Quarto M. Prevalence rates of viral hepatitis infections in refugee Kurds from Iraq and Turkey. Infection. 2003;31(2):70-4. https://doi.org/10.1007/s15010-002-3100-3 PMID: 12682810