

# Trends of Reported Cases of Hepatitis B Virus Infection, Kingdom of Saudi Arabia, 2009 – 2013

Homoud S Algarni<sup>1</sup>, Ziad A Memish<sup>1,2</sup>, Abdullah M Assiri<sup>1,2</sup>, Raffat F Alhakeem<sup>1</sup>, Scott JN McNabb<sup>2</sup>

1. Ministry of Health, Kingdom of Saudi Arabia 2. Hubert Department of Global Health, Emory University, Rollins School of Public Health, Atlanta, GA, USA

## Introduction

- Hepatitis B virus (HBV) infection is widespread globally and a serious public health threat
- Understanding distribution of HBV is important to policymakers for evaluating public health surveillance and developing prevention and control policies

## Objectives

- Evaluate trends of HBV in KSA from 2009 to 2013
- Analyze HBV incidence rate (IR) by gender and nationality
- Analyze HBV IR by region

## Methods

- Laboratory-confirmed HBV cases reported were analyzed by year, gender, nationality, and region
- Cases were lab confirmed by hepatitis B surface antigen (HBsAg) positive or anti-hepatitis B core immunoglobulin M (anti-HBc-IgM) positive results



Figure 1. Administrative Regions of Saudi Arabia

## Results

- Total of 23,236 cases of HBV infection reported to the KSA MoH from 2009 – 2013
- In 2009, HBV infection IR was 19.3 (95% CI = 18.8, 19.9) per 100,000 population
- The IR significantly decreased to 14.7 (95% CI = 14.2, 15.1) in 2013
- IR was consistently greater among males than females (in 2013, 16.7 versus 12.2)
- Saudi citizens had 2- to 3-fold greater IR than non-Saudis (in 2013, 18.7 versus 5.9) over study period
- Large variations among HBV infection IRs existed across regions, with Tabouk having the highest

Table 1. Reported cases of hepatitis B virus infection and incidence rates, Kingdom of Saudi Arabia, 2009 – 2013

Year	# Cases (IR <sup>o</sup> )	95% CI*
2009	5020 (19.3)	18.8 – 19.9
2010	4854 (18)	17.5 – 18.5
2011	4494 (16.1)	15.6 – 16.5
2012	4609 (15.9)	15.4 – 16.4
2013	4259 (14.7)	14.2 – 15.1
Total	23,236	

Table 2. Incidence rates of reported cases of hepatitis B virus infection, by year and gender, Kingdom of Saudi Arabia, 2009 – 2013

Year	Male		Female	
	# Cases (IR <sup>o</sup> )	95%CI*	# Cases (IR <sup>o</sup> )	95%CI*
2009	2905 (19.4)	18.7 – 20.1	2115 (19.2)	18.4 – 20.1
2010	2816 (18.8)	18.1 – 9.5	2038 (18.5)	17.7 – 19.4
2011	2614 (16.3)	15.7 – 17.0	1880 (15.7)	15 – 16.4
2012	2758 (17.2)	16.6 – 17.9	1851 (15.4)	14.7 – 16.1
2013	2677 (16.7)	16.1 – 17.4	1582 (12.2)	11.6 – 12.8
Total	13,770		9,466	

Table 3. Reported cases of hepatitis B virus infection and incidence rates, by year and nationality, Kingdom of Saudi Arabia, 2009 – 2013

Year	Saudi		Non-Saudi	
	# Cases (IR <sup>o</sup> )	95%CI*	# Cases (IR <sup>o</sup> )	95%CI*
2009	4361 (24.2)	23.5 – 25	659 (8.2)	7.6 – 8.9
2010	4115 (22.9)	22.2 – 23.6	739 (9.2)	8.6 – 9.9
2011	3758 (19.8)	19.2 – 20.4	736 (9.2)	8.6 – 9.9
2012	3899 (20.5)	19.9 – 21.2	710 (7.9)	7.3 – 8.5
2013	3731 (18.7)	18.1 – 19.3	528 (5.9)	5.4 – 6.4
Total	19,864		3,372	

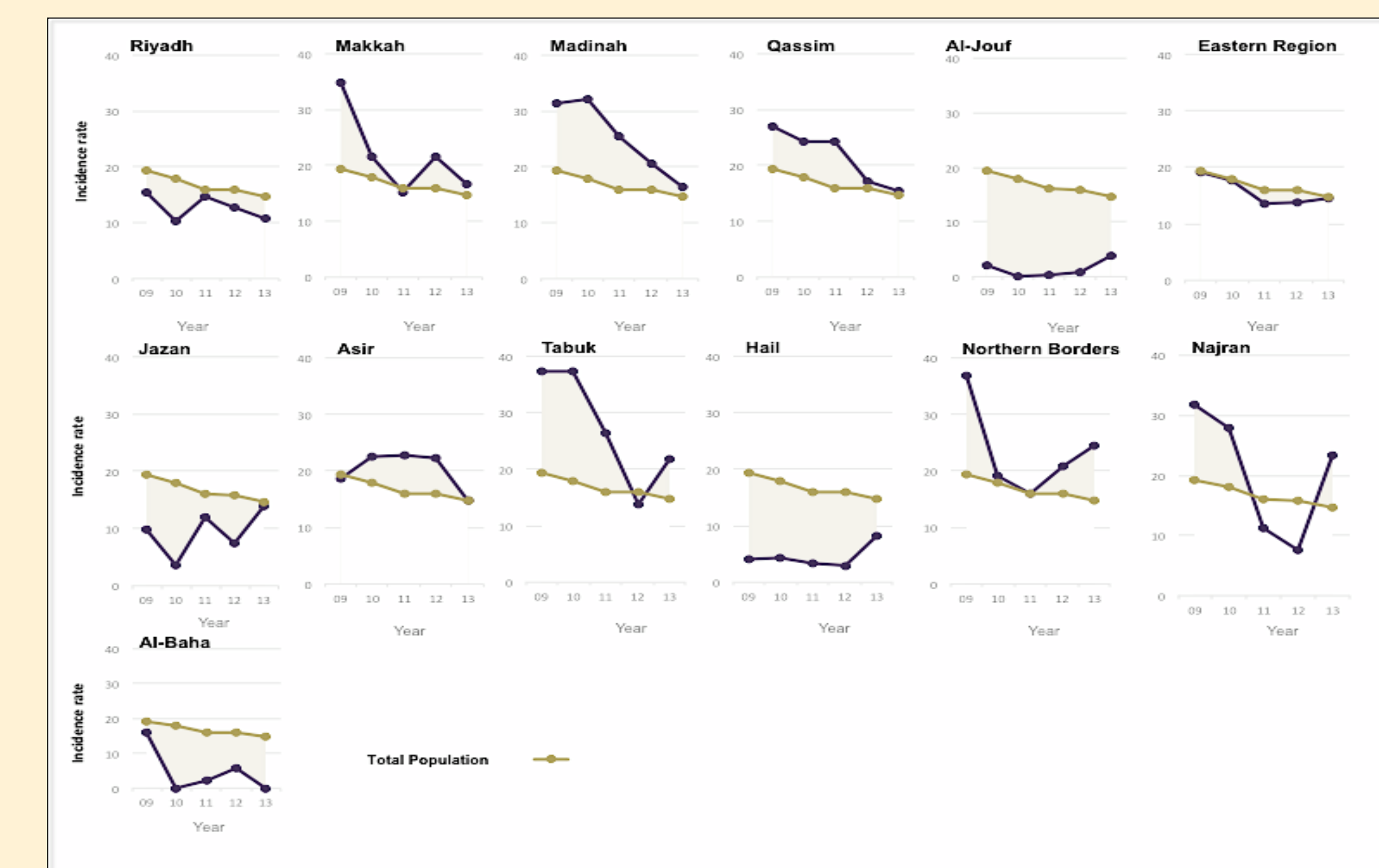


Figure 2. A Comparison of Trends of Incidence Rates of Reported Cases of Hepatitis B Infection to the Total Population, by Region, Kingdom of Saudi Arabia, 2009 – 2013

## Conclusion

- Despite significant decrease in IRs over the 5-year period, HBV infection remains a major public health problem
- The HBV situation in KSA should be source of concern to all sectors involved in public health

## Recommendations

- Continuous monitoring and evaluation of the disease's observation protocols and prevention strategies
- Implementation of various strategies and preventive measures to control HBV infection
- Execution of well-designed research program in different regions of KSA

## Acknowledgments

- I would like to thank the Ministry of Health in KSA for providing me with the data, and for their continuous help and support.