

Appendix:

How possible is the elimination of viral hepatitis? An analysis based on the global burden of disease from hepatitis B and C, 1990-2019.

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Table S 1. Global percent change of age-standardized prevalence and incidence of HBV and HCV, all age and both sex 1990 and 2019

Virus	SDI countries	Period	APC (Lower CI - upper CI)	AAPC (lower CI - upper CI)
Prevalence				
HBV	Global	1990-2000	-0,3* (-0,4,-0,3)	-1,3* (-1,3,-1,3)
		2000-2004	-2,0* (-2,2,-1,8)	
		2004-2019	-1,7* (-1,8,-1,7)	
	High SDI	1990-2019	-0,9* (-1,-0,9)	-0,9* (-1,-0,9)
	High-middle SDI	1990-2000	0,1* (0,0,2)	-1,1* (-1,2,-1,1)
		2000-2007	-2,3* (-2,5,-2,2)	
		2007-2019	-1,5* (-1,6,-1,4)	
	Middle-SDI	1990-2000	-0,8* (-0,9,-0,7)	-1,7* (-1,7,-1,7)
		2000-2007	-2,6* (-2,8,-2,4)	
		2007-2019	-1,9* (-2,-1,9)	
	Low-middle SDI	1990-2001	-0,5* (-0,5,-0,4)	-1,2* (-1,2,-1,2)
		2001-2011	-1,5* (-1,5,-1,4)	
		2011-2014	-2,3* (-2,4,-2)	
		2014-2019	-1,5* (-1,6,-1,2)	
	Low SDI	1990-1995	0,3* (0,1,0,6)	-1,3* (-1,3,-1,2)
		1995-2001	-0,5* (-0,7,-0,3)	
2001-2010		-1,6* (-1,7,-1,5)		
2010-2019		-2,3* (-2,4,-2,2)		
HCV	Global	1990-1995	-1,6* (-1,9,-1)	-0,4* (-0,5,-0,4)
		1995-2000	-2,4* (-3,1,-2,1)	
		2000-2004	-0,3 (-1,5,0,3)	
		2004-2010	0,6* (0,4,1,3)	
		2010-2014	-0,5* (-1,1,0)	
		2014-2019	1,5* (1,1,2)	
	High SDI	1990-1995	0,1 (-0,1,0,2)	0,4* (0,4,0,4)
		1995-2005	1,0* (1,1,1)	
		2005-2010	0 (-0,1,0,2)	
		2010-2015	-0,5* (-0,7,-0,4)	
		2015-2019	0,8* (0,6,0,9)	
	High-middle SDI	1990-1994	-1,7 (-2,6,0,1)	-0,5* (-0,6,-0,3)
		1994-2002	-2,9 (-4,0,5)	
		2002-2015	0 (-0,4,0,4)	
		2015-2019	4,2* (3,2,5,8)	
	Middle-SDI	1990-2001	-3,7* (-4,3,-3,3)	-0,9* (-1,1,-0,8)
		2001-2015	0,4 (-3,4,0,7)	
		2015-2019	2,2* (0,7,4,5)	
	Low-middle SDI	1990-1995	-0,7* (-0,8,-0,6)	-0,3* (-0,3,-0,2)
		1995-2000	-2,3* (-2,4,-2,2)	
		2000-2005	0,1 (-0,1,0,2)	
		2005-2010	0,8* (0,7,1,1)	
		2010-2015	0,1 (-0,1,0,2)	
		2015-2019	0,7* (0,5,1)	
Low SDI	1990-1997	-0,3* (-0,4,-0,3)	-0,5* (-0,5,-0,5)	
	1997-2004	-0,2* (-0,3,-0,2)		
	2004-2010	-0,6* (-0,6,-0,5)		

Virus	SDI countries	Period	APC (Lower CI - upper CI)	AAPC (lower CI - upper CI)
		2010-2017	-1,1* (-1,1,-1,1)	
		2017-2019	0,3* (0,2,0,4)	
Incidence				
HBV	Global	1990-2000	-0,4* (-0,5,-0,4)	-1,4* (-1,5,-1,4)
		2000-2011	-1,7* (-1,7,-1,6)	
		2011-2019	-2,4* (-2,5,-2,3)	
	High	1990-2005	-1,2* (-1,2,-1,1)	-1,4* (-1,5,-1,4)
		2005-2015	-1,5* (-1,6,-1,4)	
		2015-2019	-2,2* (-2,7,-2)	
	High-middle	1990-2000	0,1* (0,1,0,2)	-1,7* (-1,7,-1,7)
		2000-2011	-2,2* (-2,2,-2,1)	
		2011-2019	-3,4* (-3,5,-3,3)	
	Middle	1990-2000	-0,9* (-1,-0,8)	-1,9* (-1,9,-1,9)
		2000-2012	-2,0* (-2,1,-1,9)	
		2012-2019	-3,1* (-3,2,-2,9)	
	Low-middle	1990-2000	-0,5* (-0,6,-0,5)	-1,2* (-1,2,-1,1)
		2000-2011	-1,3* (-1,4,-1)	
		2011-2014	-2,0* (-2,2,-1,3)	
		2014-2019	-1,5* (-1,7,-1,2)	
	Low	1990-1996	0,1 (0,0,3)	-1,2* (-1,2,-1,1)
		1996-2001	-0,5* (-0,8,-0,3)	
2001-2011		-1,6* (-1,6,-1,5)		
2011-2019		-2,0* (-2,1,-1,9)		
HCV	Global	1990-2000	-1,9* (-1,9,-1,9)	-0,6* (-0,6,-0,6)
		2000-2004	-0,4* (-0,5,-0,2)	
		2004-2010	0,3* (0,2,0,4)	
		2010-2015	-0,5* (-0,6,-0,4)	
		2015-2019	0,8* (0,7,0,9)	
	High	1990-1995	0 (-0,1,0,1)	0,3* (0,3,0,3)
		1995-1999	1,0* (0,5,1,1)	
		1999-2003	0,5* (0,3,0,8)	
		2003-2010	0,3* (0,1,0,3)	
		2010-2015	-0,1* (-0,3,-0,1)	
		2015-2019	0,5* (0,4,0,7)	
	High-middle	1990-2000	-3,3* (-3,5,-3,1)	-1,1* (-1,1,-1)
		2000-2004	-1,7* (-2,5,-0,8)	
		2004-2015	-0,2* (-0,3,0)	
		2015-2019	2,8* (2,3,3,6)	
	Middle	1990-2000	-3,7* (-3,8,-3,5)	-1,0* (-1,1,-1)
		2000-2004	-0,7* (-1,5,-0,3)	
		2004-2010	0,7* (0,5,1,4)	
		2010-2014	-0,5* (-1,2,-0,1)	
		2014-2019	1,6* (1,2,2)	
	Low-middle	1990-1995	-1,1* (-1,2,-1)	-0,8* (-0,8,-0,8)
		1995-2000	-2,4* (-2,5,-2,3)	
		2000-2003	-0,5* (-0,6,-0,3)	
		2003-2011	-0,1 (-0,1,0,1)	
2011-2017		-0,6* (-0,8,-0,5)		
2017-2019		0 (-0,4,0,2)		
Low	1990-2004	-0,2* (-0,2,-0,2)	-0,7* (-0,7,-0,7)	
	2004-2008	-0,7* (-0,8,-0,6)		
	2008-2011	-1,1* (-1,2,-1)		
	2011-2017	-1,6* (-1,6,-1,5)		
	2017-2019	-0,3* (-0,4,-0,2)		

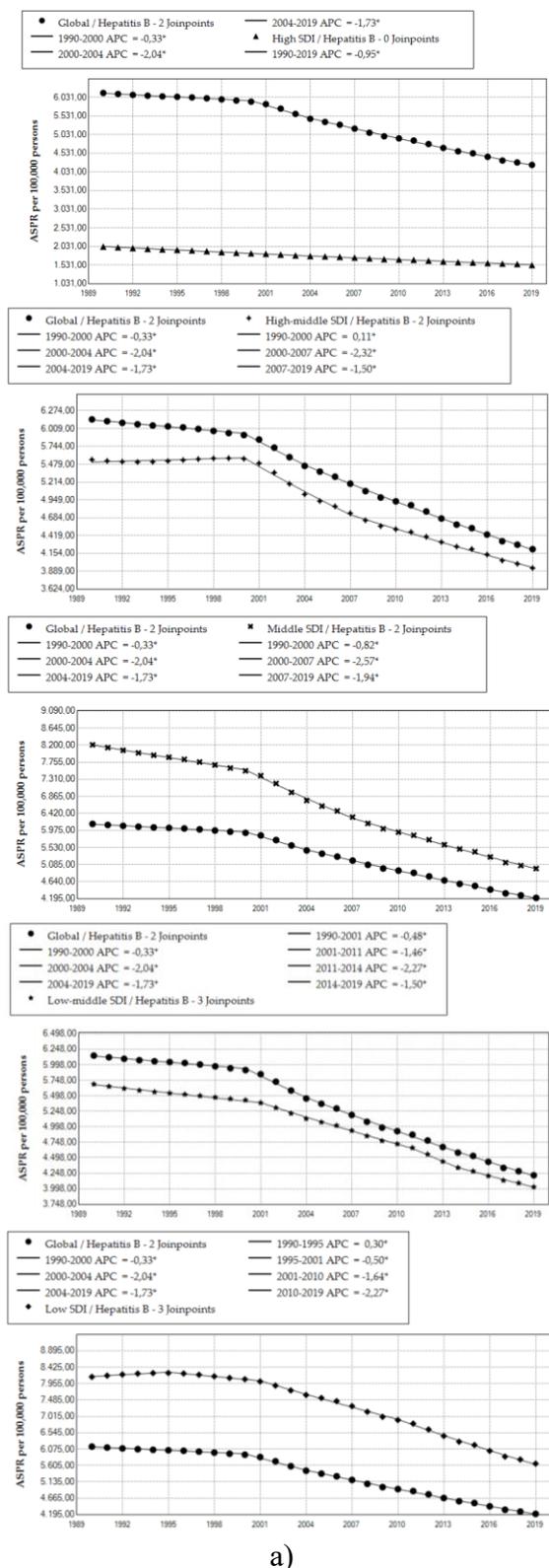
* Indicates that the APC or AAPC is significantly different of zero at the alpha = 0,05 level

Table S 2. Annual percent change of ASMR of HBV and HCV, all age and both sex, global and in countries grouped by SDI. 1990 to 2019

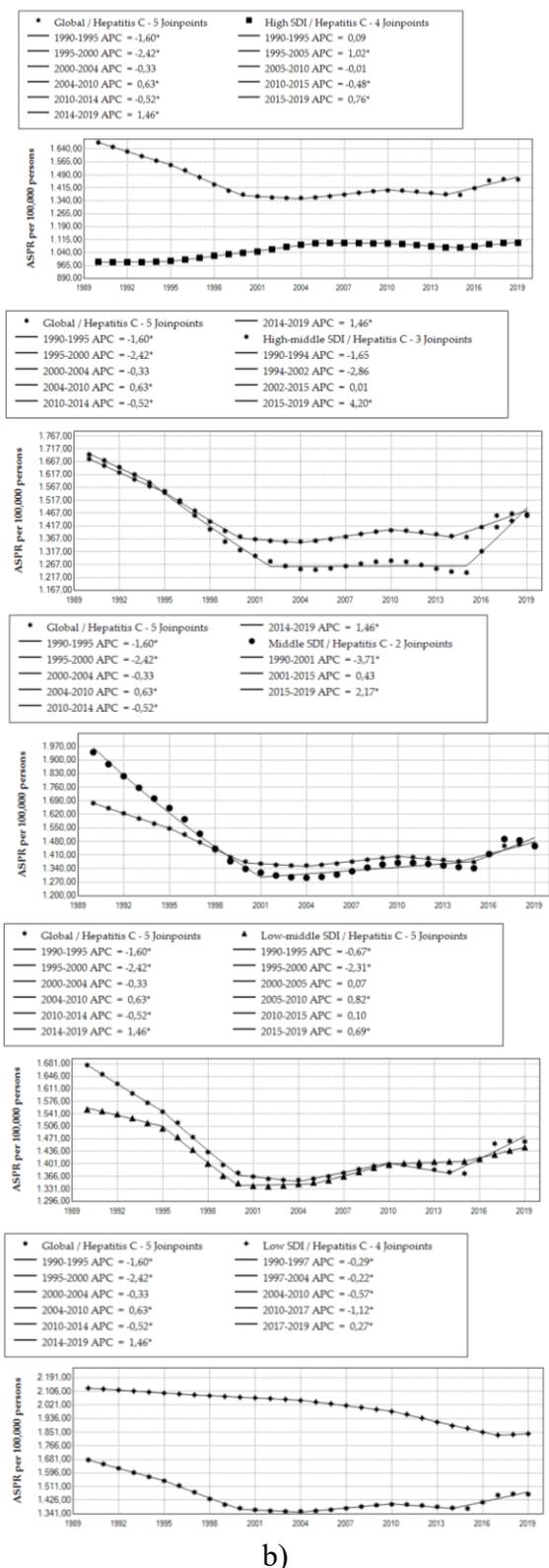
Hepatitis	SDI	Period	APC (lower CI - upper CI)	AAPC (lower CI - upper CI)
HCV	Global	1990-1995	1.1* (1.0,1.2)	0.3* (0.3,0.3)
		1995-1999	0.2* (0.0,0.4)	
		1999-2004	-0.4* (-0.7,-0.3)	
		2004-2014	0.1* (0.0,0.1)	
		2014-2019	1.0* (0.9,1.2)	
	High	1990-1995	3.0* (2.8,3.3)	1.2* (1.2,1.3)
		1995-1999	2.5* (1.2,2.7)	
		1999-2004	0.9* (0.4,1.1)	
		2004-2014	0.2* (0.1,0.3)	
		2014-2019	0.9* (0.7,1.1)	
	High-middle	1990-1995	1.6* (1.1,2.2)	0.1* (0.0,0.1)
		1995-2012	-0.6* (-0.7,-0.6)	
		2012-2019	0.6* (0.3,1.0)	
	Middle	1990-1995	0.5* (0.4,0.7)	0.4* (0.4,0.4)
		1995-1999	-0.3* (-0.4,-0.1)	
		1999-2002	-1.2* (-1.4,-0.9)	
		2002-2006	-0.2 (-0.3,0.1)	
		2006-2013	0.9* (0.8,1.0)	
		2013-2019	1.4* (1.3,1.5)	
	Low-middle	1990-1998	0.5* (0.4,0.6)	0.5* (0.4,0.5)
		1998-2004	-0.1 (-0.5,0.1)	
2004-2011		0.6* (0.5,0.9)		
2011-2014		-0.9* (-1.2,-0.5)		
2014-2019		1.6* (1.5,1.9)		
Low	1990-1999	-0.7* (-0.8,-0.6)	-0.9* (-0.9,-0.8)	
	1999-2005	-1.0* (-1.2,-0.9)		
	2005-2015	-1.4* (-1.5,-1.4)		
	2015-2019	0.6* (0.5,0.7)		
HBV	Global	1990-1996	0.9* (0.7,1.1)	-1.1* (-1.1,-1.0)
		1996-2000	-0.7* (-1.0,-0.4)	
		2000-2004	-4.3* (-4.5,-4.2)	
		2004-2017	-1.3* (-1.4,-1.3)	
		2017-2019	0.8* (0.0,1.2)	
	High	1990-1993	-0.6* (-1.3,-0.1)	-0.3* (-0.4,-0.3)

Hepatitis	SDI	Period	APC (lower CI - upper CI)	AAPC (lower CI - upper CI)
		1993-1996	0.8* (0.0,2.0)	
		1996-2000	2.0 (-1.8,2.4)	
		2000-2010	-1.8* (-1.9,-1.5)	
		2010-2016	-0.8* (-1.0,-0.5)	
		2016-2019	1.4* (1.0,2.2)	
	High-middle	1990-1995	2.8* (2.4,3.2)	-1.7* (-1.8,-1.7)
		1995-2000	-1.0* (-1.3,-0.6)	
		2000-2004	-6.7* (-7.2,-6.3)	
		2004-2008	-1.7* (-2.2,-1.0)	
		2008-2014	-4.4* (-4.8,-4.2)	
		2014-2019	0.5* (0.1,0.8)	
	Middel	1990-1996	0.9* (0.7,1.1)	-1.2* (-1.2,-1.1)
		1996-2000	-1.3* (-1.6,-0.8)	
		2000-2004	-6.2* (-6.4,-5.9)	
		2004-2007	-1.6* (-2.0,-1.2)	
		2007-2014	-0.7* (-1.0,-0.4)	
		2014-2019	0.2 (-0.0,0.8)	
	Low-middel	1990-2000	0.1 (-0.0,0.4)	-0.5* (-0.6,-0.5)
		2000-2004	-1.5 (-2.1,0.0)	
		2004-2014	-0.3 (-1.2,0.3)	
2014-2017		-2.7* (-3.3,-0.3)		
2017-2019		0.1 (-1.7,1.1)		
Low	1990-2005	-0.7* (-0.7,-0.6)	-1.4* (-1.4,-1.4)	
	2005-2010	-2.4* (-2.7,-0.8)		
	2010-2013	-1.9* (-2.2,-1.7)		
	2013-2017	-2.7* (-3.1,-2.6)		
	2017-2019	-1.0* (-1.5,-0.5)		

* Indicates that the APC or AAPC is significantly different of zero at the alpha = 0,05 level

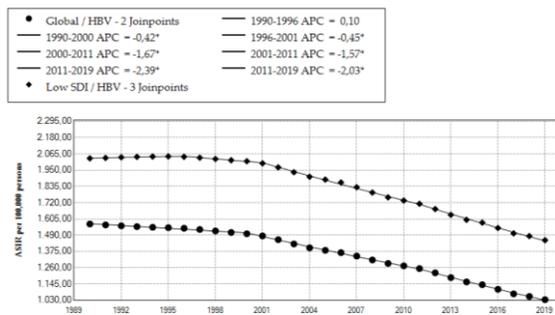
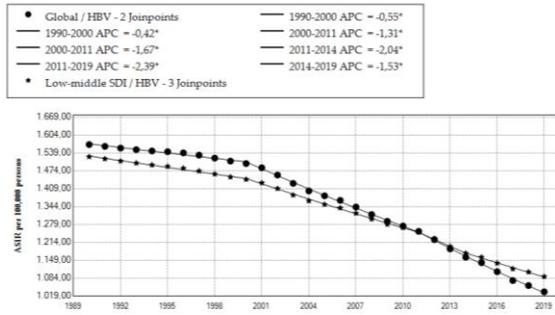
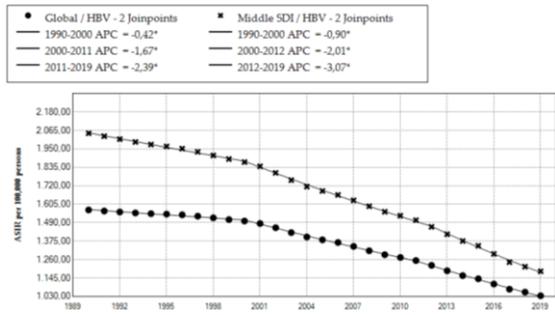
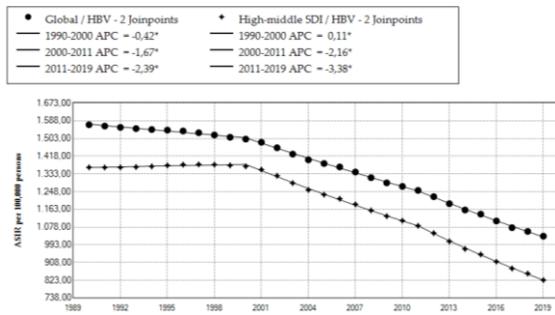
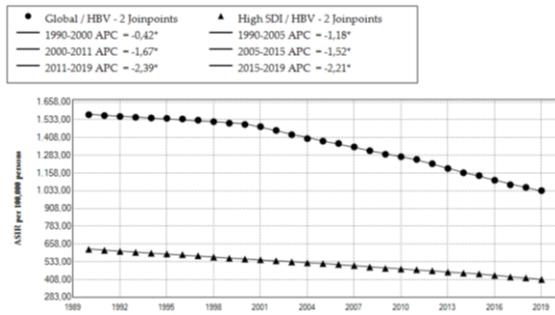


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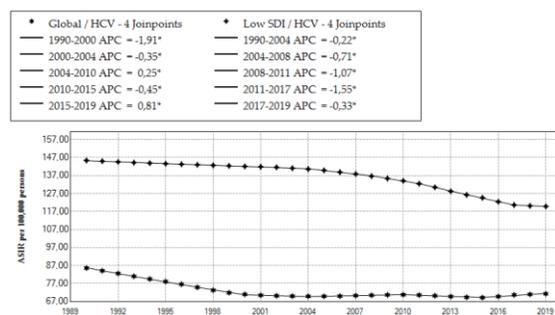
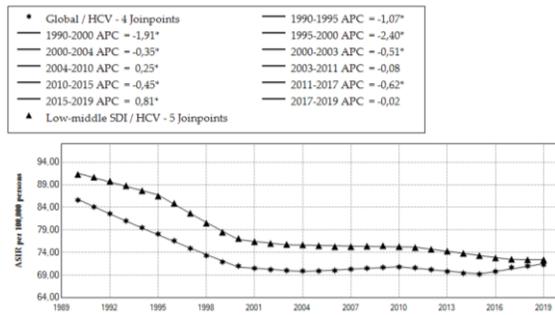
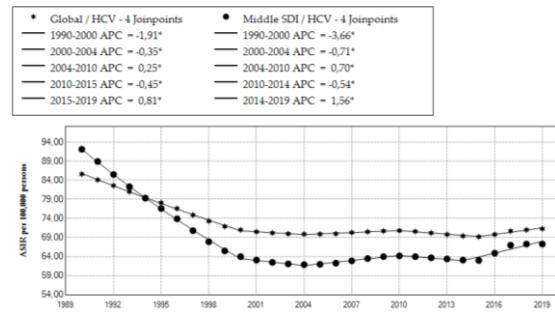
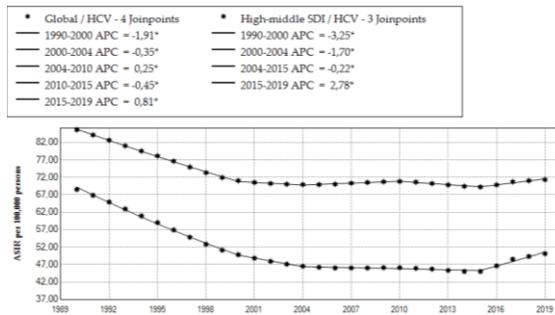
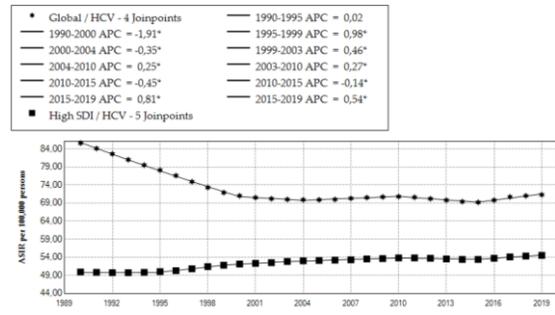


b)

Figure S 1. ASFR trends Global and countries grouped by SDI in viral hepatitis all ages and both sexes 1990 – 2019: (a) Trends in HBV prevalence; (b) Trends in HCV prevalence

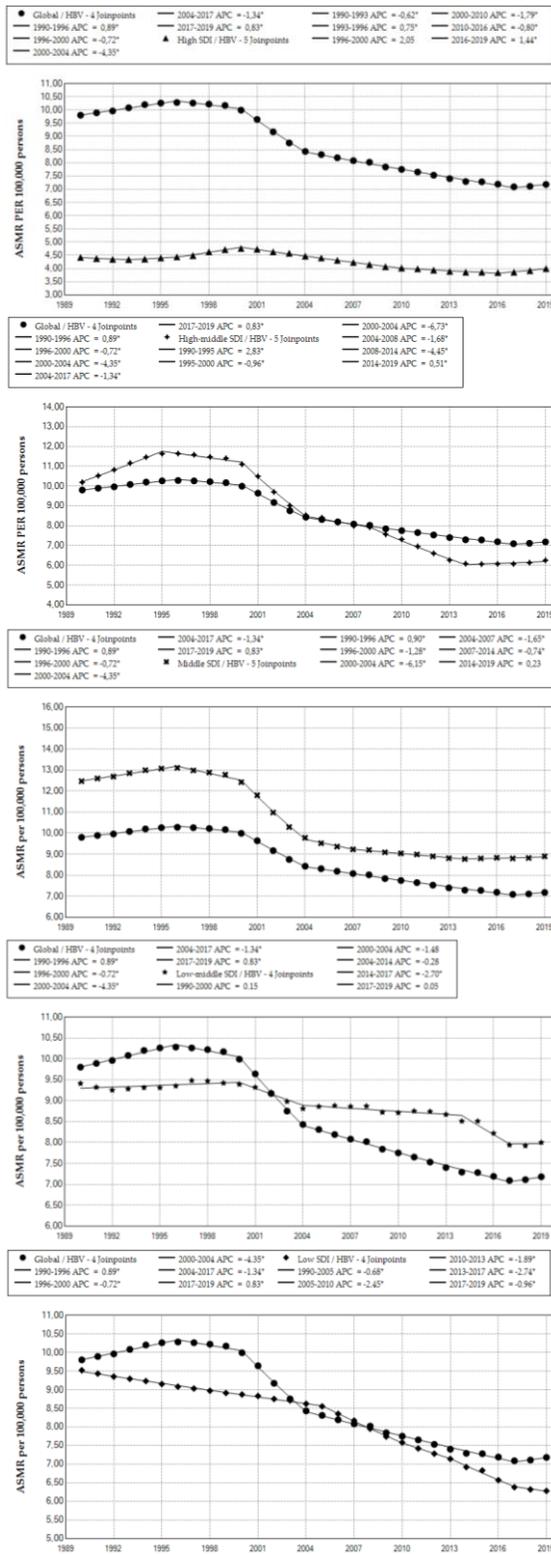


a)

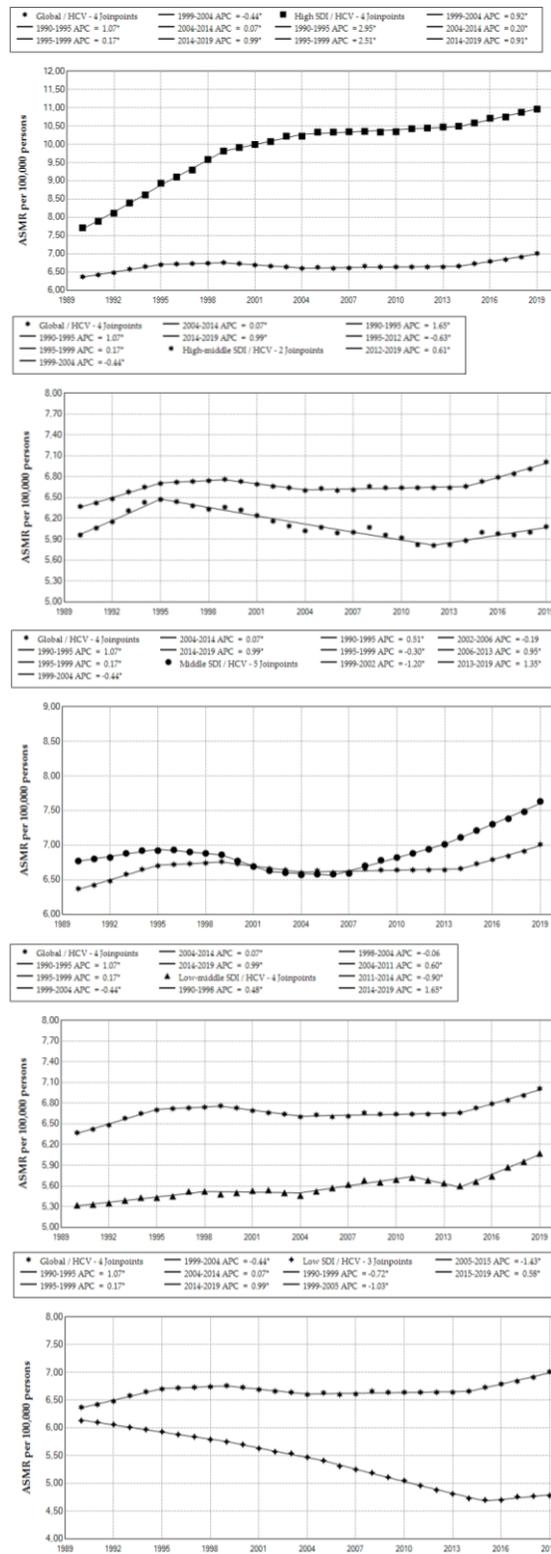


b)

Figure S 2. ASIR trends Global and countries grouped by SDI in viral hepatitis all ages and both sexes 1990 – 2019: (a) Trends in HBV incidence; (b) Trends in HCV incidence.



a)



b)

Figure S 3. ASMR trends Global and countries grouped by SDI in viral hepatitis all ages and both sexes 1990 – 2019: (a) Trends in HBV mortality; (b) Trends in HCV mortality.

