



MINISTRY
OF HEALTH

MALDIVES HEALTH STATISTICS 2014





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Maldives Health Statistics Book Development Team appreciates the data contribution from different department and divisions (*especially different programs of Health Protection Agency and National Bureau of Statistics*).

FOREWORD

Health statistics in the form of an annual publication aims to provide factual information on performance of health systems. Every effort was made to present accurate data on the health services provided at both public and private health care facilities. The statistics supports the formulation of evidence-based health policies and strategies. It also assists in monitoring achievement of targets set in our national plans and international commitments such as the Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs). Furthermore, it is essential that high quality data are collected and that the regular data flow from different centers to the ministry is ensured. This is vital for close monitoring of the current health status of the country so that appropriate measures can be taken to bring about necessary health reforms.

The Maldives Health Statistics 2014 is the eighth publication of this series. The information in the publication mainly represents data from January to December 2014 with comparable figures for the past 3- 10 years.

For bringing out this publication, I sincerely acknowledge the hard work of staff working at the Health Information and Research Section of Policy Planning and International Health Division of Ministry of Health. I also thank all the staff who were involved in providing the statistics from different departments, divisions of Ministry of Health including Health Protection Agency and Maldivian Blood Services. I would also like to thank the staff in health care facilities that worked to routinely send monthly reports to Ministry of Health and also to National Bureau of Statistics for their contribution to this publication.

I believe that policymakers, researchers and students will use this publication extensively and that it remains a useful reference document.

Abdullah Nazim Ibrahim
Minister of Health

ACKNOWLEDGEMENTS

The Maldives Health Statistics 2014 was prepared by the Health Information and Research Section of the Ministry of Health, Maldives. This publication was made possible through valuable contribution of the required information from several concerned authorities and stakeholders. This list includes National Bureau of Statistics (NBS), public and private health care institutions, departments and divisions of Ministry of Health including Health Protection Agency (HPA) and Maldivian Blood Services (MBS).

Data from health facilities were based on monthly reports compiled with support from various staff from these facilities. I sincerely acknowledge the continued assistance and dedication extended by the responsible staff assisting in this process. I also extend my sincere gratitude to the staff of NBS for their sustained cooperation in providing the demographic data required for this publication.

The information required for this publication was also obtained from the National Vital Registration System (VRS) managed by the Department of National Registration (DNR). I gratefully acknowledge the support provided by VRS staff at DNR. Additionally, my sincere appreciation goes to the hardworking staff of Health Information and Research Section of Policy Planning and International Health Division of Ministry of Health for compiling the data, and making this publication possible.

Ms. Khadeeja Abdul Samad Abdullah
Permanent Secretary
Ministry of Health

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EXECUTIVE SUMMARY

The eighth series of Maldives Health Statistics book is published with the main objective of providing easy access to up-to-date comprehensive statistical information on various aspects of health. Apart from prologue, this book contains 5 key chapters; Natality, Morbidity, Mortality, Public health, Health service delivery and human resource. A summary of the key areas discussed in each chapter is provided below:

PROLOGUE – MALDIVES

- This section provides a brief overview of Maldives including its geography, location and population.
- In terms of the geography and location of Maldives, it is important to note that Maldives is an archipelagic South Asian country located in the Indian Ocean. Maldives consists of 26 natural atolls which are divided into 20 atolls for administrative purposes. A total of 1,192 islands are distributed within these atolls. However, only 15.8% of these islands are inhabited.
- A total of 344,023 Maldivians (excluding foreigners) were enumerated in Census 2014. A majority (98.4%) of these Maldivians have been residing or intends to reside in Maldives for one or more years.
- The population of Maldives consists of slightly more males than females with around 103 males for every 100 females. A similar trend of slightly more males than females can be observed in the previous censuses conducted since 1990.
- Overall, the resident Maldivian population could be considered as a young population since 47.5% of the population is below the age of 25 years.

CHAPTER 1 – NATALITY

- Increase in life expectancy at birth can be observed for both males and females when compared to 1977 figures:
 - 50.7% increase for life expectancy at birth for males in 2014
 - 62.6% increase for life expectancy at birth for females in 2014
- The life expectancy at birth for females are higher than males in 2014:
 - life expectancy at birth for a male = 73.1 years
 - life expectancy at birth for a female = 74.8 years

- The general fertility rate for Maldives in 2014 is 81 live births per 1000 women aged 15-49 years. The total fertility rate for Maldives in 2014 was 2.46 while the gross reproduction rate stands at 1.12 in 2014. These three measures of fertility had declined significantly when compared to 1990 figures. At present, these three measures of fertility are higher for atolls when compared to Male'.
- The crude birth rate has been fairly stable for the past 10 years. In 2014, the crude birth rate for the total population was 21 live births per 1000 population.
- In total 7283 births were observed for Maldives in 2014. Over 99 percent of these births were live births while less than 1 percent of these births were stillbirths. A similar trend can be observed in the past 5 years.
- Almost 2 in 3 live births in 2014 occurred in the capital city of Maldives (i.e. Male'). This trend has been similar over the past 5 years.
- The predominant mode of delivery observed for Maldives in 2014 was normal delivery (51.4 % of all births) and caesarean (41.1% of all births). Not much difference can be observed for the mode of delivery for stillbirths and live births. Furthermore, in most types of public health facilities (except regional hospitals) normal deliveries precede caesareans.
- On average, regardless of sex and type of birth, a baby born in 2014 in Maldives had a normal birth weight. Improvements in mean birth weight have been observed over the past three years, particularly in mean birth weight of stillbirths which had shifted from low birth weight in 2013 to normal birth weight in 2014. Also, there is no significant difference between the mean birth weight of births that had occurred in Male' and atolls.
- More than 8 in 10 babies are born in Maldives with normal birth weight. Almost 1 in 10 babies are born in Maldives with low birth weight. This has been similar over the past 5 years.
- Over the past 10 years, the percentage of live births given by mothers aged below the age of 20 years have almost halved from 5.2% in 2005 to 2.8% in 2014.
- In 2014, around 85% of live births in Maldives occurred to mothers aged between 20 to 34 years.
- Almost 96% of births have been attended by a skilled health professional in 2014.
- In 2014, around 69% births have been attended by doctors while less than 1% of births have been attended by traditional birth attendants.

CHAPTER 2 – MORBIDITY

- This chapter is limited to discussion around morbidities related to some specific diseases and conditions which had caused or continues to cause significant impact on the health and wellbeing of Maldivians in the recent years. This includes dengue, diarrhoea, chikungunya, tuberculosis, leprosy, HIV, syphilis, sexually transmitted infections (by symptomatic diagnosis) and anaemia.
- Dengue seems to be endemic in Maldives with cases being reported throughout the year. In 2014, a total of 824 cases of dengue were reported out of which around 6% of these cases were reported to be developed in to more severe forms of dengue such as dengue haemorrhagic fever and dengue shock syndrome.
- Diarrhoea cases declined from 23,199 cases in 2005 to 12,120 cases in 2007. On the other hand, more fluctuations can be observed for diarrhoea incidence rate over the past 10 years. The highest incidence rate of 79.06 new cases of diarrhoea per 1000 population was recorded in 2005. The lowest incidence rates of 40.54 per 1000 population were recorded in the years 2007 and 2009.
- In 2013 and 2014, no cases of Chikungunya have been reported in Maldives.

- Over the past 10 years, the total number of tuberculosis cases under treatment had fluctuated slightly from 80 cases in 2005 to 53 cases in 2014. The number of tuberculosis cases under treatment peaked at 95 cases in 2007. Apart from this, the incidence and prevalence rate for both sputum positive and sputum negative tuberculosis has been relatively low in Maldives.
- Maldives have maintained a relatively low prevalence and incidence rate of leprosy which mostly fluctuated from 0.04 to 0.02 cases per 1000 population in the past decade.
- Over the past 10 years, the number of new HIV positive cases detected in Maldives has been significantly low among Maldivians. In 2014, 2 new HIV positive cases were observed among Maldivians. Furthermore, majority of HIV positive new cases detected in Maldives between 2005 and 2014 are from expatriates. Additionally, in 2014 alone, 31,548 individuals were screened for HIV under the National AIDS Program.
- Over the past 5 years, 7 Syphilis cases have been detected during Ante-Natal Screening whereas only 1 Syphilis positive case has been detected among blood donors during the same time period.
- In 2014, Sexually Transmitted Infection [STI] related symptoms such as urethral discharge and genital ulcers are more commonly reported among females with a significant cases of these symptoms being female vaginal discharge (n=952).
- The findings of Multiple Indicator Cluster Survey conducted in 2011 showed that 51.3% of women of reproductive age in Maldives suffered from some degree of anaemia. On the contrary, National Micronutrient Survey conducted in 2007 showed that close to 85 % of women within reproductive age had normal hemoglobin levels.

CHAPTER 3 – MORTALITY

- Over the past decade, the total Crude Death Rate had fluctuated slightly between 3 and 4 deaths per 1000 population.
- More males (58.1%) than females (41.9%) had died in 2014. A similar trend can be observed over the past 10 years.
- Over 80 percent of deaths in Maldives are concentrated among elderly (50 years and over).
- Over 8 in 10 under 5 deaths in Maldives in 2014 occurred among infants below 1 years.
- With slight fluctuations, under 5 mortality rate for the total population had declined from 16 deaths per 1000 live births in 2005 to 11 deaths per 1000 live births in 2014.
- Sex comparisons showed that under 5 mortality rate declined from 14 deaths per 1000 live births to 11 deaths per 1000 live births for males and from 17 deaths per 1000 live births to 10 deaths per 1000 live births for females over the past decade.
- The difference between under 5 mortality rate for atolls and Male' have also reduced over the past 10 years. At present atolls have a lower under 5 mortality rate (8 deaths per 1000 live births) than Male' (10 deaths per 1000 live births).
- Infant Mortality Rate have also declined, with slight fluctuations, over the past decade from 12 deaths per 1000 live births in 2005 to 9 deaths per 1000 live births in 2014.
- In general, the Infant Mortality Rates tends to be slightly higher for males than females in the last 10 years.
- Since 2008, atolls showed a lower Infant Mortality Rate than Male'. In 2014, atolls had an Infant Mortality Rate of 5 deaths per 1000 live births which is more than half the rate observed in 2005. The infant mortality rate for Male' in 2014 was 9 deaths per 1000 live births.

- Neonatal Mortality Rate had also decreased from 8.31 per 1000 livebirths in 2005 to 5.38 per 1000 livebirths in 2014.
- Over the past 5 years, neonatal mortality rate tends to be higher for Male' when compared to other atolls.
- A significant majority of neonatal deaths are early neonatal deaths and in 2014 alone, early neonatal death rate was around seven times higher than late neonatal death rate.
- Maternal Mortality Ratio [MMR] had also declined from 72 deaths per 100,000 live births in 2005 to 41 deaths per 100,000 live births in 2014. However, significant fluctuations for the MMR can be observed for the past 10 years as even one single death can have a large impact on the MMR figures due to the small population of the Maldives.
- In 2014, the Age Specific Mortality Rate is significantly high for older age groups indicating that more deaths occurs among older age groups of the population. A similar trend can be observed for the past 3 years.
- The predominant cause of death in 2014 was cardiovascular conditions and cerebrovascular conditions such as heart diseases, cerebrovascular diseases and hypertensive diseases which claimed 41.2 percent (n=474) of deaths in 2014.
- Although with fluctuations, deaths among thalassaemics had increased from 1 death in 2005 to 11 deaths in 2014. Thalassaemic deaths seems to be concentrated more on older children (10-19 year olds) compared to under 10 year olds.

CHAPTER 4 – PUBLIC HEALTH

- This chapter will discuss about some of the public health concerns for Maldives. It will also provide some data on preventive measures and health promotion initiatives that are currently being undertaken within Maldives.

This will include immunization coverage, exclusive breastfeeding, malnutrition among children, vitamin A supplementation, deworming, contraceptive prevalence rate and unmet need for family planning.

- Over the past decade, Maldives had a relatively high immunization coverage rate ranging from 98% to 100% for all essential vaccinations covered under national schedule for immunization.
- According to the Maldives Demographic and Health Survey [MDHS] 2009, 48 percent of the youngest children under 3 years who were living with their mothers were exclusive breastfed up to first 6 months of their age in Maldives.
- The findings of MDHS 2009 also showed that 18.9 percent of under 5 children were stunted while 6 percent of under 5 children were severely stunted. 17.3 percent of under 5 children were underweight and 3.3 percent of under 5 children were severely underweight. 10.6 percent under 5 children were wasted while 2.5 percent under 5 children were severely wasted. A further 2.2 percent children aged below 5 years were overweight.
- Almost 1 in 2 children aged 6-59 months in Maldives had received a Vitamin A supplementation over the past 6 months preceding the data collection period for MDHS 2009.
- Findings of MDHS 2009 indicated that 68.6 percent of children aged 6-59 years of age have been given deworming medication over the past 6 months preceding the survey.
- Overall a 7.3 % decline in Contraceptive Prevalence Rate for any method was observed from Reproductive Health [RH] survey in 1999 (42 percent) to MDHS in 2009 (34.7 percent).
- According to MDHS 2009, 28.1 percent of married women aged 15-49 years had an unmet need for family planning either for spacing or for limiting purposes.

CHAPTER 5 – HEALTH SERVICE DELIVERY AND HUMAN RESOURCES

- From 1st January 2014 to 31st December 2014, a total of 905,653 outpatient visits and 30,019 inpatient visits were made to public hospitals located throughout Maldives.
- Almost 4 in 9 outpatient visits were made to a public hospital located in Kaafu atoll (78.30% of these visits were made to IGMH) while almost 5 in 9 outpatient visits were made to a public hospital located in atolls other than Kaafu atoll.
- Similarly, almost 4 in 9 inpatient visits were made to a public hospital located in Kaafu atoll (94.00 % of these visits were made to IGMH) while almost 5 in 9 inpatient visits were made to a public hospital located in atolls other than Kaafu atoll.
- In 2014, a cumulative total of 3,828 medical staff were reported to be working in all public health facilities in Maldives. More than half (56.90%) of these staff were nurses while 18.39% of the medical staff were doctors.
- Over 70% of the medical staff were females. Furthermore, majority of medical staff (66.38%) were working in Atolls when compared to Male' (33.62%).

PROLOGUE



MALDIVES

WHO ARE WE?

GEOGRAPHY AND LOCATION

QUICK FACTS

Total Area of Maldives ¹	90,000km²
Land Area ¹	298km²
Coastline ¹	644 km
Total Number of Islands ²	1192
Total Number of Inhabited Islands ^{2,3}	188
Total Number of Uninhabited Islands ²	1004
Total Number of Administrative Atolls ^{1,3}	20

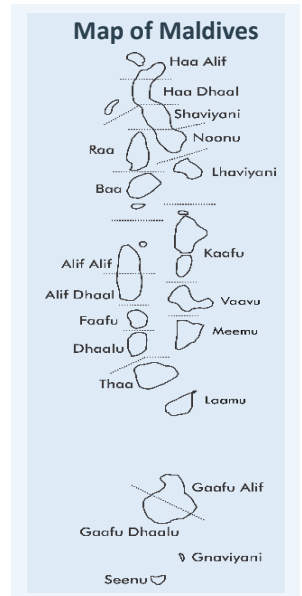
Maldives is an archipelago located in the Indian Ocean¹.

Maldives consists of 26 natural atolls¹ which are divided into 20 atolls for administrative purposes^{1, 3}.

Maldives belongs to the South Asia Region¹.

Over 99% of the total area of Maldives comprises of sea while less than 1% of Maldives encompasses of land¹.

In 2014, only 15.8% of the total islands in Maldives were inhabited¹.



TOTAL MALDIVIAN POPULATION

2014 QUICK FACTS

Total Maldivian Population ³	344,023
Percentage of Maldivian Males ³	50.8%
Percentage of Maldivian Females ³	49.2%
Sex Ratio ³ (Number of males per 100 females)	103
Inter-censal Average Annual Growth Rate ³	1.65%

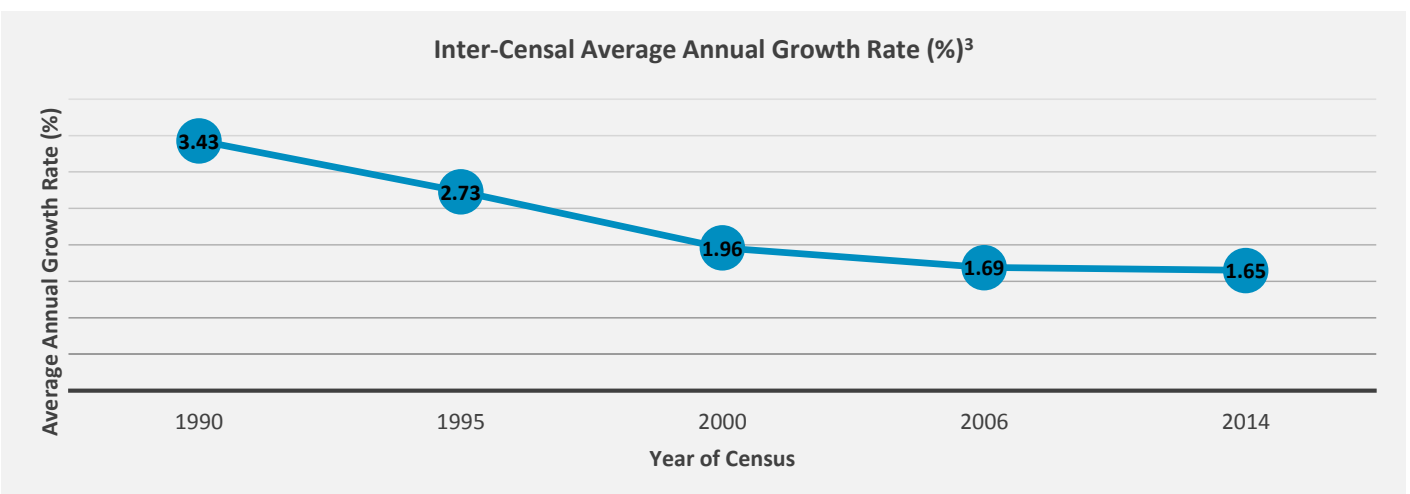
The total number of Maldivians enumerated in 2014 census conducted in Maldives was 344,023³. This excludes 63,637 foreigners enumerated in the same census.

The population of Maldives consists of slightly more males than females with around 103 males for every 100 females³. A similar trend of slightly more males than females can be observed in the previous censuses conducted since 1990³.

Percentage of Maldivian Population by Sex, 1990-2014³

Year/Sex	1990	1995	2000	2006	2014
Male	51.3	50.9	50.8	50.7	50.8
Female	48.7	49.1	49.2	49.3	49.2

Although, inter-censal increase in the size of the population has been observed during the past censuses, the inter-censal average annual growth rate had almost halved from 3.43% in 1990 to 1.65% in 2014³.



RESIDENT MALDIVIAN POPULATION

2014 QUICK FACTS

Total Maldivian Population ³	344,023
Resident Maldivian Population ³	338,434 (98.4%)
Non-Resident Maldivian Population ³	5,589 (1.6%)
Resident Maldivian Population aged below 15 years ³	93,478 (27.6%)
Resident Maldivian Population aged 15 - 64 years ³	228,619 (67.6%)
Resident Maldivian Youth Population ³ <i>(International Definition: 15-24 years)</i>	67,228 (19.9%)
Resident Maldivian Population aged below 25 years ³	160,706 (47.5%)
Resident Maldivian Population Aged 65 years and above ³	16,337 (4.8%)

DEFINITIONS

TOTAL MALDIVIAN POPULATION - The census 2014 defines the total Maldivian population as a sum of all usual resident Maldivians and non-resident Maldivians³.

RESIDENT MALDIVIAN POPULATION is defined in Census 2014³ as “Maldivians who have lived or intends to reside in Maldives for 1 year or more”.

NON-RESIDENT MALDIVIAN POPULATION is defined in Census 2014³ as “Maldivians who have lived or intends to reside abroad for 1 year or more”.

Almost half [47.5%] of the resident Maldivian population is aged below 25 years³.

The majority of Maldivians (98.4%) who were enumerated in Census 2014 resides or intends to reside in Maldives for 1 or more years³. Overall, this resident Maldivian population could be considered as a young population since 47.5 percent of the population is below the age of 25 years³.

SUMMARY TABLES

Table 0.1. Total Maldivian Population by Sex, 1990 -2014³

Census Year/ Sex Categories	1990	1995	2000	2006	2014
Total	213,215	244,814	270,101	298,968	344,023
Male	109,336	124,622	137,200	151,459	174,666
Female	103,879	120,192	132,901	147,509	169,357
% Male	51.3	50.9	50.8	50.7	50.8
% Female	48.7	49.1	49.2	49.3	49.2

Table 0.2. Inter- Censal Average Annual Growth Rates, 1990- 2014³

Census Year/	1990	1995	2000	2006	2014
Average Annual Growth Rate (%)	3.43	2.73	1.96	1.69	1.65

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CHAPTER ONE



NATALITY

”

بَارَكَ اللهُ لَكَ فِي الْمَوْهُوبِ لَكَ، وَشَكَرْتَ الْوَاهِبَ، وَبَلَغَ أَشُدَّهُ، وَرَزَقْتَ بِرَّهُ

“

Imam al-Nawawi in his *Al-Adhkar* (p: 349) and Imam Ibn al-Qayyim in his *Tuhfat al-Mawlud* (p: 35)

May Allah bless you in His gift to you, may you give thanks to the giver of this gift, may the child reach the maturity of years, and may you be granted its righteousness.

LIFE EXPECTANCY AT BIRTH

2014 QUICK FACTS

Life Expectancy at Birth for a Maldivian Male^a **73.1** years

Life Expectancy at Birth for a Maldivian Female^a **74.8** years

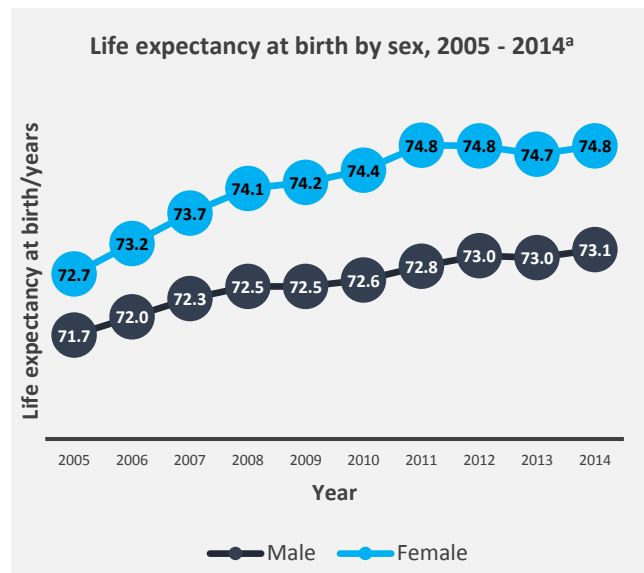
Life Expectancy at Birth, 1977 & 2014^a

Year/	1977	2014
Female	46.0	74.8
Male	48.5	73.1
Gap (Female to Male)	-2.5	1.7

A Maldivian girl who was born in the year 2014 can be expected to live to around 74 – 75 years while a Maldivian boy who was born in the same year can be expected to live to around 73 years^a.

A 50.7% increase in life expectancy at birth for males were observed compared to 1977 figure (48.5 years), while a 62.6% increase was observed for females when compared to 1977 figure (46.0 years)^a.

Although in 1977, a Maldivian boy who was born that year was expected to live 2.5 years longer than a Maldivian girl born in the same year, a change in this trend can be observed over the years that followed^a. At present a Maldivian girl born in a particular year can be expected to live 1 – 2 years longer than a Maldivian boy born in the same year^a.



^aThe analysis is based on the life tables shared and verified by National Bureau of Statistics.

FERTILITY INDICES

2014 QUICK FACTS

	REPUBLIC	MALE	ATOLLS
GFR ¹	81	66	101
TFR ¹	2.46	2.04	2.78
GRR ¹	1.12	0.93	1.29

DEFINITIONS

General Fertility Rate [GFR] is defined in Census 2014¹ as “Total number of live births occurring per 1000 women in the reproductive period (15-49 years) in a given year”.

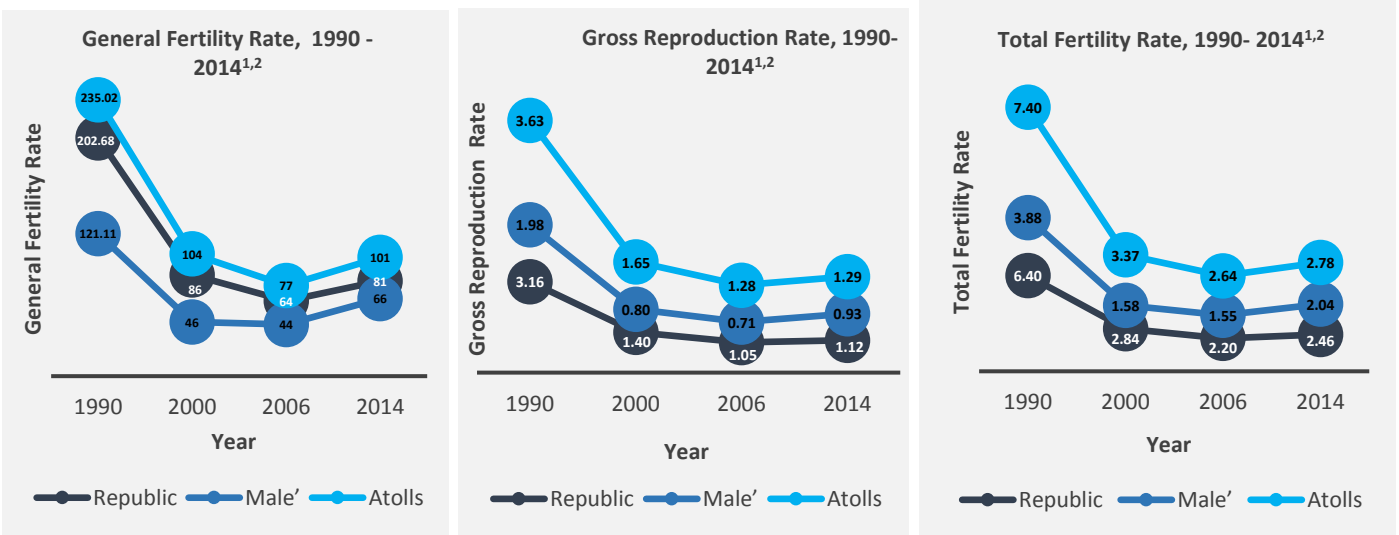
Total Fertility Rate [TFR] is defined in Census 2014¹ as “The average number of children a cohort of women would have at the end of their reproductive years if they had children according to a set of age specific fertility rates pertaining to a particular year”.

Gross Reproduction Rate [GRR] is defined in Census 2014¹ as “The number of daughters a woman would have on average in lifetime if she survives through childbearing period”.

According to Census 2014, a total of 81 live births had occurred per every 1000 women aged 15-49 years in the Maldives¹. At an average, a woman at the beginning of her childbearing age (15 years) will have 2.46 children by the end of her childbearing age (49 years)¹. Furthermore, a Maldivian woman who survives through her childbearing period (15-49 years) will bear on average 1.12 daughters during her lifetime¹.

When the population of Male’ is compared to other atolls, all three measures of fertility indices tends to be significantly higher within atolls when compared to Male’¹.

A steep decline can be observed for the three fertility indices when compared to 1990^{1,2}.



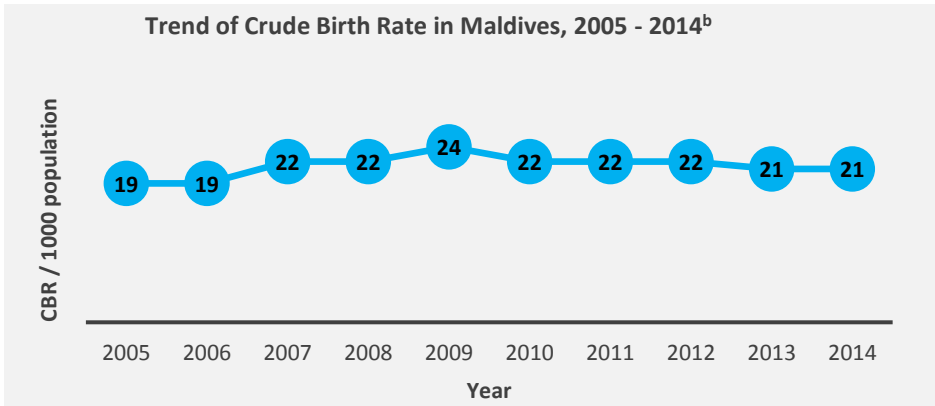
CRUDE BIRTH RATE

2014 QUICK FACTS

CBR for the total population ^b	21
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DEFINITIONS

CRUDE BIRTH RATE [CBR] is defined as “the number of live births, of a given geographic area in a given year, per 1000 mid-year total population of the same geographic area in the same year”³.



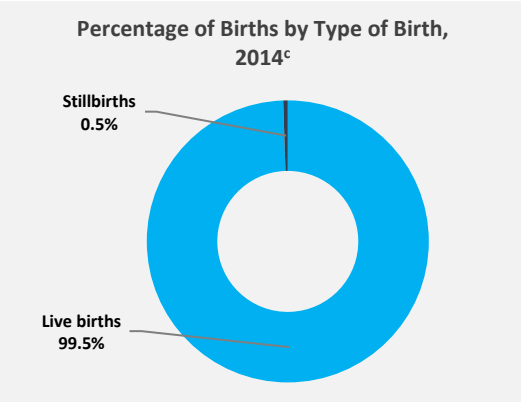
Over the past 10 years, Maldives have experienced a fairly stable Crude Birth Rate (CBR) with 19 live births occurring for every 1000 people in 2005 to 21 live births occurring for every 1000 people in 2014^b. The CBR peaked in 2009 with 24 live births per 1000 population^b.

^bThe analysis is based on primary data available from Vital Registration System of Maldives.

TOTAL BIRTHS

2014 QUICK FACTS

Total Number of Births ^c	7283
Number of Live Births ^c	7245
Number of stillbirths ^c	38



Total births in Maldives are an aggregated data of all births recorded for Male' and Atolls in the Vital Registration System. It also includes all reported births that had occurred abroad.

Less than 1 percent of births in Maldives results in stillbirths. This trend is similar over the past 5 years.

Percentage of live and stillbirths, 2010 – 2014^c

Year/ Birth Category	2010	2011	2012	2013	2014
Live Births (%)	99.3	99.4	99.3	99.3	99.5
Stillbirths (%)	0.7	0.6	0.7	0.7	0.5

^c The analysis is based on primary data available from Vital Registration System of Maldives.

Over 99 percent of births in Maldives are Live Births^c

NOTE: Only reported births that had occurred abroad are included in the total number of births. As no data is available on the number of stillbirths that had occurred abroad, this information is not reflected in the birth data.

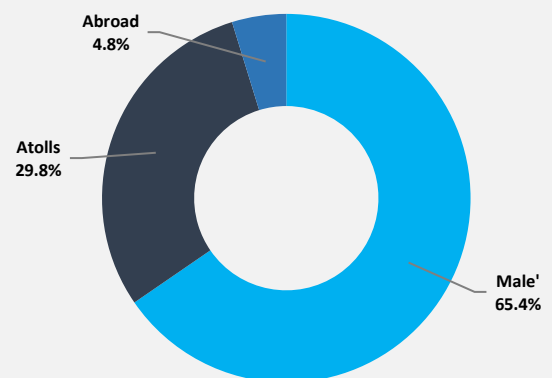
LIVE BIRTHS

2014 QUICK FACTS

Total Number of Live Births ^d	7245
Percentage of Male Live Births ^d	51.2%
Percentage of Female Live Births ^d	48.8%
Number of Live Births in Male ^d	4,740
Number of Live Births in Atolls ^d	2,160
Number of Live Births Abroad ^d	345

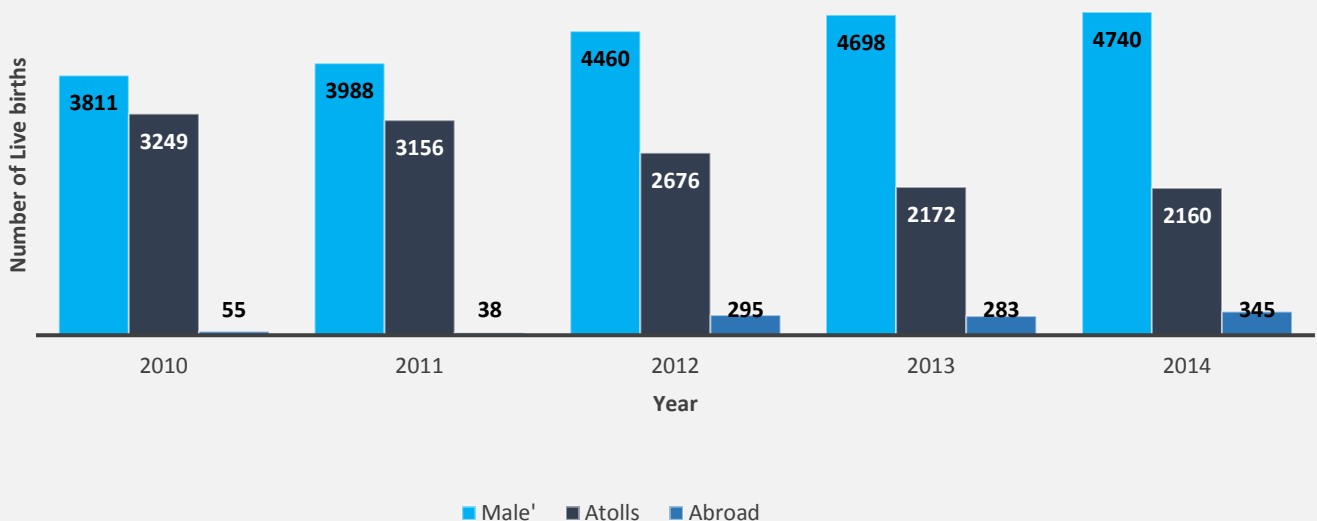
Almost 2 in 3 live births in Maldives occurred in Male^d

Percentage of live births by locality, 2014^d



A similar trend has been observed over the past 5 years with a significant majority of live births occurring in the capital city of Maldives^d.

Number of Live births by locality, 2010 - 2014^d



^dThe analysis is based on primary data available from Vital Registration System of Maldives.

PLACE OF DELIVERY & BIRTH OUTCOMES

2014 QUICK FACTS

Total Number of Stillbirths^e **38**

Number of stillbirths delivered at IGMH^e **26**

Number of stillbirths delivered at Hulhumale' Hospital^e **0**

Number of stillbirths delivered at Private Hospital^e **2**

Number of stillbirths delivered at Regional Hospitals^e **6**

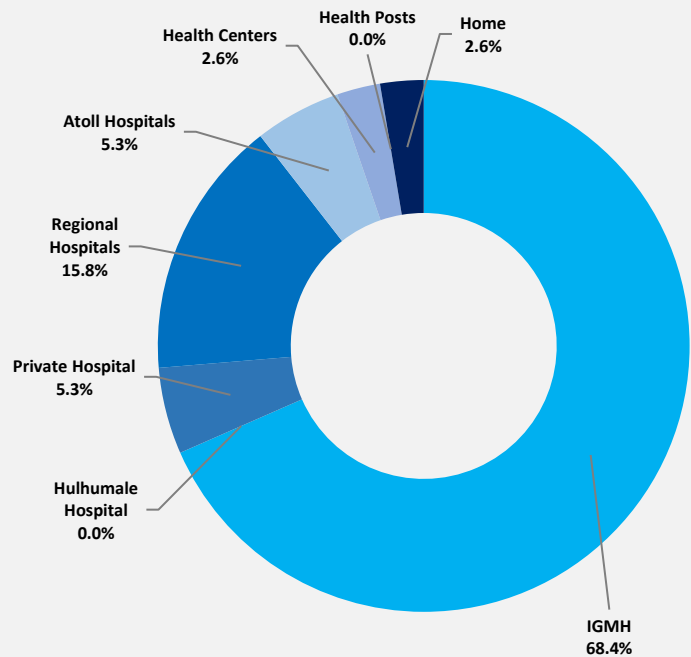
Number of stillbirths delivered at Atoll Hospitals^e **2**

Number of stillbirths delivered at Health Centres^e **1**

Number of stillbirths delivered at Health Posts^e **0**

Number of stillbirths delivered at Home^e **1**

Percentage of stillbirths by place of delivery, 2014^e



NOTE: Since majority of deliveries in Maldives (especially the complicated deliveries) occurred in IGMH, it is likely to skew the result towards more stillbirths occurring at IGMH. Hence, there is a need to explore birth outcomes by place of delivery to determine its effect on birth outcomes.

DEFINITIONS

STILLBIRTH is defined by World Health Organization⁴ as “a baby born with no signs of life at or after 28 weeks’ gestation”.

LIVE BIRTH is defined by World Health Organization⁵ as “the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life – e.g. beating of heart, pulsation of the umbilical cord or definite movement of voluntary muscles - whether or not the umbilical cord has been cut or the placenta is attached”.

COMPARISON BETWEEN IGMH & HOME DELIVERIES - 2014

	IGMH	HOME
Total Number of Deliveries ^e	2833	15
Percentage of Live Births Delivered ^e	99.1%	93.3%
Percentage of Stillbirths Delivered ^e	0.9%	6.7%

Less than 10 out of every 1000 deliveries in IGMH are stillbirths while more than 66 out of every 1000 deliveries in homes are stillbirths^e.

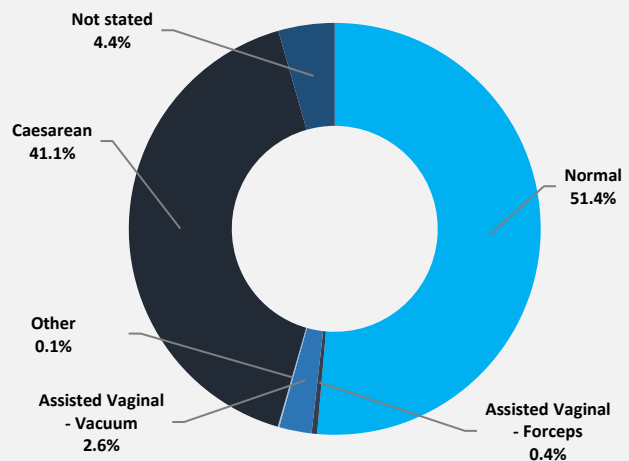
^eThe analysis is based on primary data available from Vital Registration System of Maldives.

MODE OF DELIVERY

2014 QUICK FACTS

Total Number of births ^f	7,283
Number of births by normal delivery ^f	3,741
Number of total births delivered by Caesarean ^f	2,994
Number of births delivered by assisted vaginal (Vacuum) ^f	186
Number of births delivered by assisted vaginal (Forceps) ^f	31
Number of births by other mode of deliveries ^f	9
Number of births with mode of delivery not stated ^f	322

Percentage of Births by Mode of Delivery - 2014^f



More than 1 in 2 births in Maldives occurs via normal deliveries^f.

More than 2 in 5 births in Maldives are delivered by Caesarean^f.

^fThe analysis is based on primary data available from Vital Registration System of Maldives.

MODE OF DELIVERY & BIRTH OUTCOMES

2014 QUICK FACTS

	LIVE BIRTHS	STILLBIRTHS
Number of Births ^g	7245	38
Percentage of Normal Deliveries ^g	51.3%	68.4%
Percentage of Deliveries by Caesarean ^g	41.2%	31.6%
Percentage of Deliveries by Vacuum ^g	2.6%	0%
Percentage of Deliveries by Forceps ^g	0.4%	0%
Percentage of other Mode of Deliveries ^g	0.1%	0%
Percentage of Deliveries With Mode of Delivery Not Stated ^g	4.4%	0%

All stillbirths have been delivered either via normal deliveries or by Caesarean, whereas, some level of assisted vaginal deliveries (vacuum and forceps) can be observed for live births^g.

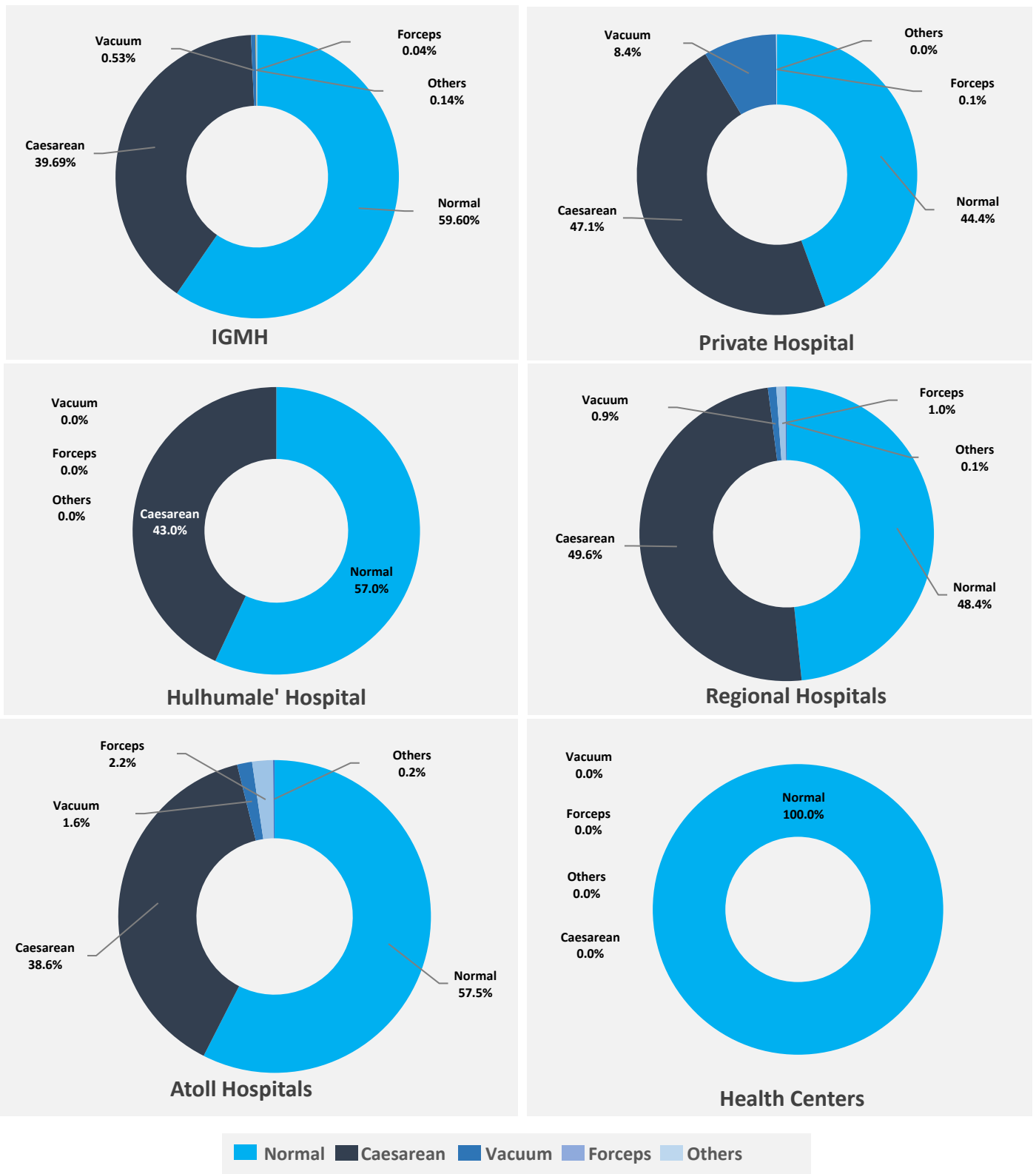
However, the predominant mode of delivery for live births were also either normal deliveries or Caesarean^g.

NOTE: The mode of delivery of all the births that had occurred in Maldives is known. The 4.4% of live births for which the type of delivery is not stated are from reported live births that had occurred abroad. Also, no data is available on the stillbirths that had occurred abroad. Hence, this information is not reflected in the birth outcome data.

^gThe analysis is based on primary data available from Vital Registration System of Maldives.

MODE OF DELIVERY & HEALTH FACILITIES

Percentage of Births by Mode of Delivery and Health Facilities, 2014^h



The predominant mode of deliveries across all types of health facilities are normal deliveries and Caesareans^h. In most types of public health facilities (except regional hospitals) normal deliveries precedes Caesareans^h.

There are no facilities to accommodate complicated deliveries in health centers and these cases are referred to other types of health facilities. Hence, all births that are delivered in health centers are normal deliveries^h.

^hThe analysis is based on primary data available from Vital Registration System of Maldives.

MEAN BIRTH WEIGHT

2014 QUICK FACTS

Mean Birth Weight of all births ⁱ	3365g (NBW)
Mean Birth Weight of all male births ⁱ	3397g (NBW)
Mean Birth Weight of all female births ⁱ	3331g (NBW)
Mean Birth Weight of all live births ⁱ	3370g (NBW)
Mean Birth Weight of all male live births ⁱ	3402g (NBW)
Mean Birth Weight of all female live births ⁱ	3337g (NBW)
Mean Birth Weight of all stillbirths ⁱ	2621g (NBW)
Mean Birth Weight of all male stillbirths ⁱ	2706g (NBW)
Mean Birth Weight of all female stillbirths ⁱ	2536g (NBW)

Mean Birth Weight (in grams) by birth outcomes – Maldives- 2012-2014ⁱ

Year/ Birth Category	2012	2013	2014
All Births	3059	3055	3365
Live Births	3069	3060	3370
Stillbirths	1930	2353	2621

DEFINITIONS

In this section, birth weights are classified as follows:

NORMAL BIRTH WEIGHT [NBW]- any baby having a body weight between the range of 2500 grams and 3999 grams at birth is classified as having a normal birth weight.

LOW BIRTH WEIGHT [LBW]- any baby having a body weight below 2500 grams at birth is classified as having a low birth weight

HIGH BIRTH WEIGHT [HBW]- any baby having a body weight greater than or equal to 4000 grams at birth is classified as having a high birth weight

On average, a baby born in 2014 in Maldives had a normal birth weight regardless of sex and type of birth (i.e. live or stillbirth)ⁱ.

Improvements in mean birth weight have been observed over the past three years, particularly in mean birth weight of stillbirths which had shifted from low birth weight in 2013 to normal birth weight in 2014ⁱ.

Stillbirths tend to have a lower mean birth weight when compared to live births while females tend to have a slightly lower birth weight when compared to malesⁱ. These trends have been similar over the past three yearsⁱ.

ⁱThe analysis is based on primary data available from Vital Registration System of Maldives.

MEAN BIRTH WEIGHT BY LOCALITY

2014 QUICK FACTS

	MALE ^j	ATOLLS
Mean Birth Weight of all births ^j	3084g (NBW)	3073g (NBW)
Mean Birth Weight of all male births ^j	3132g (NBW)	3108g (NBW)
Mean Birth Weight of all female births ^j	3034g (NBW)	3039g (NBW)
Mean Birth Weight of all live births ^j	3088g (NBW)	3073g (NBW)
Mean Birth Weight of all male live births ^j	3135g (NBW)	3108g (NBW)
Mean Birth Weight of all female live births ^j	3038g (NBW)	3038g (NBW)
Mean Birth Weight of all stillbirths ^j	2445g (LBW)	3116g (NBW)
Mean Birth Weight of all male stillbirths ^j	2520g (LBW)	3110g (NBW)
Mean Birth Weight of all female stillbirths ^j	2379g (LBW)	3125g (NBW)

There is no significant difference between the mean birth weight of births that had occurred in Male' and atolls^j.

On average, all live births that had occurred in Male' and within atolls in 2014 fall under normal weight range^j.

The mean birth weight of all stillbirths that had occurred in Male' falls under low birth weight while the mean birth weight of all stillbirths that had occurred in atolls fall under normal weight range^j.

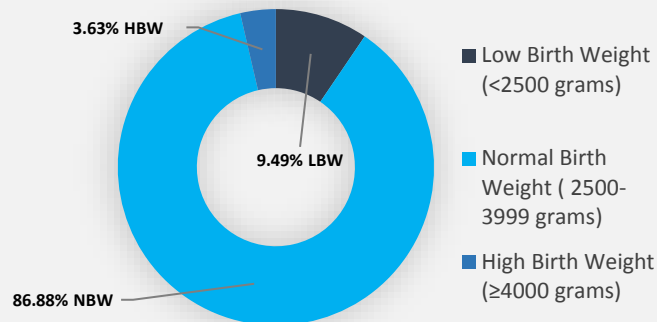
^jThe analysis is based on primary data available from Vital Registration System of Maldives.

BIRTH WEIGHT

2014 QUICK FACTS

Percentage of all babies born with low birth weight ^k	9.49%
Percentage of all babies born with normal birth weight ^k	86.88%
Percentage of all babies born with high birth weight ^k	3.63%
Percentage of babies born in Male' with low birth weight ^k	9.92%
Percentage of babies born in Male' with normal birth weight ^k	86.56%
Percentage of babies born in Male' with high birth weight ^k	3.52%
Percentage of babies born in Atolls with low birth weight ^k	8.38%
Percentage of babies born in Atolls with normal birth weight ^k	87.73%
Percentage of babies born in Atolls with high birth weight ^k	3.89%

Percentage of babies born by birth categories - 2014 - Maldives^k



More than 8 in 10 babies are born in Maldives with normal birth weight^k.

Almost 1 in 10 babies are born in Maldives with low birth weight^k.

A similar trend of babies born with low birth weight can be observed over the past 5 years^k.

Percentage of babies born with low birth weights – Maldives – 2010 – 2014^k

2010	2011	2012	2013	2014
9.83%	10.21%	9.78%	10.00%	9.49%

^kThe analysis is based on primary data available from Vital Registration System of Maldives.

AGE OF MOTHER

2014 QUICK FACTS

Total Number of Live Births	7245
Percentage of live births given by mothers aged below 20 years ^l	2.8%
Percentage of live births given by mothers aged 20 – 24 years ^l	27.1%
Percentage of live births given by mothers aged 25- 29 years ^l	35.3%
Percentage of live births given by mothers aged 30 – 34 years ^l	22.9%
Percentage of live births given by mothers aged 35- 39 years ^l	9.0%
Percentage of live births given by mothers aged 40-44 years ^l	2.7%
Percentage of live births given by mothers aged 45-49 years ^l	0.1%
Percentage of live births given by mothers aged above 50 years ^l	0.0%
Percentage of live births whose age of mother is not stated ^l	0.1%

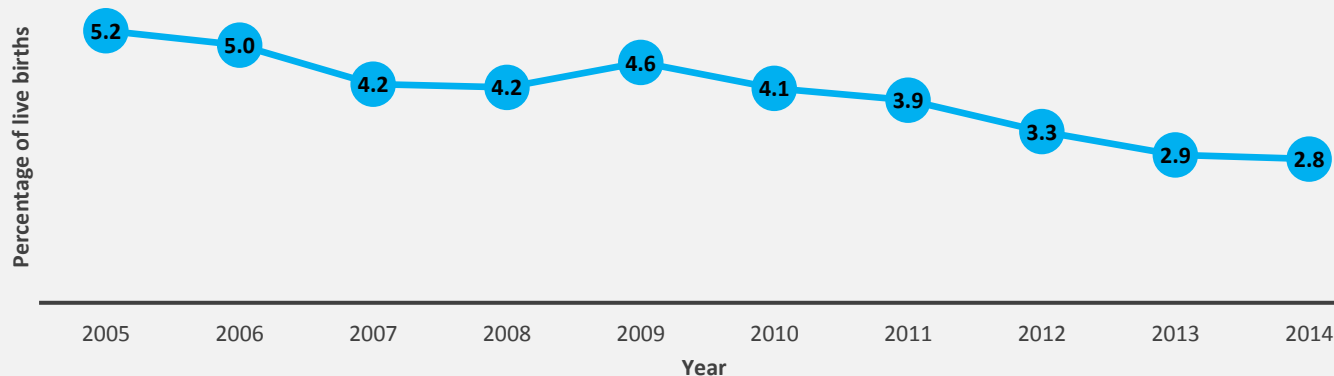
Around 3% of live births in Maldives occurred to mothers aged below 20 years^l.

More than 85% of live births in Maldives occurred to mothers aged between 20 to 34 years^l.

Over the past 10 years, the percentage of live births given by mothers aged below the age of 20 years have almost halved from 5.2 percent in 2005 to 2.8 percent in 2014^l.

Since 2009, a gradual decline in the percentage of live births given by mothers aged below 20 years can be observed^l.

Percentage of Births to Mothers under 20 years of age, 2005-2014^l



^lThe analysis is based on primary data available from Vital Registration System of Maldives.

BIRTH ATTENDANT

2014 QUICK FACTS

Number of births attended by Doctors^m **5,014**

Number of births attended by Nurses^m **1,947**

Number of births attended by Community Health Workers^m **3**

Number of births attended by Family Health Workers^m **6**

Number of births attended by Traditional Birth Attendants^m **14**

Number of births attended by others^m **6**

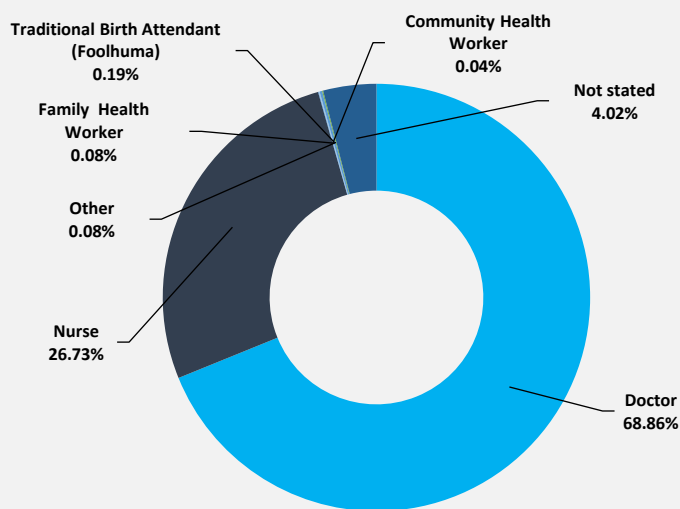
Number of births with birth attendants not stated^m **293**

Almost 96% of births have been attended by a skilled health professional^m.

Around 69% births have been attended by a doctor^m.

Less than 1% of births have been attended by traditional birth attendants^m.

Percentage of births attended by type of health professional, 2014^m



^mThe analysis is based on primary data available from Vital Registration System of Maldives.

SUMMARY TABLES

Table 1.1. Life Expectancy at Birth, 2005 -2014^a

Year/ Sex	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Male	71.7	72.0	72.3	72.5	72.5	72.6	72.8	73.0	73.0	73.1
Female	72.7	73.2	73.7	74.1	74.2	74.4	74.8	74.8	74.7	74.8

Table 1.2. Summary Measures of Fertility Based on Reported Birth Data from Census Figures, 1990 -2014^{1,2}

Year/ Locality	1990	2000	2006	2014
GENERAL FERTILITY RATE [GFR]				
Republic	202.68	86	64	81
Male'	121.11	46	44	66
Atolls	235.02	104	77	101
TOTAL FERTILITY RATE (TFR)				
Republic	6.40	2.84	2.20	2.46
Male'	3.88	1.58	1.55	2.04
Atolls	7.40	3.37	2.64	2.78
GROSS REPRODUCTION RATE (GRR)				
Republic	3.16	1.40	1.05	1.12
Male'	1.98	0.80	0.71	0.93
Atolls	3.63	1.65	1.28	1.29

Table 1.3. Trend of Crude Birth Rate per 1000 population in Maldives, 2005- 2014^b

Year/	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total	19	19	22	22	24	22	22	22	21	21

Table 1.4. Number and Percentage of live and stillbirths by locality, 2010- 2014^{c,d}

Year/ Place of Birth	2010		2011		2012		2013		2014	
	Number	%	Number	%	Number	%	Number	%	Number	%
REPUBLIC										
Live Births	7115	99.3	7182	99.4	7431	99.3	7153	99.3	7245	99.5
Stillbirths	48	0.7	43	0.6	50	0.7	51	0.7	38	0.5
Total Births	7163	100.0	7225	100.0	7481	100.0	7204	100.0	7283	100.0
MALE'										
Live Births	3811	99.4	3988	99.4	4460	99.3	4698	99.3	4740	99.4
Stillbirths	23	0.6	25	0.6	30	0.7	31	0.7	28	0.6
Total Births	3834	100.0	4013	100.0	4490	100.0	4729	100.0	4768	100.0
ATOLLS										
Live Births	3249	99.2	3156	99.4	2676	99.3	2172	99.1	2160	99.5
Stillbirths	25	0.8	18	0.6	20	0.7	20	0.9	10	0.5
Total Births	3274	100.0	3174	100.0	2696	100.0	2192	100.0	2170	100.0
ABROAD										
Live Births	55	N/A	38	N/A	295	N/A	283	N/A	345	N/A
Stillbirths	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Births	55	N/A	38	N/A	295	N/A	283	N/A	345	N/A

Note: Abroad Still births are not reported so cannot calculate the percentage

Table 1.5. Number of Live Births by Sex and Locality, 2010 – 2014^d

Year/ Sex	2010	2011	2012	2013	2014
REPUBLIC					
Male	3694	3797	3890	3720	3706
Female	3421	3385	3541	3433	3539
Total	7115	7182	7431	7153	7245
MALE'					
Male	1969	2048	2300	2456	2434
Female	1842	1940	2160	2242	2306
Total	3811	3988	4460	4698	4740
ATOLLS					
Male	1695	1723	1414	1118	1092
Female	1554	1433	1262	1054	1068
Total	3249	3156	2676	2172	2160
ABROAD					
Male	30	26	176	146	180
Female	25	12	119	137	165
Total	55	38	295	283	345

Note: some of the figures have been revised as previously unavailable data is available

Table 1.6. Live and Stillbirths by place of delivery, 2012 – 2014^e

Year & Birth Outcome/ Place of Delivery	2012			2013			2014		
	Total Births	Live Births	Still Births	Total Births	Live Births	Still Births	Total Births	Live Births	Still Births
IGMH	2826	2801	25	3036	3011	25	2833	2807	26
Hulumale' Hospital	121	120	1	71	71	0	172	172	0
Private Hospital	1531	1529	2	1617	1611	6	1757	1755	2
Regional Hospitals	1645	1633	12	1505	1492	13	1422	1416	6
Atoll Hospitals	898	889	9	570	566	4	648	646	2
Health Centers	138	137	1	89	87	2	85	84	1
Health Posts	1	1	0	3	3	0	0	0	0
Home	20	20	0	22	21	1	15	14	1
Other	6	6	0	8	8	0	6	6	0

Note: Others Includes births on dhoani, ambulance, others, not stated, etc

Table 1.7. Number and Percentage of Live Births by Mode of Delivery and Place of Birth, 2014^{f,g}

Mode of delivery/Place of Birth	Normal		Caesarean #		Vacuum		Forceps		Others ~		Not Stated		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
IGMH	1673	59.60	1114	39.69	15	0.53	1	0.04	4	0.14	0	0.00	2807	100
Private Hospital	779	44.4	826	47.1	148	8.4	2	0.1	0	0.0	0	0.0	1755	100
Hulumale' Hospital	98	57.0	74	43.0	0	0.0	0	0.0	0	0.0	0	0.0	172	100
Regional Hospitals	685	48.4	702	49.6	13	0.9	14	1.0	2	0.1	0	0.0	1416	100
Atoll Hospitals	372	57.5	250	38.6	10	1.5	14	2.2	1	0.2	0	0.0	647	100
Health Centers	84	100	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	84	100
Others*	18	94.7	0	0.0	0	0.0	0	0.0	1	5.3	0	0.0	19	100
Abroad	6	1.7	16	4.6	0	0.0	0	0.0	1	0.3	322	93.3	345	100

* Includes, on dhoani, home, ambulance, not stated and others

Includes emergency and unspecified caesareans

~ Includes induced and spontaneous abortion and breech deliveries

Table 1.8. Number and Percentage of Stillbirths by Mode of Delivery and Place of Birth, 2014^f

Mode of delivery/Place of Birth	Normal		Caesarean #		Vacuum		Forceps		Others ~		Not Stated		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
IGMH	18	69.2	8	30.8	0	0.0	0	0.0	0	0.0	0	0.0	26	100
Private Hospital	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0	2	100
Hulhumale' Hospital	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.00
Regional Hospitals	3	50.0	3	50.0	0	0.0	0	0.0	0	0.0	0	0.0	6	100
Atoll Hospitals	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	100
Health Centers	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100
Others*	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100
Abroad	26	68.4	12	31.6	0	0.0	0	0.0	0	0.0	0	0.0	38	100

* Includes, on dhoani, home, ambulance, not stated and others

Includes emergency and unspecified caesareans

~ Includes induced and spontaneous abortion and breech deliveries

Table 1.9. Number and Percentage of Total Births (Live and Still births) by Mode of Delivery and Type of Health Facility, 2014^h

Mode of delivery/Health Facility	Normal		Caesarean #		Vacuum		Forceps		Others ~		Not Stated		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
IGMH	1691	59.69	1122	39.60	15	0.53	1	0.04	4	0.14	0	0.00	2833	100
Private Hospital	780	44.4	827	47.1	148	8.4	2	0.1	0	0.0	0	0.0	1757	100
Hulhumale' Hospital	98	57.0	74	43.0	0	0.0	0	0.0	0	0.0	0	0.0	172	100
Regional Hospitals	688	48.4	705	49.6	13	0.9	14	1.0	2	0.1	0	0.0	1422	100
Atoll Hospitals	374	57.6	250	38.5	10	1.5	14	2.2	1	0.2	0	0.0	649	100
Health Centers	85	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	85	100

Includes emergency and unspecified caesareans

~ Includes induced and spontaneous abortion and breech deliveries

This table excludes 365 deliveries that had occurred outside of a health facility and deliveries that had occurred abroad.Table 1.10. Mean Birth Weight (In grams) by Birth Outcome, Sex and Locality, 2012-2014^{ij}

Year & Birth Outcome/ Locality & Sex	2012			2013			2014		
	Total Births	Live Births	Still Births	Total Births	Live Births	Still Births	Total Births	Live Births	Still Births
REPUBLIC									
Male	3393	3103	1969	3094	3099	2358	3397	3402	2706
Female	3248	3034	1891	3015	3018	2445	3331	3337	2536
Total	3059	3069	1930	3055	3060	2353	3365	3370	2621
MALE'									
Male	3088	3098	1549	3084	3090	2019	3132	3135	2520
Female	3041	3048	1916	3014	3018	2483	3034	3038	2379
Total	3065	3074	1720	3050	3056	2259	3084	3088	2445
ATOLLS									
Male	3105	3000	3103	3116	3119	2820	3108	3108	3110
Female	3010	1861	3000	3017	3022	2369	3039	3038	3125
Total	3061	2105	3055	3066	3072	2499	3073	3073	3116

Table 1.11. Number and Percentage of Births by Birth Weight and Locality, 2010- 2014^k

Year/ Locality & Birth Weight	2010		2011		2012		2013		2014	
	Number	%	Number	%	Number	%	Number	%	Number	%
REPUBLIC										
Low Birth Weight (<2500 grams)	697	9.83	729	10.21	698	9.78	688	10.00	659	9.49
Normal Birth Weight (2500- 3999 grams)	6170	87.02	6214	86.99	6210	87.05	5992	87.09	6033	86.88
High Birth Weight (≥4000 grams)	223	3.15	200	2.80	226	3.17	200	2.91	252	3.63
Not Stated	0	0.00	39	0.54	0	0.00	0	0.00	0	0.00
MALE'										
Low Birth Weight (<2500 grams)	422	11.07	448	11.23	445	9.98	516	10.98	470	9.92
Normal Birth Weight (2500- 3999 grams)	3289	86.30	3436	86.16	3895	87.33	4066	86.55	4103	86.56
High Birth Weight (≥4000 grams)	100	2.62	104	2.61	120	2.69	116	2.47	167	3.52
Not Stated	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
ATOLLS										
Low Birth Weight (<2500 grams)	268	8.25	280	8.88	253	9.46	170	7.83	181	8.38
Normal Birth Weight (2500- 3999 grams)	2858	87.97	2778	88.08	2315	86.57	1918	88.31	1894	87.73
High Birth Weight (≥4000 grams)	123	3.79	96	3.04	106	3.96	84	3.87	84	3.89
Not Stated	0	0.00	2	0.06	0	0.00	0	0.00	0	0.00

Table 1.12. Number and Percentage of Live Births by Age of Mother, 2011- 2014^l

Year/ Locality & Birth Weight	2011		2012		2013		2014	
	Number	%	Number	%	Number	%	Number	%
10 -14	0	0.00	0	0.00	1	0.01	0	0.00
15-19	277	3.86	242	3.26	203	2.8	201	2.77
20-24	2305	32.09	2311	31.1	2134	29.8	1960	27.05
25-29	2415	33.63	2555	34.38	2465	34.5	2555	35.27
30-34	1367	19.03	1486	20.0	1503	21.0	1662	22.94
35-39	679	9.45	654	8.8	659	9.2	654	9.03
40-44	124	1.73	172	2.31	180	2.5	198	2.73
45-49	8	0.11	9	0.12	7	0.1	10	0.14
>50	3	0.04	0	0.00	0	0.00	0	0.00
Not Stated	4	0.06	2	0.03	0	0.00	5	0.07
Total	7182	100.00	7431	100.00	7153	100.00	7245	100.00

Table 1.13. Number and Percentage of Births by Type of Health Professional Attended, 2013 & 2014^m

Year & Locality/ Type of Health Professional Attended	2013								2014							
	Republic		Male'		Atolls		Abroad		Republic		Male'		Atolls		Abroad	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
LIVE BIRTHS																
Doctor	4828	67.50	2921	62.18	1907	87.80	0	0.00	4995	68.94	3010	63.50	1927	89.21	58	16.81
Nurse	2007	28.06	1774	37.76	233	10.73	0	0.00	1930	26.64	1727	36.43	203	9.40	0	0.00
Community Health Worker	4	0.06	0	0.00	4	0.18	0	0.00	3	0.04	0	0.00	3	0.14	0	0.00
Family Health Worker	4	0.06	0	0.00	4	0.18	0	0.00	6	0.08	0	0.00	6	0.28	0	0.00
Traditional Birth Attendant (Foolhuma)	21	0.29	0	0.00	21	0.97	0	0.00	13	0.18	0	0.00	13	0.60	0	0.00
Other	2	0.03	0	0.00	2	0.09	0	0.00	6	0.08	1	0.02	5	0.23	0	0.00
Not Stated	287	4.01	3	0.06	1	0.05	283	100	292	4.03	2	0.04	3	0.14	287	83.19
Total	7153	100	4698	100	2172	100	283	100	7245	100	4740	100	2160	100	345	100
STILLBIRTHS																
Doctor	32	62.75	14	45.16	18	90.00	0	0.00	19	50.00	11	39.29	8	80.00	N/A	N/A
Nurse	18	35.29	17	54.84	1	5.00	0	0.00	17	44.74	17	60.71	0	0.00	N/A	N/A
Community Health Worker	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A
Family Health Worker	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A
Traditional Birth Attendant (Foolhuma)	1	1.96	0	0.00	1	5.00	0	0.00	1	2.63	0	0.00	1	10.00	N/A	N/A
Other	0	0.00	0	0.00	0	0.00	0	0.00	1	2.63	0	0.00	0	0.00	N/A	N/A
Not Stated	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1	10.00	N/A	N/A
Total	51	100	31	100	20	100	0	0.00	38	100	28	100	10	100	N/A	N/A
TOTAL BIRTHS																
Doctor	4860	67.46	2935	62.06	1925	87.82	0	0.0	5014	68.85	3021	63.36	1935	89.17	58	16.81
Nurse	2025	28.11	1791	37.87	234	10.68	0	0.0	1947	26.73	1744	36.58	203	9.35	0	0.00
Community Health Worker	4	0.06	0	0.00	4	0.18	0	0.0	3	0.04	0	0.00	3	0.14	0	0.00
Family Health Worker	4	0.06	0	0.00	4	0.18	0	0.0	6	0.08	0	0.00	6	0.28	0	0.00
Traditional Birth Attendant (Foolhuma)	22	0.31	0	0.00	22	1.00	0	0.0	14	0.19	0	0.00	14	0.65	0	0.00
Other	2	0.03	0	0.00	2	0.09	0	0.0	6	0.08	1	0.02	5	0.23	0	0.00
Not Stated	287	3.98	3	0.06	1	0.05	283	100.0	293	4.02	2	0.04	4	0.18	287	83.19
Total	7204	100	4729	100	2192	100	283	100.0	7283	100	4768	100	2170	100	345	100

CHAPTER TWO



MORBIDITY

”

أَسْأَلُ اللَّهَ الْعَظِيمَ رَبَّ الْعَرْشِ الْعَظِيمِ أَنْ يَشْفِيكَ

“

At-Tirmidhi 2/210 and Sahihul-Jami' As-Saghir 5/180

I Ask Almighty Allah, Lord Of The Magnificent Throne, To make you well
(Recite Seven Times in Arabic)

WHAT IS MORBIDITY?

Both World Health Organization [WHO]¹ and Centres for Disease Control [CDC]² defines morbidity as “any departure, subjective or objective, from a state of physiological or psychological well-being.”. In other words, morbidity is a broad term used to encapsulate all types of communicable and non-communicable diseases, illnesses, sicknesses and any other condition that leads to ill health and is detrimental to the wellbeing of an individual.

This chapter is limited to discussion around morbidities related to some specific diseases and conditions that had caused or continues to cause significant impact on the health and wellbeing of Maldivians in the recent years. This includes dengue, diarrhoea, chikungunya, tuberculosis, leprosy, HIV, syphilis, sexually transmitted infections (by symptomatic diagnosis) and anaemia.

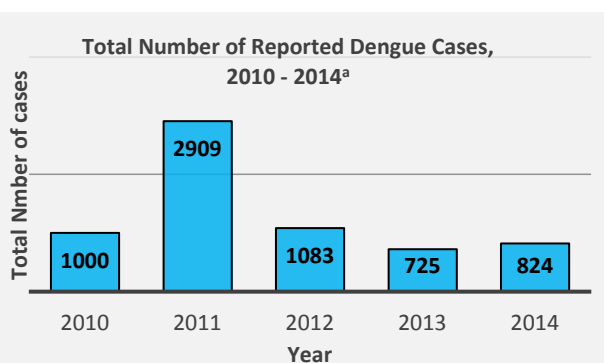
DENGUE

2014 QUICK FACTS

Total Number of Reported Dengue Cases ^a	824
Total Number of Reported Dengue Fever [DF] Cases ^a	775 (94.1%)
Total Number of Reported Dengue Haemorrhagic Fever [DHF] Cases ^a	46 (5.6%)
Total Number of Reported Dengue Shock Syndrome [DSS] Cases ^a	03 (0.4%)
Month with Highest Number of Reported DF Cases ^a	June (N=93)
Month with Highest Number of Reported DHF Cases ^a	June (N=14)

Dengue seems to be endemic in Maldives with cases being reported throughout the year^a. In 2014, a total of 824 cases of dengue were reported out of which 6 percent of these cases were reported to be developed in to more severe forms of dengue^a.

When the past 5 years were compared, total number of reported dengue cases peaked in 2011 and then it dropped significantly in the coming years^a. However, slightly more cases than 2013 have been reported in 2014^a.



WHAT IS DENGUE?

Centers for Disease Control (CDC)³ defines dengue as a “mosquito-borne disease caused by any one of four closely related dengue viruses (DENV-1, -2, -3 and -4)... Dengue viruses are transmitted from person to person by *Aedes* mosquitoes (most often *Aedes aegypti*) in the domestic environment.”

CLASSIFICATIONS OF DENGUE

Dengue Fever [DF]: “classic dengue fever, or “break bone fever,” is characterized by acute onset of high fever 3–14 days after the bite of an infected mosquito. Symptoms include frontal headache, retro-orbital pain, myalgias, arthralgias, hemorrhagic manifestations, rash, and low white blood cell count. The patient also may complain of anorexia and nausea....The main medical complications of classic dengue fever are febrile seizures and dehydration.”³

Dengue Haemorrhagic Fever [DHF] – according to CDC³ DHF is a severe and sometimes fatal form of Dengue fever which is developed among some patients with the disease. WHO uses the following four criteria to currently classify a dengue case as DHF:

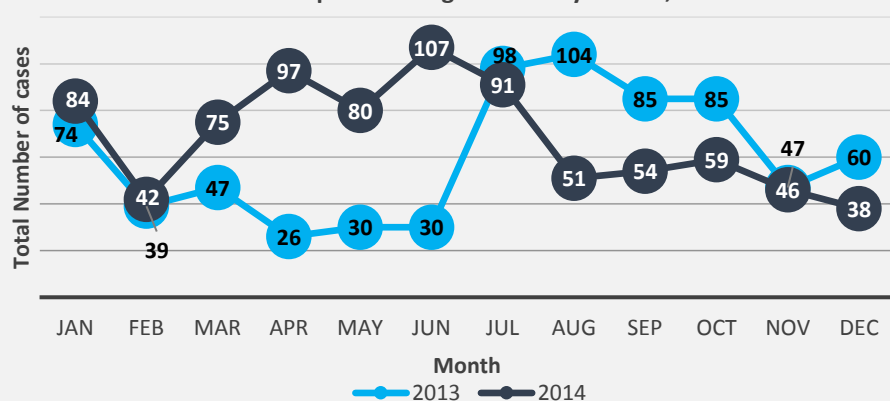
1. Fever or recent history of fever lasting 2-7 days
2. Any hemorrhagic manifestation
3. Thrombocytopenia (platelet count of <100,000/mm³)
4. Evidence of increased vascular permeability

Dengue Shock Syndrome [DSS] is defined by CDC³ as “any case that meets the four (WHO) criteria for DHF and has evidence of circulatory failure manifested by:

1. Rapid, weak pulse and narrow pulse pressure (≤ 20 mmHg [2.7 kPa]) OR
2. hypotension for age, restlessness, and cold, clammy skin.

Patients with dengue can rapidly progress into DSS, which, if not treated correctly, can lead to severe complications and death.”

Total Number of Reported Dengue Cases By Month, 2013 - 2014^a



Although when compared to 2013, a higher number of dengue cases were reported in 2014, monthly comparisons of the two years showed a drop in the number of dengue cases in the last 6 months of 2014 while the first 6 months of 2014 showed more reported cases of dengue than those reported in 2013 for the same time frame^a.

^aThe analysis and write-up is based on programmatic and surveillance records shared by Communicable Disease Programme of Health Protection Agency, Ministry of Health.

DIARRHOEA

WHAT IS DIARRHOEA?

World Health Organization [WHO]⁴ defines diarrhoea as “the passage of three or more loose or liquid stools per day (or more frequent passage than is normal for the individual)”

Globally diarrhoea is a significant health concern associated with unsafe drinking water, inadequate sanitation and poor hygiene practices⁴.

Worldwide, diarrhoea is a predominant cause of morbidity and mortality among children (especially those below the age of 5 years)⁴.

Diarrhoea cases declined from 23,199 cases in 2005 to 12,120 cases in 2007^b. However, number of new cases of diarrhoea reported increased from 2008 until it peaked at 25,876 cases in 2013^b.

5,922 less new cases were reported in 2014 when compared to 2013 figure^b. On the other hand, more fluctuations can be observed for incidence rate over the past 10 years^b.

The highest incidence rate of 79.06 new cases of diarrhoea per 1000 population was recorded in 2005^b. The lowest incidence rates of 40.54 per 1000 population were recorded in the years 2007 and 2009^b.

2014 QUICK FACTS

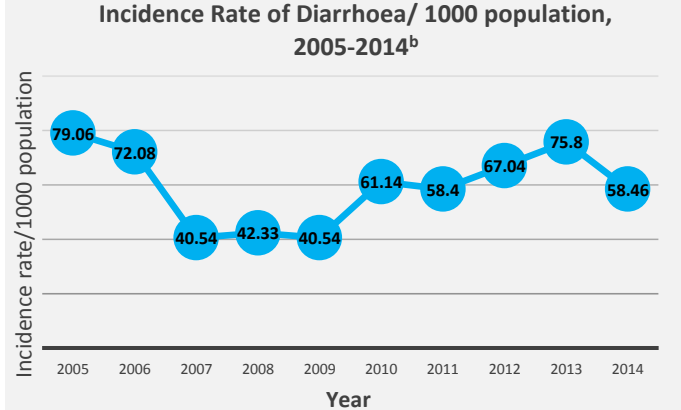
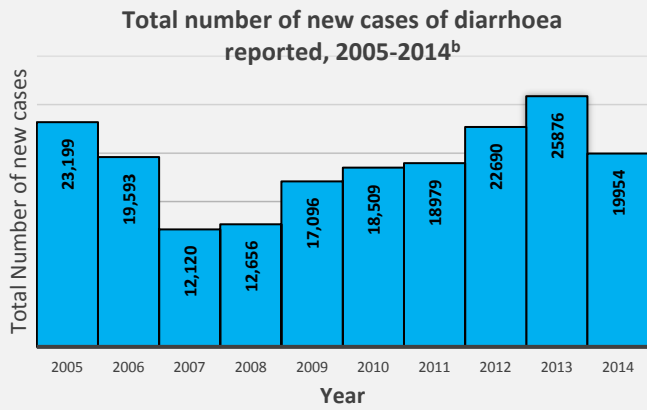
Total number of new cases of diarrhoea reported^b **19,954 cases**

Incidence Rate/1000 population of diarrhoea in Maldives^b **58.46**

DEFINITION

INCIDENCE RATE- In this chapter incidence rate is defined using the formula below:

$$\text{Incidence Rate} = \frac{\text{Total Number of New Cases}}{\text{Mid-Year Population}} \times 10^3$$



^bThe analysis and write-up is based on programmatic and surveillance records shared by Communicable Disease Programme of Health Protection Agency, Ministry of Health.

CHIKUNGUNYA

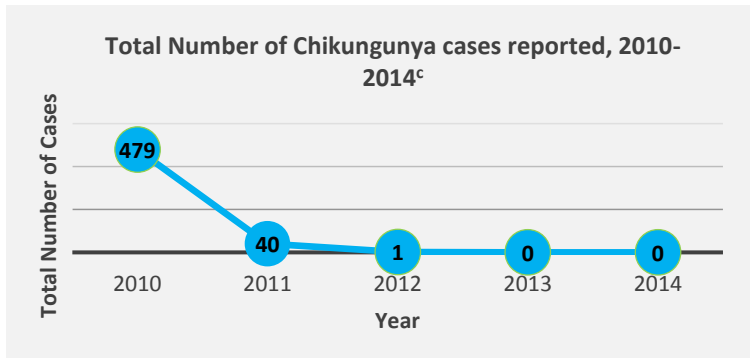
WHAT IS CHIKUNGUNYA?

WHO⁵ defines Chikungunya as a disease which is caused by a virus that is transmitted to humans by infected mosquitoes. When humans are infected with this virus, it predominantly causes severe joint pain and fever⁵. However, other symptoms such as headache, nausea, muscle pain, rash and fatigue can also be observed in patients suffering from Chikungunya⁵.

2014 QUICK FACTS

Total number of Chikungunya cases reported^c **ZERO**

Chikungunya was a viral disease that caused an epidemic in the year 2010 with a total of 479 cases being reported in that year^c. However, this disease was controlled very quickly resulting in a steep decline of reported cases of chikungunya in 2011 which further declined to only one case being reported in 2012^c. In the past two years, no cases of Chikungunya have been reported in Maldives^c.



^cThe analysis and write-up is based on programmatic and surveillance records shared by Communicable Disease Programme of Health Protection Agency, Ministry of Health.

TUBERCULOSIS

WHAT IS TUBERCULOSIS [TB]?

According to WHO⁶, TB is a curable and preventable disease caused by a bacterium known as Mycobacterium tuberculosis and most of the time it affects the lungs of an infection person. TB is a communicable disease which spreads from one person to another via air (i.e. droplet transmission)⁶.

2014 QUICK FACTS

Total TB cases under treatment ^d	53	
	SPUTUM [+]	SPUTUM [-]
Prevalence rate/1000 population of TB in Maldives ^d	0.22	0.29
Incidence rate/1000 population of TB in Maldives ^d	0.15	0.23

Over the past 10 years, the total number of TB cases under treatment had fluctuated slightly from 80 cases in 2005 to 53 cases in 2014^d.

Although an initial drop from 80 cases to 68 cases were observed from 2005 to 2006, the number of TB cases under treatment peaked at 95 cases in 2007^d.

In lieu of this increase, a steep decline can be observed from 2008 to 2010 where this decline peaked at 33 cases^d. A slight increase was observed from 2011 to 2013 which again decreased slightly to 53 cases in 2014^d.

Apart from this, the incidence and prevalence rate for both sputum positive and sputum negative TB has been relatively low in Maldives^d.

The highest incidence rate was observed for sputum positive TB (0.5/1000 population) in 2009^d, whereas the highest prevalence rate was observed for sputum negative TB (0.29/1000 population) in 2014^d.

DEFINITIONS

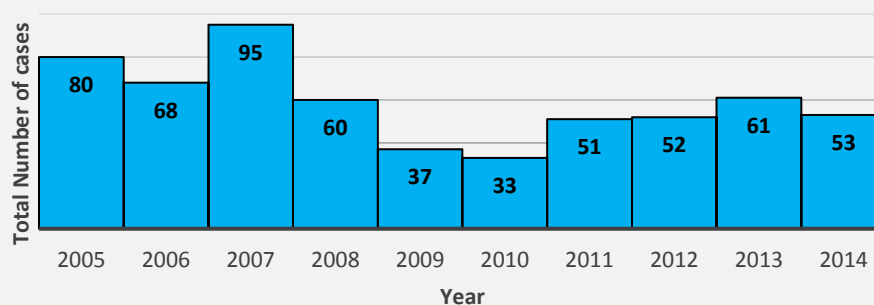
SPUTUM [+] - In this section sputum positive is defined as any TB case which have undergone a sputum smear microscopy examination and the sample of the sputum has been tested positive for the presence of TB causing bacteria

SPUTUM [-] – Sputum negative is defined in this section as any TB case which have undergone a sputum smear microscopy examination and the sample of the sputum have been tested negative for the presence of TB causing bacteria. This does not specifically indicate that the person does not have TB but it may be indicative of the absence of TB in the pulmonary system

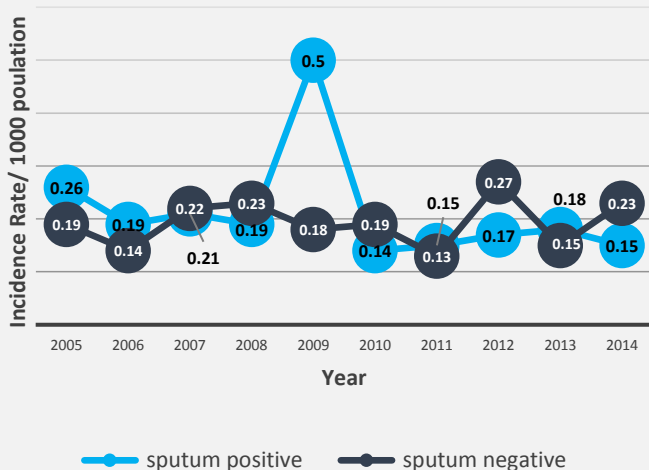
PREVALENCE a.k.a PREVALENCE RATE– In this chapter, prevalence rate is defined using the formula stated below:

$$\text{Prevalence Rate} = \frac{\text{Total Number of all (existing plus new) Cases}}{\text{Mid-Year Population}} \times 10^3$$

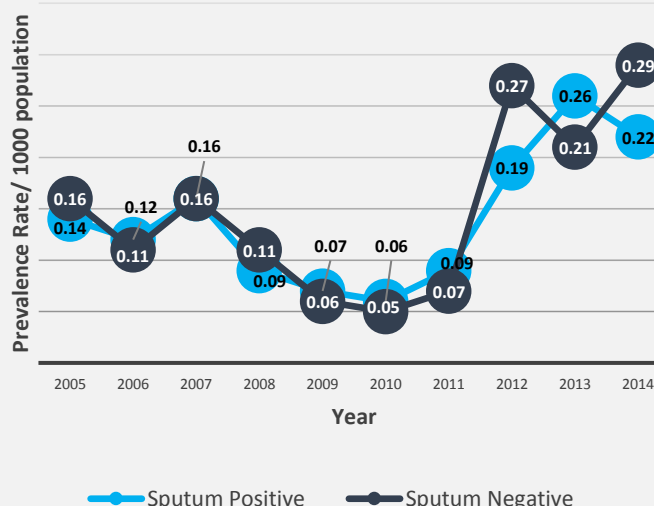
Total Number of TB cases under treatment, 2005-2014^d



Incidence Rate of Sputum positive and Sputum Negative TB/ 1000 population, 2005-2014^d



Prevalence Rate of Sputum positive and Sputum Negative TB/ 1000 population, 2005-2014^d



^dThe analysis and write-up is based on programmatic and surveillance records shared by Communicable Disease Programme of Health Protection Agency, Ministry of Health.

LEPROSY

2014 QUICK FACTS

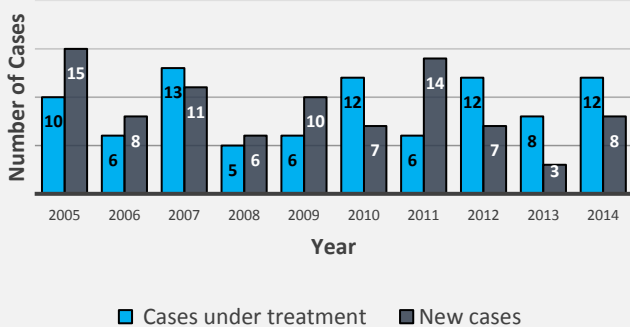
Total Leprosy cases under treatment ^e	12
Number of new cases of leprosy reported ^e	8
Prevalence Rate/1000 population of Leprosy in Maldives ^e	0.03
Incidence Rate/ 1000 population of Leprosy in Maldives ^e	0.02

WHAT IS LEPROSY?

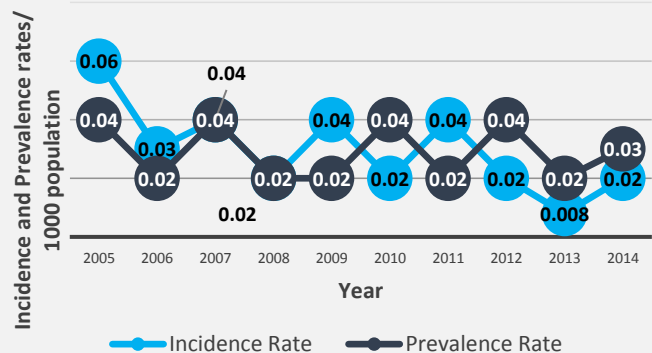
WHO⁷ defines Leprosy as a chronic but curable disease which is caused by slowly multiplying bacteria known as *Mycobacterium leprae* and this disease mainly affects the skin, eyes, mucosa of the upper respiratory tract and the peripheral nerves. It may take about 20 years for the symptoms of this disease to develop and this disease has a long incubation period of about 5 years⁷.

Over the past decade, the number of new cases of Leprosy had fluctuated slightly within the range of 3 (in 2013) and 15 (in 2005)^e. Similarly, the total number of Leprosy cases under treatment has also fluctuated slightly within the range of 5 cases (in 2008) and 13 cases (in 2007)^e. Compared to 2013, 2014 showed a slight increase in both the number of new cases reported (an increase of 5 cases) and the number of cases under treatment (an increase of 4 cases)^e. In terms of incidence and prevalence rate of leprosy in Maldives, it is noteworthy that Maldives have maintained a relatively low prevalence and incidence rate of leprosy which mostly fluctuated from 0.04 to 0.02 cases per 1000 population^e.

Total Number of New Cases of Leprosy and Leprosy cases under treatment, 2005-2014^e



Incidence and Prevalence Rate of Leprosy, 2005-2014^e



^eThe analysis and write-up is based on programmatic and surveillance records shared by Communicable Disease Programme of Health Protection Agency, Ministry of Health.

HIV

WHAT IS HIV?

According to WHO⁸, HIV or Human Immunodeficiency Virus targets and destroys the immune cells [CD4 cells] in the infected human body which weakens the infected individual's defence mechanism against infections and some types of cancers which eventually leads to immunodeficiency. The most advanced stage of this infection is known as AIDS [Acquired Immunodeficiency Syndrome]⁸. The main routes of HIV transmission are the exchange of infected body fluids such as blood, breast milk, semen and vaginal secretions⁸.

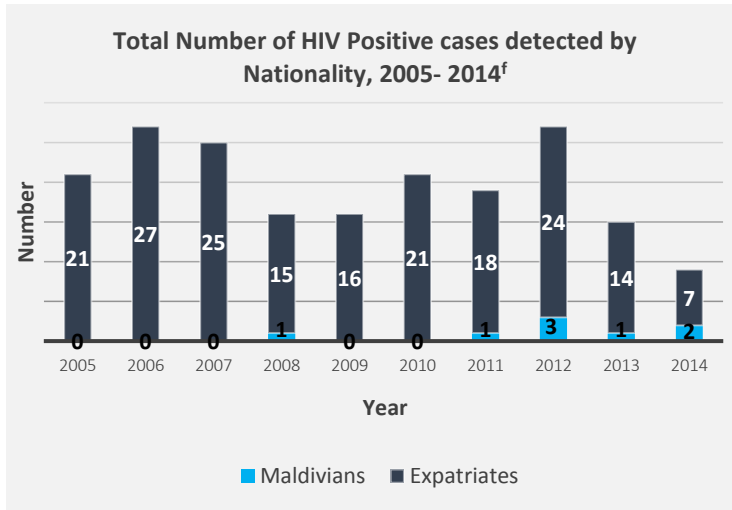
2014 QUICK FACTS

Total Number of New HIV positive cases detected ^f	9
Total Number of New HIV positive cases detected among Maldivians ^f	2 (22.22%)
Total Number of New HIV positive cases detected among Expatriates ^f	7 (77.78%)
Total Number of individuals screened for HIV ^f	31,548

Over the past 10 years, the number of new HIV positive cases detected in Maldives has been significantly low among Maldivians^f. The highest number of new cases among Maldivians (n=3) was detected in 2013^f. In 2014, 2 new HIV positive cases were observed among Maldivians^f.

In general, majority of HIV positive new cases detected in Maldives between 2005 and 2014 are from expatriates and it ranged from 7 (in 2014) to 27 (in 2006)^f.

In 2014 alone, 31,548 individuals were screened for HIV under the National AIDS Program^f.



^fThe analysis and write-up is based on programmatic and surveillance records shared by National AIDS Programme of Health Protection Agency, Ministry of Health.

SYPHILIS

WHAT IS SYPHILIS?

CDC⁹ defines Syphilis as a Sexually Transmitted Disease caused by a bacterium known as *Treponema pallidum*. If left untreated or if inadequately treated, this disease can cause damage to internal organs such as brain, nerves, eyes, heart, joints, bones, liver and blood vessels. Such damage could lead to long term complications such as difficulty in coordinating muscle movements, paralysis, numbness, blindness and dementia⁹. These complications can sometimes be serious enough to cause death⁹.

2014 QUICK FACTS

	Ante-Natal Clinic	Blood Donors
Total Number Screened ^g	2747	4502
Total Number of Syphilis Positive cases detected ^g	2	0

Cumulative Number of Syphilis Cases Detected During Screening (2010 – 2014)^g

Ante-Natal Clinic	Blood Donors
7	1

All blood-donors and pregnant women (who visit Ante-Natal Clinics) are being screened for Syphilis as a routine procedure^g. Over the past 5 years, 07 Syphilis cases have been detected during Ante-Natal Screening whereas only 01 Syphilis positive case has been detected among blood donors during the same time period^g.

^gThe analysis and write-up is based on programmatic and surveillance records shared by Reproductive Health Programme of Health Protection Agency, Ministry of Health.

SYMPTOMS RELATED TO STIs

WHAT IS STIs?

STIs or Sexually Transmitted Infections are defined by WHO¹⁰ as a group of infections whose predominant mode of transmission is via sexual contact (i.e. vaginal, oral and anal sex). Other modes of transmission of STIs include exchange of blood or blood products from an infected individual to a susceptible host¹⁰.

Although there are many cases of asymptomatic STIs, some common symptoms of STIs include vaginal and urethral discharge, burning sensation of the genitalia, genital ulcers and abdominal pain¹⁰.

This section will explore two common symptoms among males and females that can be indicative of the presence of STIs as follows:

- Male Urethral Discharge
- Female Urethral Discharge
- Male Genital Ulcers
- Female Genital Ulcers

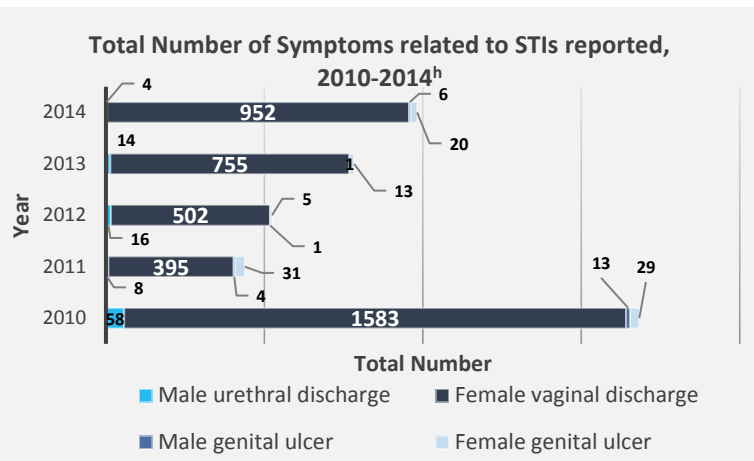
2014 QUICK FACTS

Total Number of Male Urethral Discharge Cases Reported^h **4**

Total Number of Female Vaginal Discharge Cases Reported^h **952**

Total Number of Male Genital Ulcer Cases Reported^h **6**

Total Number of Female Genital Ulcer Cases Reported^h **20**



When the 2014 figures of these symptoms were compared, it is noteworthy that STI related symptoms are more commonly reported among females with a significant cases of these symptoms being female vaginal discharge (n=952)^h. 20 cases of female genital ulcers were diagnosed and reported in 2014^h. Symptoms related to males are comparatively less with only 6 cases of male genital ulcers and 4 cases of male urethral discharge were reported as suggestive of STIs in 2014^h. Comparisons of the past 5 years showed a steep decline in the number of reported cases of these symptoms suggestive of STIs from 2010 to 2011^h. However, a slight increase can be observed in the subsequent years that followed (2012 – 2014), although these figures are still less than those reported in 2010^h.

^hThe analysis and write-up is based on programmatic and surveillance records shared by Reproductive Health Programme of Health Protection Agency, Ministry of Health.

ANAEMIA AMONG WOMEN

WHAT IS ANAEMIA?

WHO¹¹ defines anaemia as a “condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet the physiological need, which vary by age, sex, altitude, smoking and pregnancy status”

The most common cause of this condition is iron deficiency¹¹. Deficiencies in folate, vitamin B12 and Vitamin A, inherited disorders, chronic inflammation and parasitic infections can also cause Anaemia¹¹.

Children and pregnant women are most vulnerable to this condition¹¹.

In Maldives, the most recent data for anaemia among women of reproductive age (15- 49 years) is available from the results of National Micronutrient Survey [NMS] 2007¹² and Multiple Indicator Cluster Survey [MICS] 2001¹³. At present data collection on anaemia is ongoing within Maldives Demographic and Health Survey 2016. It is anticipated that the results of this survey will be available in 2017.

Key Findings of NMS 2007¹²

Total No. of Women Tested	1284
% of Women with Moderate Anaemia	15.1%
% of Women with Severe Anaemia	0.3%
% of Women with Normal Haemoglobin Levels	84.6%

Key Findings of MICS 2001¹³

Total No. of Women Tested	1636
% of Women with Some Degree of Anaemia	51.3%
% of Women with Mild Anaemia	40.5%
% of Women with Moderate Anaemia	10.0%
% of Women with Severe Anaemia	0.9%

The findings of MICS 2001¹³ showed that 51.3% of women of reproductive age in Maldives suffered from some degree of anaemia. Majority of women with anaemia (40.5%) had mild anaemia while, 10.0% and 0.9% women had moderate and severe anaemia, respectively¹³. On the contrary, NMS 2007¹² showed that the number of women in reproductive age having moderate anaemia was only 15.1% while 0.3% of women suffered from severe anaemia. This survey¹² also showed that close to 85 percent of women within reproductive age had normal haemoglobin levels.

NOTE: It is important to note that the classifications of anaemia used in MICS 2001¹³ and NMS 2007¹² have variations (refer to summary tables for anaemia for the classifications) and hence, caution needs to be taken when comparing the two data sets.

SUMMARY TABLES

Table 2.1. Total Number of Dengue Cases* Reported by Month- Maldives- 2010- 2014^a

Year/ Month	2010	2011	2012	2013	2014
January	65	209	80	74	84
February	35	198	54	39	42
March	45	214	68	47	75
April	54	227	89	26	97
May	97	259	77	30	80
June	127	448	44	30	107
July	136	700	165	98	91
August	111	166	157	104	51
September	73	186	102	85	54
October	64	155	98	85	59
November	104	72	96	47	46
December	89	75	53	60	38
Total	1000	2909	1083	725	824

*Note: Dengue cases include all types of reported dengue cases (i.e. Dengue Fever cases, Dengue Haemorrhagic Fever cases and Dengue Shock Syndrome cases).

Table 2.2. Total Number of Dengue Fever Cases Reported by Month- Maldives- 2010- 2014^a

Year/ Month	2010	2011	2012	2013	2014
January	52	180	57	70	79
February	29	151	46	39	40
March	40	164	58	43	70
April	40	177	84	25	87
May	87	224	64	29	79
June	101	359	37	26	93
July	115	595	150	89	87
August	90	147	147	94	47
September	61	165	89	83	53
October	33	134	92	77	59
November	31	61	88	46	45
December	73	72	46	59	36
Total	52	180	57	70	79

Table 2.3. Total Number of Dengue Haemorrhagic Fever Cases Reported by Month- Maldives- 2010- 2014^a

Year/ Month	2010	2011	2012	2013	2014
January	13	27	22	3	5
February	6	44	7	0	2
March	5	50	9	4	5
April	14	48	5	1	9
May	10	31	13	1	1
June	24	80	7	4	14
July	20	97	12	7	3
August	21	19	8	10	4
September	10	20	9	2	1
October	31	19	5	6	0
November	73	10	8	1	1
December	16	3	5	1	1
Total	243	448	110	40	46

Table 2.4. Total Number of Dengue Shock Syndrome Cases Reported by Month- Maldives- 2010- 2014^a

Year/ Month	2010	2011	2012	2013	2014
January	0	2	1	1	0
February	0	3	1	0	0
March	0	0	1	0	0
April	0	2	0	0	1
May	0	4	0	0	0
June	2	9	0	0	0
July	1	8	3	2	1
August	0	0	2	0	0
September	2	1	4	0	0
October	0	2	1	2	0
November	0	1	0	0	0
December	0	0	2	0	1
Total	5	32	15	5	3

Table 2.5. Number and Incidence of Diarrhoea Cases Reported- Maldives- 2005- 2014^b

Year/	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of new cases	23,199	19,593	12,120	12,656	17,096	18,509	18,979	22,690	25,876	19,954
Incidence Rate/ 1000 population	79.06	72.08	40.54	42.33	40.54	61.14	58.40	67.04	75.80	58.46

Table 2.6. Total Number of Chikungunya Cases Reported by Month- Maldives- 2010- 2014^c

Year/ Month	2010	2011	2012	2013	2014
January	84	5	0	0	0
February	72	1	0	0	0
March	22	2	1	0	0
April	25	6	0	0	0
May	66	7	0	0	0
June	3	7	0	0	0
July	5	5	0	0	0
August	4	0	0	0	0
September	43	0	0	0	0
October	16	0	0	0	0
November	32	0	0	0	0
December	107	7	0	0	0
Total	479	40	1	0	0

Table 2.7. Incidence and Prevalence of Tuberculosis Cases Reported- Maldives- 2005- 2014^d

Year/	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total Number of cases under treatment	80	68	95	60	37	33	51	52	61	53
Incidence Rate/ 1000 population [Sputum Positive]	0.26	0.19	0.21	0.19	0.5	0.14	0.15	0.17	0.18	0.15
Incidence Rate/1000 population [Sputum Negative]	0.19	0.14	0.22	0.23	0.18	0.19	0.13	0.27	0.15	0.23
Prevalence Rate/1000 population [Sputum Positive]	0.14	0.12	0.16	0.09	0.07	0.06	0.09	0.19	0.26	0.22
Prevalence Rate/1000 population [Sputum Negative]	0.16	0.11	0.16	0.11	0.06	0.05	0.07	0.27	0.21	0.29

Table 2.8. Total Number of New Cases of Leprosy and Leprosy Cases Under Treatment- Maldives- 2005-2014^e

Year/	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
New Cases	15	8	11	06	10	07	14	07	03	08
Cases Under Treatment	10	06	13	05	06	12	06	12	08	12

Table 2.9. Incidence and Prevalence of Leprosy Cases Reported- Maldives- 2005- 2014^e

Year/	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Incidence Rate/ 1000 population	0.06	0.03	0.04	0.02	0.04	0.02	0.04	0.02	0.008	0.02
Prevalence Rate/1000 population	0.04	0.02	0.04	0.02	0.02	0.04	0.02	0.04	0.02	0.03

Table 2.10. Total Number of Individuals Screened for HIV - Maldives- 2005- 2014^f

Year/	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number	49,623	47,752	40,238	29,931	27,753	49,495	31,016	42,844	38,000	31,548

Table 2.11. Total Number of HIV Positive Cases Detected by Nationality - Maldives- 2005- 2014^f

Year/	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Maldivians	0	0	0	1	0	0	1	3	1	2
Expatriates	21	27	25	15	16	21	18	24	14	7
Total	21	27	25	16	16	21	19	27	15	9

Table 2.12. Total Number of Syphilis Cases Detected During Routine Screening- Maldives -2010-2014^g

Year/ Type of Screening	2010		2011		2012		2013		2014	
	Total screened	Syphilis Cases	Total screened	Syphilis Cases	Total screened	Syphilis Cases	Total screened	Syphilis Cases	Total screened	Syphilis Cases
Pregnant Women Visiting Ante-Natal Clinics	5833	0	1641	3	2691	0	2561	2	2747	2
Blood Donors	3815	0	3719	1	6627	0	5962	0	4502	0

Table 2.13. Total Number of Symptoms Related to STIs Reported- Maldives -2010-2014^h

Year/	2010	2011	2012	2013	2014
Male Urethral Discharge	58	8	16	14	4
Female Vaginal Discharge	1583	395	502	755	952
Male Genital Ulcer	13	4	1	1	6
Female Genital Ulcer	29	31	5	13	20
Total	1683	426	524	768	982

Table 2.14. Summary of Anaemia Among Women Based on Findings of National Micronutrient Survey – 2007- Maldives¹²

Women With Moderate Anaemia (%)	Women With Severe Anaemia (%)	Women With Normal Levels of Haemoglobin (%)	Number of Women Tested For Anaemia
15.1	0.3	84.6	1284

*Classifications: Moderate Anaemia= 7.0-10.9 g/dl
Severe Anaemia= less than 7.0 g/dl
Normal Haemoglobin levels= greater than or equal to 11g/dl*

Table 2.15. Summary of Anaemia Among Women Based on Findings of Multiple Indicator Cluster Survey – 2001- Maldives¹³

Women With Any Anaemia (%)	Women With Mild Anaemia (%)	Women With Moderate Anaemia (%)	Women With Severe Anaemia (%)	Number of Women Tested for Anaemia
51.3	40.5	10.0	0.9	1636

*Classifications: Mild Anaemia= 10.0 – 10.9g/dl for pregnant women and 10.0-11.9g/dl for non-pregnant women.
Moderate Anaemia= 7.0-9.9g/dl
Severe Anaemia= less than 7.0g/dl.*

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CHAPTER THREE



MORTALITY

”

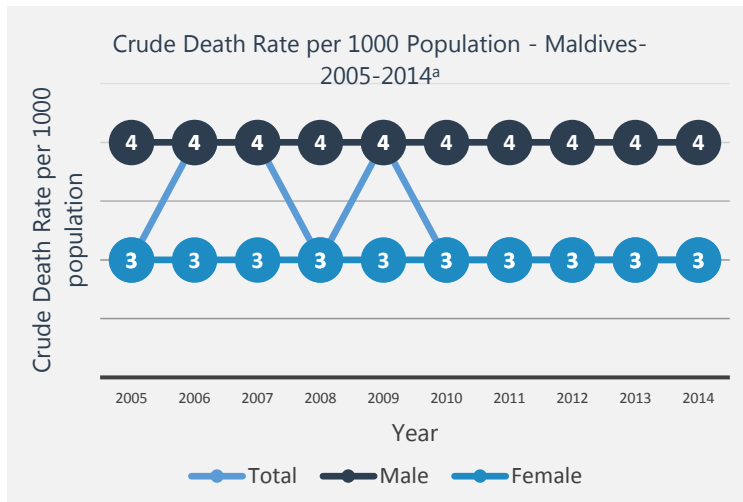
إِنَّا لِلّٰهِ وَإِنَّا إِلَيْهِ رَاجِعُونَ

“

Quran: Surat Al Bagarah, Verse: 2:156

To Allah we belong and to him we shall return

CRUDE DEATH RATE



DEFINITIONS

Crude Death Rate is defined by U.S. Census Bureau¹ as “The average annual number of deaths during a year per 1000 population at mid-year”.

2014 QUICK FACTS

Crude Death Rate for the total population ^a	3
Crude Death Rate for male population ^a	4
Crude Death rate for female population ^a	3

Over the past decade, Crude Death Rate have been fairly consistent with 4 deaths per 1000 population for males and 3 deaths per 1000 population for females^a. Similarly, the Total Crude Death Rate had fluctuated slightly between 3 and 4 deaths per 1000 population during the past 10 years^a.

^aThe analysis is based on primary data available from Vital Registration System of Maldives.

TOTAL DEATHS

2014 QUICK FACTS

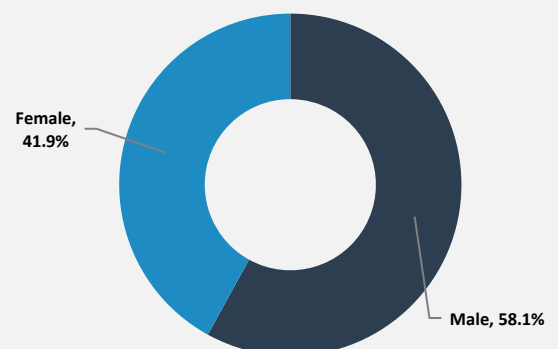
Total Number of Deaths ^b	1150
Number of Male Deaths ^b	668
Number of Female Deaths ^b	482
Number of Deaths Occurred in Male ^b	549
Number of Deaths Occurred in Atolls ^b	496
Number of Reported Deaths Occurred Abroad	105

2014 QUICK FACTS

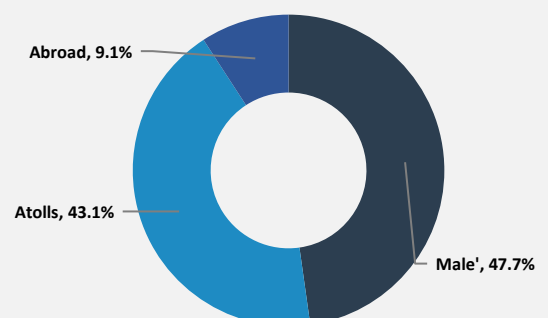
Around 7 in 12 deaths in Maldives in 2014 are male deaths^b.

Almost 5 in 12 deaths in Maldives in 2014 are female deaths^b.

Percentage of Deaths By Sex, 2014^a

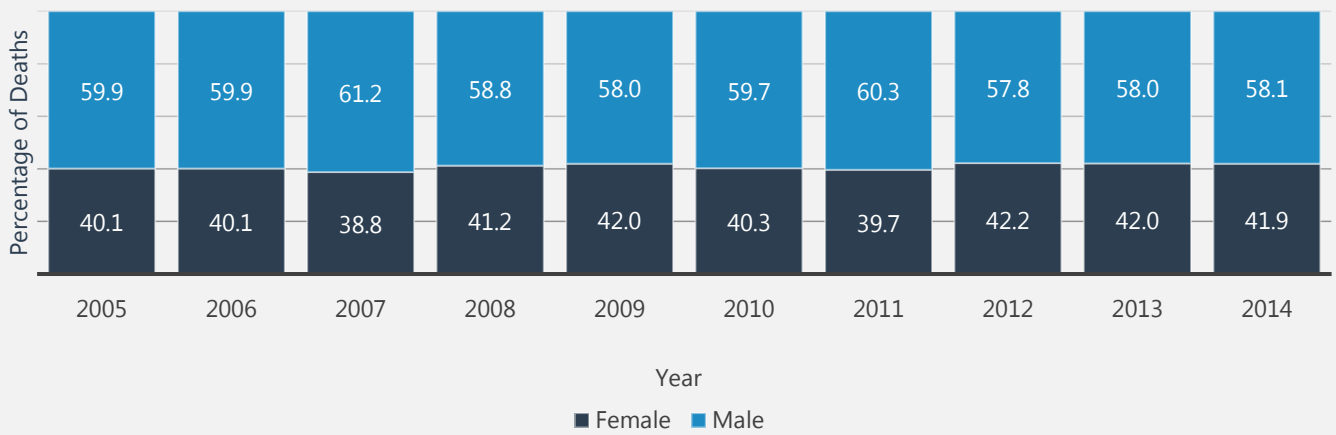


Percentage of Deaths by Locality, 2014^b



More males (58.1%) than females (41.9%) had died in 2014^b. This trend is similar over the past decade^b.

Percentage of Male and Female Deaths, 2005-2014^b



^bThe analysis is based on primary data available from Vital Registration System of Maldives.

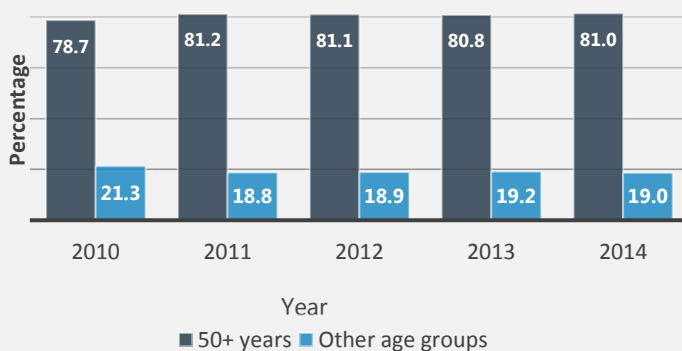
AGE OF DEATH

2014 QUICK FACTS

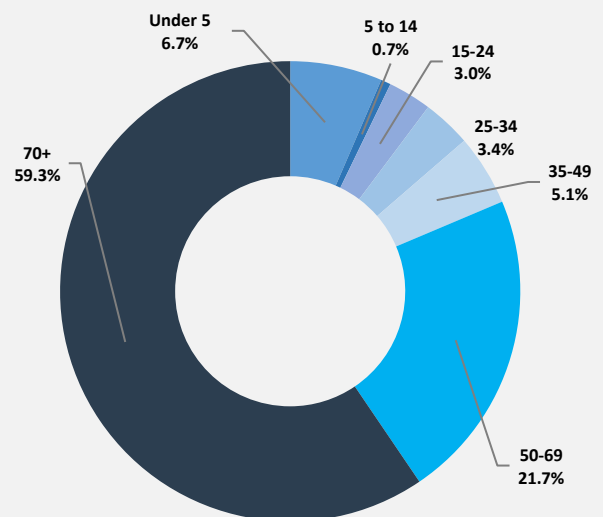
Total Number of Deaths ^c	1143
Number of Under 5 Deaths ^c	77
Number of Deaths Among 5 – 14 Year Olds ^c	8
Number of Deaths Among 15 – 24 Year Olds ^c	35
Number of Deaths Among 25-34 Year Olds ^c	39
Number of Deaths Among 35-49 Year Olds ^c	57
Number of Deaths Among 50-69 Year Olds ^c	250
Number of Deaths Among 70 Years & Older ^c	680

Almost 3 in 5 deaths in Maldives in 2014 contribute to elderly aged 70 years and over^c.

Percentage of Deaths Among 50 Years and Over, 2010-2014^c



Percentage of Total Deaths by Age Groups, 2014^c



Over 80 percent of deaths in Maldives are concentrated among elderly (50 years and over)^c. A similar trend is observed over the past 4 years^c. In 2010, the percentage of deaths among elderly was 78.7%^c.

^cThe analysis is based on primary data available from Vital Registration System of Maldives.

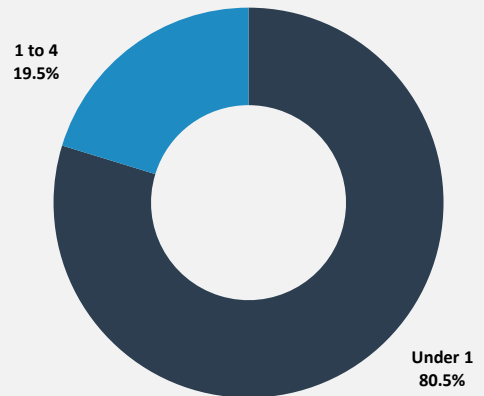
UNDER 5 DEATHS

2014 QUICK FACTS

Total Number of Under 5 Deaths ^d	77
Number of Under 1 Deaths [Infant Deaths] ^d	62
Number of Deaths Among 1-4 Years ^d	15

Over 8 in 10 under 5 deaths in Maldives in 2014 occurred among infants below 1 year^d.

Percentage of Under 5 Deaths by Age Groups, 2014^d



^dThe analysis is based on primary data available from Vital Registration System of Maldives.

UNDER 5 MORTALITY RATE

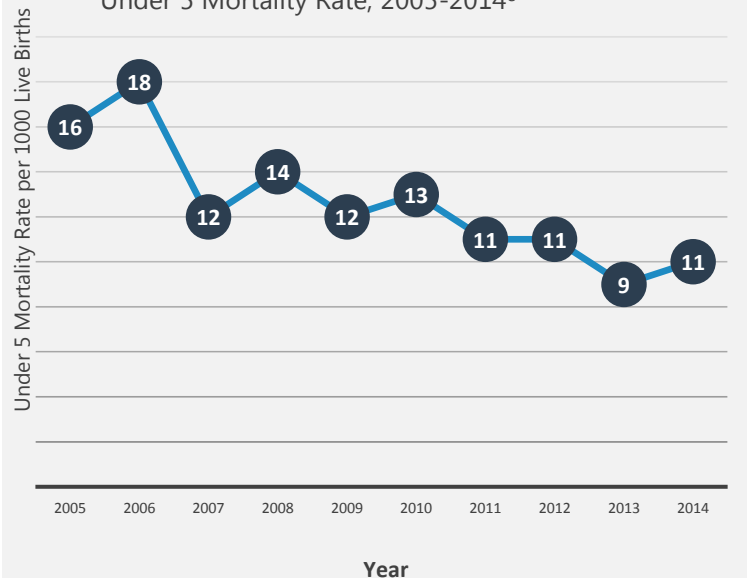
DEFINITIONS

UNDER 5 MORTALITY RATE [U5MR] is defined by UNICEF² as “probability of dying between birth and exactly five years of age expressed per 1000 live births”.

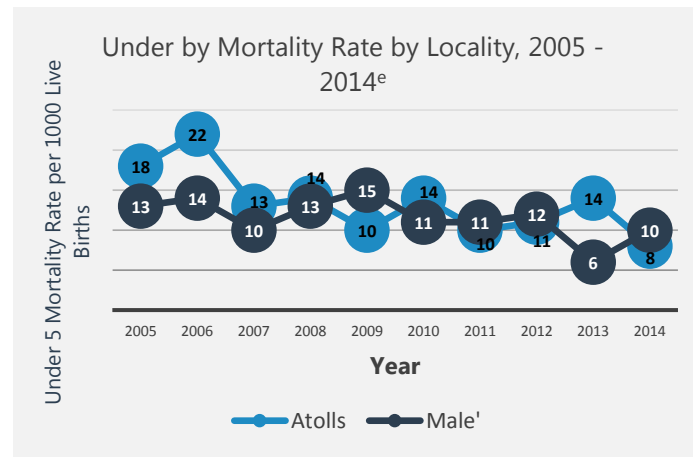
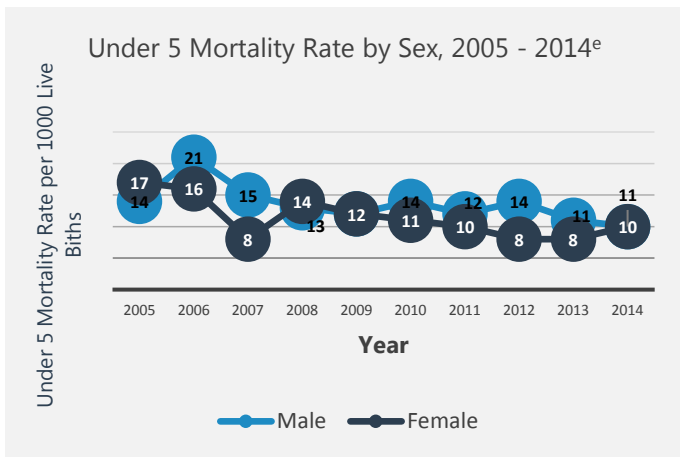
2014 QUICK FACTS

U5MR for The Total Population ^e	11
U5MR for The Male Population ^e	11
U5MR for The Female Population ^e	10
U5MR in Atolls ^e	8
U5MR in Male ^e	10

Under 5 Mortality Rate, 2005-2014^e



Over the past decade, slight fluctuations can be observed for Under 5 Mortality Rate for the total population which declined from 16 deaths per 1000 live births in 2005 to 11 deaths per 1000 live births in 2014^e. The highest under 5 Mortality Rate (18 deaths per 1000 live births) were observed for the year 2006^e. Comparisons between male and female population of Maldives in 2014 also showed fluctuations in the under 5 Mortality Rates^e. However, overall the Under 5 Mortality Rate declined from 14 deaths per 1000 live births to 11 deaths per 1000 live births for males and from 17 deaths per 1000 live births to 10 deaths per 1000 live births for females between the years 2005 and 2014^e. The highest under 5 Mortality Rates for males and females were observed in 2006 (21 deaths per 1000 live births for males and 16 deaths per 1000 live births for females)^e. In most of the years between 2005 and 2014, under 5 Mortality Rate have been slightly higher for males when compared to females^e.

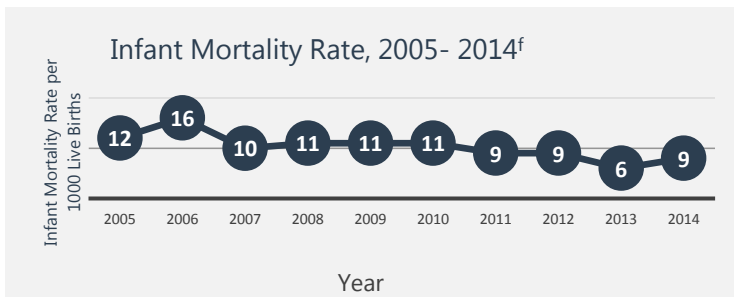


The difference between Under 5 Mortality Rate for atolls and Male' have also reduced over the past decade^e. At present atolls have a lower under 5 mortality rate (8 deaths per 1000 live births) than Male' (10 deaths per 1000 live births)^e.

NOTE: Most of the complicated and/or serious cases are likely to be referred to National Referral Hospital located in Male'. This may have a tendency to distort/skew the rates to reflect higher rates in Male' than Atolls.

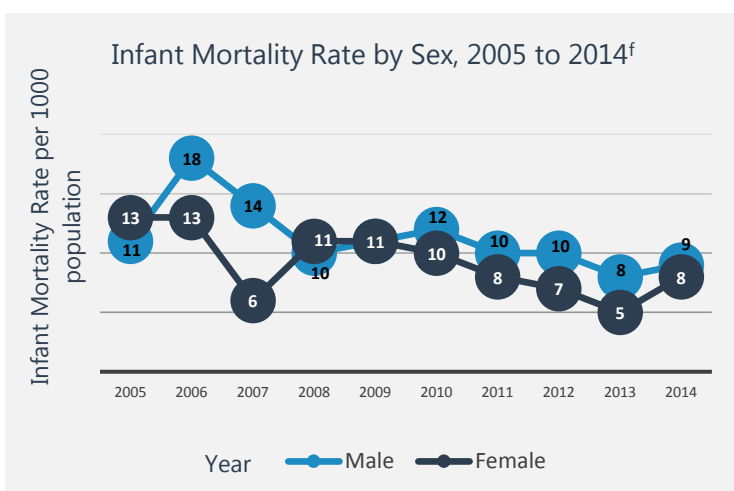
^eThe analysis is based on primary data available from Vital Registration System of Maldives.

INFANT MORTALITY RATE



DEFINITIONS

INFANT MORTALITY RATE [IMR] is defined by UNICEF² as “probability of dying between birth and exactly one year of age expressed per 1000 live births”.



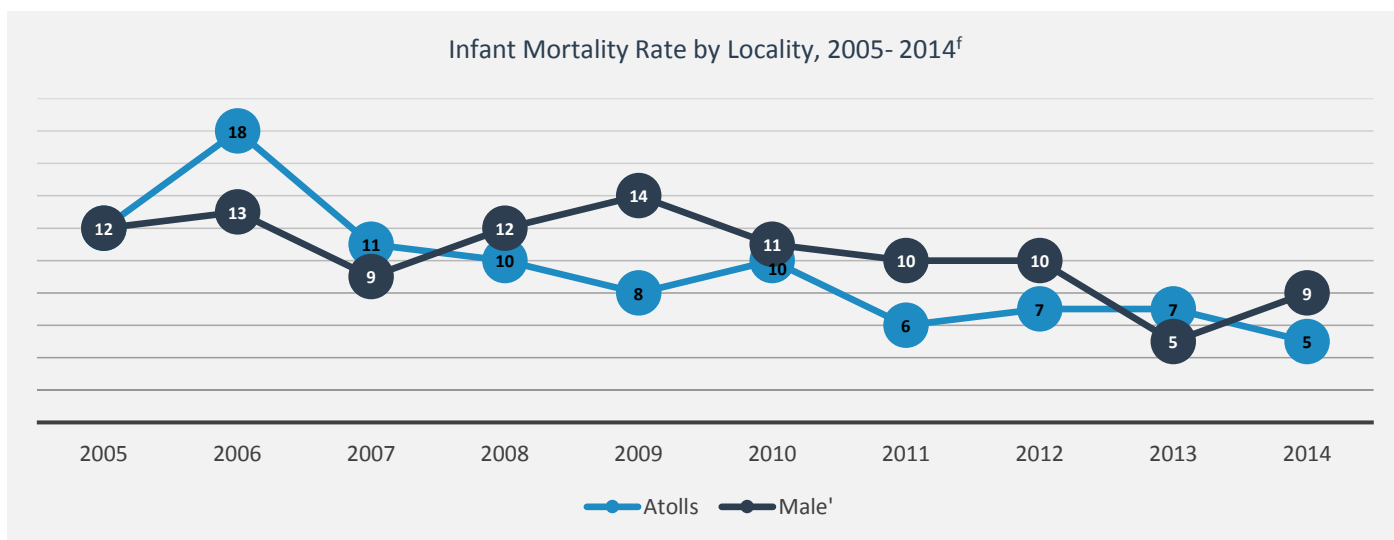
2014 QUICK FACTS

IMR for the Total Population ^f	9
IMR for the Male Population ^f	9
IMR for the Female Population ^f	8
IMR in Atolls ^f	5
IMR in Male' ^f	9

Although with slight fluctuations, Infant Mortality Rate have also declined for the total population from 12 deaths per 1000 live births in 2005 to 9 deaths per 1000 live births in 2014^f. Over the span of past 10 years, the highest Infant Mortality Rate was observed in 2006 (16 deaths per 1000 live births)^f. The Infant Mortality Rates also showed slight fluctuations for males and females over the past 10 years^f. The Infant Mortality Rates observed for males and females (9 deaths per 1000 live births and 8 deaths per 1000 live births, respectively) are slightly lower than those observed for both sexes in 2005 (11 deaths per 1000 live births for males and 13 deaths per 1000 live births for females)^f. The Infant Mortality Rate peaked at 18 deaths per 1000 live births for males in 2006, while highest rates for Infant Mortality for females were observed in 2005 and 2006 in the past decade^f. In general, the Infant Mortality Rates tends to be slightly higher for males than females in the last 10 years^f.

Although there was no difference between Infant Mortality Rates for Male' and Atolls in 2005 [i.e 12 deaths per 1000 live births for both localities], the 9 years that followed showed fluctuations among Infant Mortality Rates between Male' and Atolls^f. Infant Mortality Rate peaked for Atolls in 2006 at 18 deaths per 1000 live births^f. On the contrary, during the past ten years the highest Infant Mortality Rate of 14 deaths per 1000 live births for Male' was recorded in 2010^f.

Since 2008, Atolls showed a lower Infant Mortality Rate than Male'^f. In 2014, Atolls had an Infant Mortality Rate of 5 deaths per 1000 live births which is more than half the rate observed in 2005^f.



NOTE: Most of the complicated and/or serious cases are likely to be referred to National Referral Hospital located in Male'. This may have a tendency to distort/ skew the rates to reflect higher rates in Male' than Atolls.

^fThe analysis is based on primary data available from Vital Registration System of Maldives.

NEONATAL MORTALITY RATE

DEFINITIONS

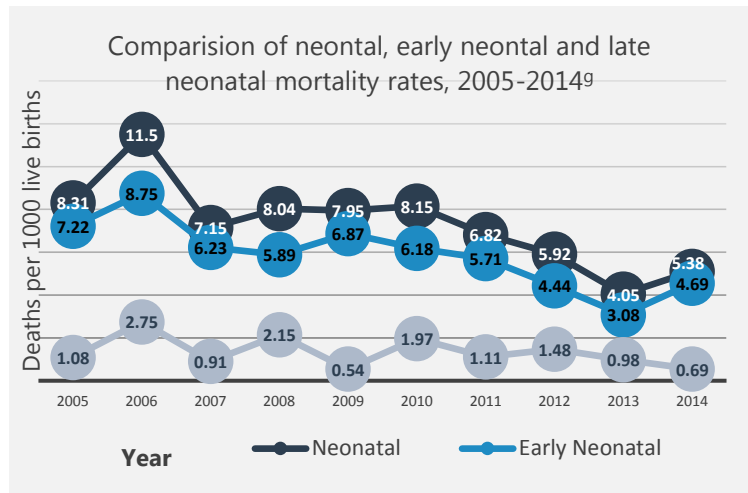
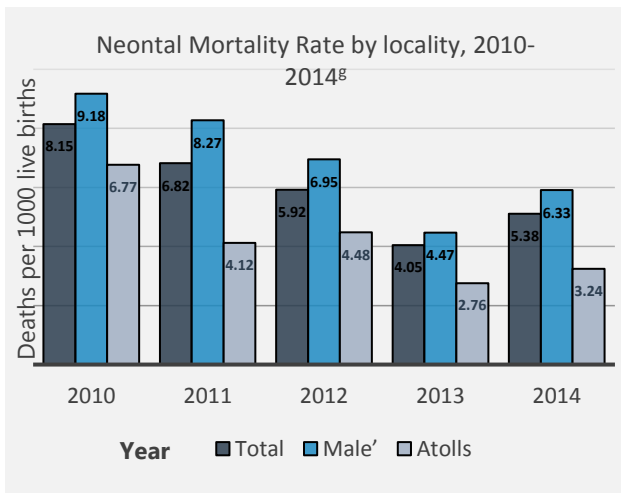
NEONATAL MORTALITY RATE [NMR] is defined by WHO³ as “Probability that a child born in a specific year or period will die during the first 28 completed days of life if subject to age-specific mortality rates of that period, expressed per 1000 live births.

Neonatal deaths (deaths among live births during the first 28 completed days of life) may be subdivided into **early neonatal deaths**, occurring during the first 7 days of life, and **late neonatal deaths**, occurring after the 7th day but before the 28th completed day of life”.

Neonatal Mortality Rate has decreased from 8.31 per 1000 livebirths in 2005 to 5.38 per 1000 live births in 2014^g. The lowest neonatal mortality rate recorded during this timeframe was in 2013 with 4.05 neonatal deaths for every 1000 live births^g.

2014 QUICK FACTS

Neonatal Mortality Rate for the total population ^g	5.38
Neonatal Mortality Rate in Atolls ^g	3.24
Neonatal Mortality Rate in Male' ^g	6.33
Early Neonatal Mortality Rate for the total population ^g	4.69
Early Neonatal Mortality Rate in Atolls ^g	2.78
Early Neonatal Mortality Rate in Male' ^g	5.70
Late Neonatal Mortality Rate for the total population ^g	0.69
Late Neonatal Mortality Rate in Atolls ^g	0.46
Late Neonatal Mortality Rate in Male' ^g	0.63



Overall, the neonatal mortality rate tends to be higher for Male' when compared to other atolls^g. A similar trend was observed over the past 5 years^g. A significant majority of neonatal deaths are early neonatal deaths^g

Total Number of Infant, Neonatal, Early Neonatal and Late Neonatal Deaths, 2014^g

Infant Deaths (< 1 year)	Neonatal Deaths (0-27 days)	Early Neonatal Deaths (0-6 Days)	Late Neonatal Deaths (7-27 days)
62	39	34	5

In 2014 alone, early neonatal death rate was around seven times higher than late neonatal death rate^g. Similarly, among the total number of infant deaths observed in 2014, 62.9% (n=39) of all infant deaths were attributed to neonatal deaths^g. A significant percentage of 87.2% (n=34) of these neonatal deaths were early neonatal deaths^g.

NOTE: Most of the complicated and/or serious cases are likely to be referred to National Referral Hospital located in Male'. This may have a tendency to distort/ skew the rates to reflect higher rates in Male' than Atolls.

^gThe analysis is based on primary data available from Vital Registration System of Maldives.

MATERNAL MORTALITY RATIO

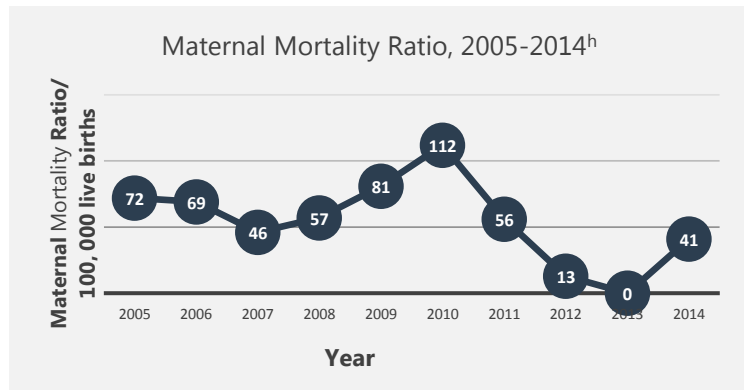
DEFINITIONS

MATERNAL MORTALITY RATIO [MMR] is defined by WHO³ as "The annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, expressed per 100 000 live births, for a specified time period".

2014 QUICK FACTS

Total Number of Maternal Deaths ^h	3
Maternal Mortality Ratio ^h	41

Although, MMR have declined from 72 deaths/100,000 live births in 2005 to 41 deaths/100,000 live births in 2014, significant fluctuations for the MMR can be observed for the past 10 years^h. Initially MMR declined from 2005 to 2007^h. Since, 2008 MMR had been steadily increasing until it peaked at 112 deaths/100, 000 live births in 2011^h. Since 2012 MMR started to decline again^h. In 2013 no maternal deaths were reported in Maldives^h. However, this increased to 41 deaths/100,000 live births in 2014^h.



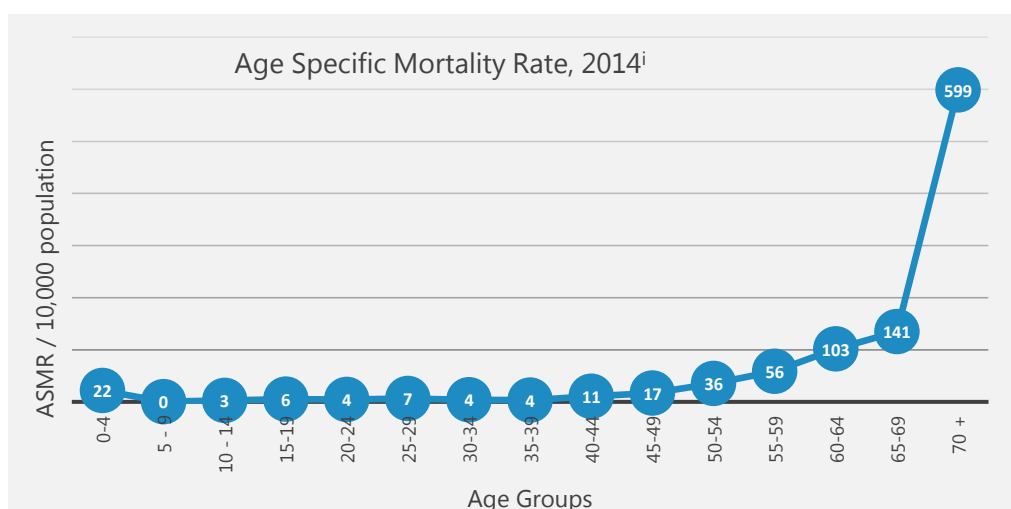
NOTE: Due to the small population of Maldives, even one single death can have a large impact of the MMR figures. For example, in 2011, 8 maternal deaths had occurred in Maldives which significantly increased the MMR to 112 deaths/100,000 live births.

Number of Maternal Deaths – Maldives – 2005- 2014^h

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
4	4	3	4	6	8	4	1	0	3

^hThe analysis is based on primary data available from Vital Registration System of Maldives.

AGE SPECIFIC MORTALITY RATE



DEFINITIONS

AGE SPECIFIC MORTALITY RATE [ASMR] is defined by CDC⁴ as “a mortality rate limited to a particular age group. The numerator is the number of deaths in that age group; the denominator is the number of persons in that age group in the population”.

In this section, ASMR is expressed as per 10,000 population.

In 2014, apart from ASMR of 0-4 year olds (22 deaths/10,000 population), the ASMR was relatively low until 35-39 age groupⁱ. Since 40-44 age group, a significant increase can be seen for older age groups indicating that more deaths occurs among older age groups of the populationⁱ. A similar trend can be observed for the past 3 years (refer to the summary table for additional information)ⁱ.

ⁱThe analysis is based on primary data available from Vital Registration System of Maldives.

LEADING CAUSES OF DEATHS

Top 10 leading causes of death for all ages by ICD-10 classification – 2014^j

1. I30-I52 - Other forms of Heart Disease (N=156)
2. I20-I25 - Ischaemic heart diseases (N=127)
3. I60-I69 - Cerebrovascular diseases (N=123)
4. I10-I15- Hypertensive Diseases (N=68)
5. J40-J47- Chronic lower respiratory diseases (N=63)
6. A30-A49- Other bacterial diseases (N=50)
7. N17-N19- Renal Failure (N=42)
8. R50-R69- General Symptoms and signs (N=32)
9. E10-E14- Diabetes Mellitus (N=29)
10. J95-J99- Other diseases of the respiratory system (N=23)

A peek at the top 10 leading causes of death in 2014 signifies the burden of Non-Communicable Diseases (NCDs) in the country^j. The predominant cause of death in 2014 was cardiovascular conditions and cerebrovascular conditions such as heart diseases, cerebrovascular diseases and hypertensive diseases which claimed 41.2 percent (n=474) of deaths in 2014^j

NOTE 1: The ranking of top 10 leading causes of death had excluded 76 deaths for which the cause of death was unknown or the cause of death was ill-defined^j.

NOTE 2: Please refer to Table 3.9 of the summary tables of this chapter to view top 20 leading causes of death.

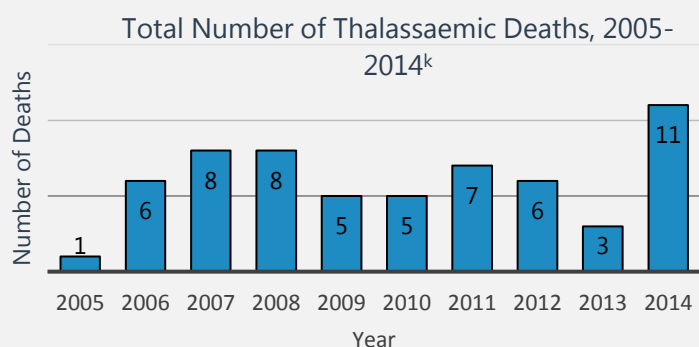
DEATHS AMONG THALASSAEMICS

DEFINITIONS

THALASSAEMIA is defined by WHO⁵ as an inherited blood disorder in which affected individuals are unable to produce enough haemoglobin (a component of red blood cells) which diminishes the red blood cells ability to supply oxygen to all parts of the body, hence, organs become “starved” for oxygen resulting in poor functional capacity of such organs.

2014 QUICK FACTS

Total Number of Deaths ^k	11
Under 10 deaths ^k	NIL
Deaths among 10-19 year olds ^k	7
Deaths among 20 years and older ^k	4



Although with fluctuations, deaths among thalassaemics had increased from 1 death in 2005 to 11 deaths in 2014^k. Thalassaemic deaths seems to be concentrated more on older children (10-19 year olds) compared to under 10 year olds^k. Deaths had also occurred among 20 years and above thalassaemics in 2011 and 2014^k

^kThe analysis is based on data shared by Maldives Blood Services

SUMMARY TABLES

Table 3.1. Crude Death Rate per 1000 population , 2005 -2014^a

Year/ Sex	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Male	4	4	4	4	4	4	4	4	4	4
Female	3	3	3	3	3	3	3	3	3	3
Total	3	4	4	3	4	3	3	3	3	3

Table 3.2. Total Number of Deaths by Sex and Locality, 2005 – 2014^b

Year/ Sex	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Republic										
Male	615	649	687	629	675	660	686	656	649	668
Female	412	435	436	441	488	445	451	479	471	482
Total	1027	1084	1123	1070	1163	1105	1137	1135	1120	1150
Male'										
Male	184	211	222	229	264	279	272	333	303	314
Female	143	143	150	161	186	179	196	231	210	235
Total	327	354	372	390	450	458	468	564	513	549
Atolls										
Male	431	438	465	400	397	356	381	310	315	288
Female	269	292	286	280	289	255	234	245	229	208
Total	700	730	751	680	686	611	615	555	544	496
Abroad										
Male	0	0	0	0	14	25	33	13	31	66
Female	0	0	0	0	13	11	21	3	32	39
Total	0	0	0	0	27	36	54	16	63	105

Table 3.1. Crude Death Rate per 1000 population, 2005 -2014^a

Year & Sex/ Age group	2010			2011			2012			2013			2014		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	78	45	33	65	37	28	66	40	26	46	29	17	62	34	28
1-4	11	5	6	16	9	7	18	15	3	21	11	10	15	6	9
5-9	8	6	2	9	5	4	6	3	3	4	3	1	1	0	1
10-14	12	8	4	10	5	5	8	3	5	9	4	5	7	6	1
15-19	21	14	7	11	5	6	14	8	6	16	8	8	19	14	5
20-24	21	16	5	22	17	5	18	10	8	20	14	6	16	12	4
25-29	15	10	5	14	10	4	11	6	5	20	13	7	26	21	5
30-34	15	10	5	12	9	3	7	7	0	20	12	8	13	8	5
35-39	9	5	4	12	4	8	16	9	7	17	9	8	8	6	2
40-44	19	9	10	17	11	6	19	5	14	16	10	6	21	12	9
45-49	26	19	7	26	16	10	32	18	14	26	17	9	30	21	9
50-54	47	26	21	47	31	16	52	33	19	40	29	11	53	29	24
55-59	50	30	20	39	27	12	52	32	20	62	37	25	65	43	22
60-64	72	50	22	45	25	20	77	44	33	62	38	24	64	38	26
65-69	120	69	51	110	61	49	95	55	40	73	45	28	68	44	24
70+	581	338	243	682	414	268	644	368	276	668	370	298	682	374	308
TOTAL	1,105	660	445	1137	686	451	1135	656	479	1120	649	471	1150	668	482

Table 3.4. Under 5 Mortality Rate per 1000 Live Births by Sex & Locality, 2005 – 2014^e

Year/ Sex	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Republic										
Male	14	21	15	13	12	14	12	14	11	11
Female	17	16	8	14	12	11	10	8	8	10
Total	16	18	12	14	12	13	11	11	9	11
Male'										
Male	10	16	13	14	17	15	11	16	7	12
Female	18	12	6	12	13	7	12	8	5	9
Total	13	14	10	13	15	11	11	12	6	10
Atolls										
Male	18	25	17	13	8	12	12	12	16	8
Female	17	19	9	16	11	15	8	10	11	8
Total	18	22	13	14	10	14	10	11	14	8

Table 3.5. Infant Mortality Rate per 1000 Live Births by Sex and Locality, 2005 – 2014^f

Year/ Sex	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Republic										
Male	11	18	14	10	11	12	10	10	8	9
Female	13	13	6	11	11	10	8	7	5	8
Total	12	16	10	11	11	11	9	9	6	9
Male'										
Male	8	14	12	12	16	15	10	13	7	10
Female	16	12	6	12	13	7	11	7	4	8
Total	12	13	9	12	14	11	10	10	5	9
Atolls										
Male	14	21	15	9	7	9	8	6	8	5
Female	10	15	6	11	9	12	5	8	6	4
Total	12	18	11	10	8	10	6	7	7	5

Table 3.6. Neonatal, Early Neonatal and Late Neonatal Mortality Rates per 1000 Live Births by Locality, 2005 – 2014^g

Year/ Locality	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Early Neonatal Mortality Rate (0-6 days)										
Republic	7.22	8.75	6.23	5.89	6.87	6.18	5.71	4.44	3.08	4.69
Male'	7.73	7.02	5.18	5.38	9.5	6.3	6.52	4.93	3.41	5.70
Atolls	6.82	10.26	7.16	6.36	4.28	6.16	4.12	4.11	2.30	2.78
Late Neonatal Mortality Rate (7-27 days)										
Republic	1.08	2.75	0.91	2.15	0.54	1.97	1.11	1.48	0.98	0.69
Male'	0.41	3.69	1.62	2.99	1.09	2.89	1.76	2.02	1.06	0.63
Atolls	1.62	1.92	0.29	1.38	0.00	0.62	0.00	0.37	0.46	0.46
Neonatal Mortality Rate (0-27 days)										
Republic	8.31	11.50	7.15	8.04	7.95	8.15	6.82	5.92	4.05	5.38
Male'	8.14	10.71	6.80	8.36	11.67	9.18	8.27	6.95	4.47	6.33
Atolls	8.44	12.18	7.45	7.74	4.28	6.77	4.12	4.48	2.76	3.24

Table 3.7. Number of Maternal Deaths and Maternal Mortality Ratio/100,000 Live Births, 2005-2014^h

Year/	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of deaths	4	4	3	4	6	8	4	1	0	3
Maternal Mortality Ratio	72	69	46	57	81	112	56	13	0	41

Table 3.8. Age Specific Mortality Rate by Sex per 10,000 Population, 2012-2014ⁱ

Year & Sex/ Age group	2012			2013			2014		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0-4	26	34	18	20	24	16	22	21	21
5-9	2	2	2	1	2	1	0	0	1
10-14	3	2	4	3	3	4	3	4	1
15-19	4	4	3	5	4	5	6	9	3
20-24	4	5	4	5	7	3	4	6	2
25-29	3	3	3	5	7	4	7	11	3
30-34	3	5	0	7	9	5	4	5	3
35-39	7	9	6	8	8	7	4	5	2
40-44	10	5	14	8	11	6	11	12	9
45-49	19	22	17	15	21	10	17	24	10
50-54	36	46	27	27	39	15	36	38	32
55-59	59	70	47	63	72	52	56	72	40
60-64	132	146	118	103	122	83	103	115	86
65-69	187	214	159	145	177	112	141	181	96
70+	589	610	564	600	607	591	599	603	591

Table 3.9. Top 20 causes of death for all age groups, 2014^j

Rank	ICD Code	Cause of Death	Male	Female	Total
1	(I30–I52)	Other forms of heart disease	87	69	156
2	(I20–I25)	Ischaemic heart diseases	83	44	127
3	(I60–I69)	Cerebrovascular diseases	75	48	123
4	(I10–I15)	Hypertensive diseases	40	28	68
5	(J40–J47)	Chronic lower respiratory diseases	24	39	63
6	(A30–A49)	Other bacterial diseases	24	26	50
7	(N17–N19)	Renal failure	26	16	42
8	(R50–R69)	General symptoms and signs	22	10	32
9	(E10–E14)	Diabetes mellitus	16	13	29
10	(J95–J99)	Other diseases of the respiratory system	14	9	23
11	(J80–J84)	Other respiratory diseases principally affecting the interstitium	9	13	22
12	(C76–C80)	Malignant neoplasms of ill-defined, secondary and unspecified sites	12	8	20
13	(R00–R09)	Symptoms and signs involving the circulatory and respiratory systems	10	9	19
14	(E70–E90)	Metabolic disorders	10	7	17
15	(C15–C26)	Malignant neoplasms of digestive organs	9	6	15
16	(J60–J70)	Lung diseases due to external agents	5	7	12
17	C30–C39)	Malignant neoplasms of respiratory and intrathoracic organs	9	1	10
18	(K70–K77)	Diseases of liver	9	1	10
19	(J10–J18)	Influenza and pneumonia	2	6	8
20	(N00–N08)	Glomerular diseases	3	5	8

Table 3.10. Number of Thalassaemic Deaths, 2005–2014^k

Year/ Age group	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
6–11 months	0	0	0	0	0	0	1	0	0	0
1–4 years	0	0	0	1	0	0	0	1	0	0
5–9 years	0	0	0	1	1	1	0	0	0	0
10–14 years	1	2	3	2	2	1	2	1	2	4
15–19 years	0	4	5	4	2	3	4	2	1	3
20 and above	0	0	0	0	0	0	0	2	0	4
Total	1	6	8	8	5	5	7	6	3	11

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CHAPTER FOUR



PUBLIC HEALTH

PREVENTION IS BETTER THAN CURE

WHAT IS PUBLIC HEALTH?

CDC Foundation¹ defines public health as “the science of protecting and improving the health of families and communities through promotion of healthy lifestyles, research for disease and injury prevention and detection and control of infectious diseases”. In general, public health seeks to protect the health of the whole population of a specified area¹.

This chapter will discuss about some of the public health concerns for Maldives. It will also provide some data on preventive measures and health promotion initiatives that are currently being undertaken within Maldives. This will include immunization coverage, exclusive breastfeeding, malnutrition among children, vitamin A supplementation, deworming, contraceptive prevalence rate and unmet need for family planning.

IMMUNIZATION COVERAGE

DEFINITIONS

IMMUNIZATION COVERAGE RATE BY VACCINE FOR EACH VACCINE IN THE NATIONAL SCHEDULE is defined by WHO² as “Percentage of the target population that has received the last recommended dose for each vaccine recommended in the national schedule by vaccine. This should include all vaccines within a country’s routine immunization schedule”.

Overall, Maldives had a relatively high immunization coverage rate ranging from 98% to 100% for all essential vaccinations covered under national schedule for immunization³. A similar trend can be observed for the past decade (refer to the summary table for additional information)³.

2014 QUICK FACTS

Immunization Coverage Rate for:

BCG ^a	99%
Hepatitis B 3 rd Dose ^a	99%
OPV 3 rd Dose ^a	100%
Pentavalent Vaccine (DTP+HEP B+HIB) 3 rd Dose ^a	98.7%
Measles ^a	100%
MMR ^a	98%
Tetanus Toxoid (5 th Dose) ^a	98%

^aThe analysis and write-up is based on programmatic and surveillance records shared by Extended Program on Immunization of Health Protection Agency, Ministry of Health.

EXCLUSIVE BREASTFEEDING

WHAT IS EXCLUSIVE BREASTFEEDING?

According to WHO³, “exclusive breastfeeding means that the infant receives only breast milk. No other liquids or solids are given- not even water- with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines”.

It is recommended by WHO³ that for infants to attain optimal growth, health and development, it is vital for infants to be exclusively breastfed for the first 6 months of their lives.

The most recent data on exclusive breastfeeding is available from Maldives Demographic and Health Survey [MDHS] 2009⁴. According to this survey, 48 percent of the youngest children under 3 years who were living with their mothers were exclusively breastfed up to first 6 months of their age⁴.

Nearly 1 in 2 youngest children under 3 years of age, who lived with their mothers were exclusively breastfed up to first 6 months of their age⁴.

MALNUTRITION AMONG CHILDREN

In Maldives, the most recent data for malnutrition among children below the age of 5 years is available from the results of MDHS 2009⁴.

KEY FINDINGS OF MDHS 2009⁴

Total Number of Under 5 Children	2513
Percentage of Under 5 Children Stunted	18.9%
Percentage of Under 5 Children Severely Stunted	6.4%
Percentage of Under 5 Children Wasted	10.6%
Percentage of Under 5 Children Severely Wasted	2.5%
Percentage of Under 5 Children Underweight	17.3%
Percentage of Under 5 Children Severely Underweight	3.3%
Percentage of Under 5 Children Overweight	2.2%

The findings of MDHS 2009 showed that among the 4 different categories of malnutrition explored, the highest number of children aged below 5 years had experienced the irreversible form of undernutrition known as stunting⁴. Nationally, 18.9 percent of under 5 children were stunted while 6 percent of under 5 children were severely stunted⁴.

This is followed by underweight where 17.3 percent of under 5 children were underweight and 3.3 percent of under 5 children were severely underweight⁴.

Wasting is also significant with 10.6 percent under 5 children being wasted while 2.5 percent under 5 children being severely wasted⁴. Meanwhile, 2.2 percent children aged below 5 years were overweight⁴.

Stunting topped the malnutrition indicators measured in MDHS 2009⁴ with almost 1 in 4 children aged below 5 years being affected by stunting to some extent (i.e. stunted or severely stunted).

DEFINITIONS

World Food Program [WFP]⁵ defines malnutrition as “a condition resulting when a person’s diet does not provide adequate nutrients for growth and maintenance or when a person is not able to adequately utilize the food consumed due to illness. “

WFP⁵ further delineate that malnutrition includes both undernutrition and over nutrition.

In this section the following categories of malnutrition will be explored for children below the age of 5 years which are calculated in reference to the growth standards published by WHO in 2006.

STUNTING: According to WFP⁵ and Maldives Demographic and Health Survey [MDHS] 2009⁴, stunting is measured using the indicator “low height-for age” compared to WHO international growth reference standards. WFP⁵ and MDHS 2009⁴ further explains that stunting is developed slowly overtime and the condition is not reversible. It is caused by either or both the long term intake of poor diet or recurrent or chronic infections^{4,5}.

WASTING: The indicator used to measure wasting is ‘low weight-for-height’ when compared to WHO international growth reference standard for a child with same age^{4,5}. Wasting is also known as acute malnutrition and is caused by sudden increase in weight loss or due to failure in gaining weight and is usually associated with recent illnesses or recent episodes of food insecurity^{4,5}.

UNDERWEIGHT: a reflection of both stunting and wasting, the indicator used to measure underweight is “low weight-for-age” when compared to WHO international growth reference standard for a child of the same age^{4,5}.

OVERWEIGHT: MDHS 2009⁴ classifies overweight as ‘high weight-for-age’ when compared to WHO international growth reference standard for a child of the same age. According to WFP⁵ over nutrition or an unbalance nutrition can lead to overweight.

VITAMIN A SUPPLEMENTATION

KEY FINDINGS OF MDHS 2009⁴

Total Number of Children Aged 6-59 Months **3276**

Percentage of Children Aged 6-59 Months Who Received Vitamin A Supplements in the Past 6 Months **48.1%**

The most recent nationwide data available on Vitamin A supplementation is from Maldives Demographic and Health Survey [MDHS] 2009⁴. Findings of MDHS 2009⁴ showed that 48.1 percent of children aged 6-59 years of age have had a Vitamin A supplementation in the past 6 months preceding the survey.

WHAT IS VITAMIN A?

MDHS 2009⁴ defines Vitamin A as “an essential micronutrient for the immune system that plays an important role in maintaining the epithelial tissue in the body”.

Severe lack of Vitamin A (known as severe Vitamin A Deficiency) can cause damage to eyes, enhance the severity of infections (eg: measles, diarrhoea) among children and also decrease the recovery speed from illnesses⁴. A method to prevent at risk children from developing Vitamin A deficiency is to give periodic dosing (usually done every 6 months) of vitamin A supplement to such children⁴.

Almost 1 in 2 children aged 6-59 months in Maldives had received a Vitamin A supplementation over the past 6 months preceding the data collection period for MDHS 2009⁴.

DEWORMING

PURPOSE OF DEWORMING

According to MDHS 2009⁴, regular treatment of children with special medications for deworming is a cost-effective, simple method that can be used to combat infections with helminths or intestinal worms. Infections with Helminths or intestinal worms can negatively impact the physical development of children and are associated with iron deficiency anemia and other nutritional deficiencies that may have negative consequences on the physical and mental development of children⁴.

Findings from MDHS 2009⁴ are the most recent nationwide data available on deworming medication. Findings of this survey indicated that 68.6 percent of children aged 6-59 years of age have been given deworming medication over the past 6 months preceding the survey⁴.

KEY FINDINGS OF MDHS 2009⁴

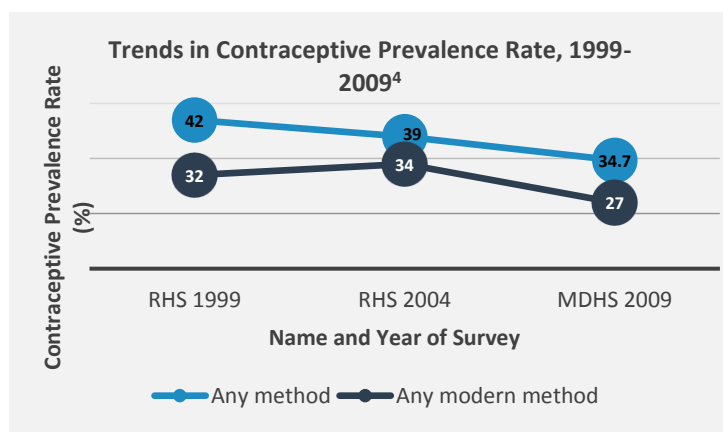
Total Number of Children Aged 6-59 Months **3276**

Percentage of Children Aged 6-59 Months Who Received Deworming Medication in the Past 6 Months **68.6%**

More than 2 in 3 children aged 6-59 months in Maldives have received deworming medication over the past 6 months preceding the data collection period for MDHS 2009⁴.

CONTRACEPTIVE PREVALENCE RATE

The most recent data available on contraceptive prevalence rate [CPR] among married women aged 15-49 years is from MDHS 2009⁴. Previous Reproductive Health [RH] surveys conducted in Maldives in 1999 and 2004 have also collected data on CPR⁴. The data from these three surveys are comparable since the information has been collected from married women aged 15 to 49 years in all three surveys, thus allowing for time trend analysis⁴.



A steady decline in the CPR for any method can be observed from 1999 to 2009⁴. Overall a 7.3 % decline in CPR for any method was observed from RH survey in 1999 (42 percent) to MDHS in 2009 (34.7 percent)⁴. Although CPR for modern method increased by 2 percent between RH survey in 1999 to RH survey in 2004, it declined to 27 percent in MDHS 2009⁴.

DEFINITIONS

CONTRACEPTIVE PREVALENCE RATE [CPR]: WHO⁶ defines contraceptive prevalence rate as “the percentage of women who are currently using, or whose sexual partner is currently using, at least one method of contraception, regardless of the method used.” WHO⁶ further states that CPR is usually reported for women aged 15-49 years who are married or in union.

In this chapter, CPR is defined as the percentage of married women aged 15-49 years who are using at least one method of contraception. This is in line with the definition used by MDHS 2009⁴.

ANY METHOD OF CONTRACEPTION: According to WHO², this includes both modern and traditional methods of contraception.

ANY MODERN METHODS OF CONTRACEPTION: WHO's⁷ classification of modern methods of contraception includes methods such as oral contraceptive pills, implants, injectables, IUDs, contraceptive patches, condom, sterilization, Lactational Amenorrhea Methods, e-pills, Standard Days Method, Basal Body Temperature Method, Two-day Method and Sympto-thermal Method.

UNMET NEED FOR FAMILY PLANNING

The most recent data on unmet need for family planning among married women aged 15-49 years is available from MDHS 2009⁴. According to this survey, 28.1 percent of married women aged 15-49 years have an unmet need for family planning either for spacing or for limiting purposes⁴.

Almost 3 in 10 married women aged 15-49 years in Maldives have an unmet need for family planning⁴.

DEFINITIONS

UNMET NEED FOR FAMILY PLANNING: MDHS 2009⁴ defines women aged 15-49 years with an unmet need for family planning as:

1. “Currently married women who are in need of family planning for spacing purposes (i.e. this include pregnant women whose pregnancy is mistimed (wanted later), amenorrhoeic women whose last birth was mistimed and non-users who are neither pregnant nor amenorrhoeic and who either want to delay the next birth at least 2 or more years, are unsure whether they want another child, or want another child but are unsure when to have the birth)”
2. “Currently married women who are in need for family planning for limiting purposes (i.e. pregnant women whose pregnancy was unwanted, amenorrhoeic women whose last child was unwanted and non-users who are neither pregnant nor amenorrhoeic and who want no more children”.

SUMMARY TABLES

Table 4.1. Immunization Coverage by Vaccines [%] – Maldives – 2005- 2014^a

Year/ Vaccine	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
BCG	99	99	99	99	99	97	98	99.6	99.7	99
Hepatitis B (3 rd Dose)	98	98	98	98	98	97	96	99.1	99.2	99
OPV (3 rd Dose)	98	98	99	98	98	98	96	98.9	100	100
DPT (3 rd Dose)	98	98	98	98	98	96	96	99.6	99	N/A
Pentavalent (DTP+HEP B+HIB)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	99.3	98.7
Measles	97	97	97	97	98	97	95	98.4	100	100
MMR	N/A	N/A	N/A	95	96	95	99	99.1	99	98
Tetanus Toxoid (5 th Dose)	94	98	95	95	85	90	94	99.2	89.1	98

Note: MMR Vaccine was introduced in 2007, Pentavalent Vaccine was introduced in 2013

Table 4.2. Summary of Malnutrition Indices Among Under 5 Children Based on The Findings of Maldives Demographic and Health Survey 2009⁴

Stunted (%)	Severely stunted (%)	Wasted (%)	Severely wasted (%)	Underweight (%)	Severely Underweight (%)	Overweight (%)	Number of children measured
18.9	6.4	10.6	2.5	17.3	3.3	2.2	2513

Table 4.3. Percentage of Children Aged 6-59 Months Who Were Given Vitamin A Supplements and Deworming Medication in The Past 6 Months Based on The Findings of Maldives Demographic and Health Survey 2009⁴

Vitamin A Supplements (%)	Deworming Medication (%)	Number of children
48.1	68.6	3276

Table 4.4. Contraceptive Prevalence Rates Among Married Women Aged 15-49 Years- Maldives- 1999-2009⁴

Year/ CPR type	1999	2004	2009
CPR for any method (%)	42	39	34.7
CPR for any modern methods (%)	32	34	27

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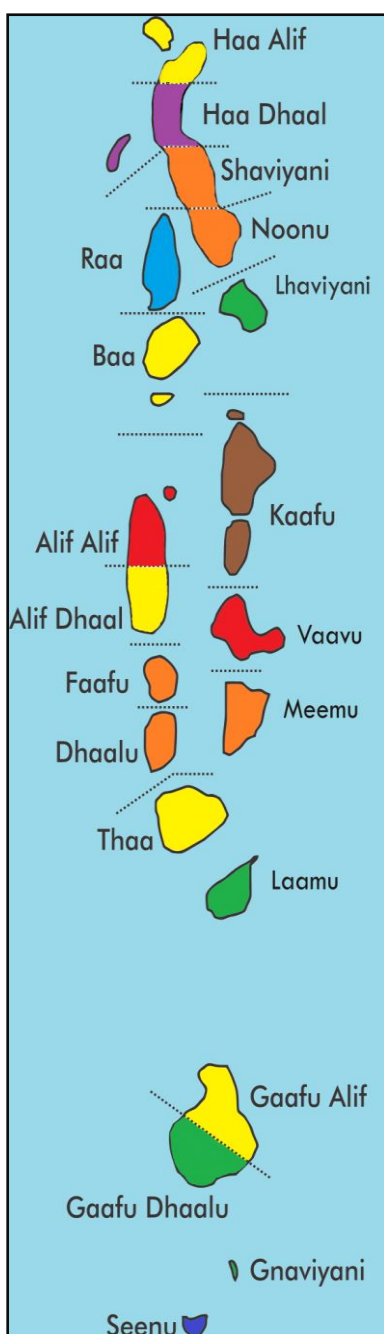


HEALTH SERVICE DELIVERY & HUMAN RESOURCE

Did You Know? The first government hospital was established in Maldives on 11th January 1948 and was named as HASFATHAALU¹

OUTPATIENT VISITS TO PUBLIC HOSPITALS

MAP 1: Number of Outpatient visits made to public hospitals by locality – 2014



LEGEND:

< 10,000 Outpatient Visits
10,000 – 19,999 Outpatient Visits
20,000 – 29,999 Outpatient Visits
30,000 – 39,999 Outpatient Visits
40,000 – 49,999 Outpatient Visits
50,000 – 59,999 Outpatient Visits
60,000 – 69,999 Outpatient Visits
70,000 – 79,999 Outpatient Visits
>= 80,000 outpatient Visits

WHO IS AN OUTPATIENT?

World Health Organization [WHO]² defines outpatient as “a patient who attends an outpatient department, is not admitted to a health care facility and does not occupy a bed for any length of time”.

2014 QUICK FACTS

Total Number of Outpatient Visits to Public Hospitals^a **905,653 visits**

Percentage of Outpatient Visits to IGMH Only^a **34.43 %**

Percentage of Outpatient Visits to Kaafu Atoll Public Hospitals (Includes IGMH and Hulhumale’ Hospital)^a **43.97 %**

Percentage of Outpatient Visits to Public Hospitals Located in Atolls Except Kaafu Atoll^a **56.03%**

TOP 10 ATOLLS WITH HIGHEST NUMBER OF OUTPATIENT VISITS TO PUBLIC HOSPITALS IN 2014^a

1. Kaafu: 398,250 visits*
2. Haa Dhaal: 72,498 visits
3. Seenu: 63,045 visits
4. Raa: 41,618 visits
5. Gaafu Dhaalu: 35,611 visits
6. Laamu: 34,038 visits
7. Lhaviyani: 32,327 visits
8. Gnaviyani: 32,165 visits
9. Gaafu Alif: 23,723 visits
10. Haa Alif: 23,603 visits

* (IGMH = 311,830, Hulhumale’ Hospital=86,420)

From 1st January 2014 to 31st December 2014, a total of 905,653 outpatient visits were made to public hospitals located throughout Maldives^a. 34.43% of these visits were made to IGMH^a. When atolls were compared, 43.97 % of outpatient visits were made to a public hospital located in Kaafu atoll^a. This includes both IGMH and Hulhumale’ Hospital^a. On the other hand, more than half (56.03%) of outpatient visits were made to public hospitals located in other atolls^a. After Kaafu atoll, the highest number of outpatient visits was made to the public hospital located in Haa Dhaal atoll (i.e. H.dh Kulhudhufushi Regional Hospital)^a. This is followed by Seenu and Raa atoll which amounts to 63,045 and 41,618 outpatient visits, respectively^a. Lhaviyani, Laamu, Gaafu Dhaalu, and Gnaviyani atolls had outpatient visits between the range of 30,000 – 39,999 visits, while Haa Alif, Baa, Alif Dhaal, Thaa and Gaafu Alif had outpatient visits between the range of 20,000 to 29,999^a. This is followed closely by Meemu, Faafu, Dhaalu, Shaviyani and Noonu atolls. All of these latter atolls had 10,000 – 19,999 outpatient visits in 2014^a. Meanwhile, Alif Alif and Vaavu atolls are the only atolls who had outpatient visits below 10,000 in 2014^a.

Almost 4 in 9 outpatient visits were made to a public hospital located in Kaafu atoll (78.30% of these visits were made to IGMH)^a.

Almost 5 in 9 outpatient visits were made to a public hospital located in atolls other than Kaafu atoll^a.

NOTE: This chapter only discuss about the outpatient visits made to public hospitals. It does not include outpatient visits made to other public health facilities (i.e. health centres and health posts).

^aThe analysis and write-up is based on monthly activity data collected from Health Facilities by Health Information and Research Section, Ministry of Health.

INPATIENT VISITS TO PUBLIC HOSPITALS

WHO IS AN INPATIENT?

WHO² defines inpatient as “a patient who has been admitted to the health care facility. Inpatients usually occupy a bed in a health care facility for at least four hours to overnight”.

2014 QUICK FACTS

Total Number of Inpatient Visits to Public Hospitals^b **30,019 visits**

Percentage of Inpatient Visits to IGMH Only^b **41.94 %**

Percentage of Outpatient Visits to Kaafu Atoll Public Hospitals (Includes IGMH and Hulhumale’ Hospital)^b **44.62 %**

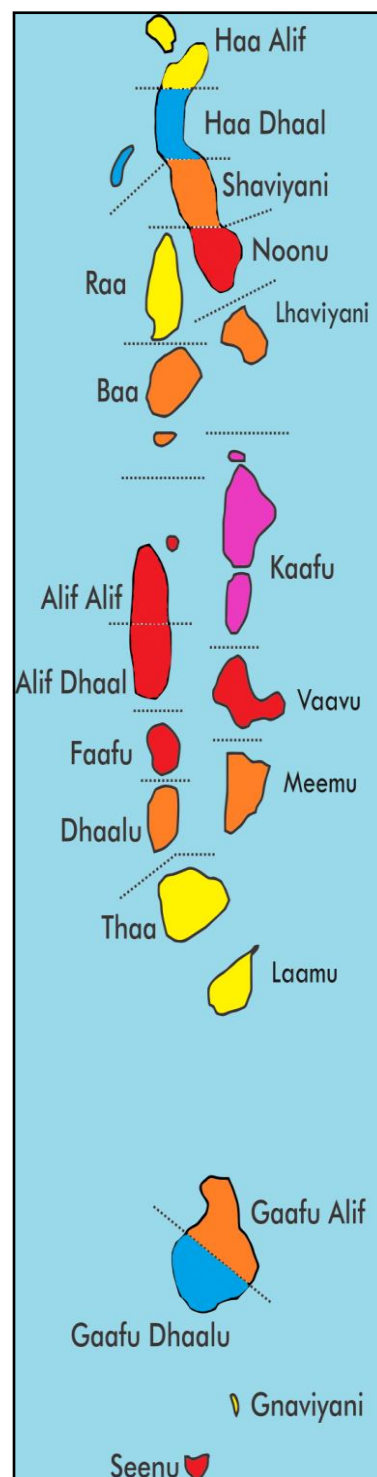
Percentage of Outpatient Visits to Public Hospitals Located in Atolls Except Kaafu Atoll^b **55.38%**

TOP 10 ATOLLS WITH HIGHEST NUMBER OF INPATIENT VISITS TO PUBLIC HOSPITALS IN 2014^b

1. Kaafu: 13,393 visits*
2. Haa Dhaal: 2,456 visits
3. Gaafu Dhaalu: 2,062 visits
4. Haa Alif: 1,322 visits
5. Gnaviyani: 1,297 visits
6. Laamu: 1,272 visits
7. Raa: 1,232 visits
8. Thaa: 1,058 visits
9. Lhaviyani: 996 visits
10. Dhaalu: 913 visits

* (IGMH = 12,590, Hulhumale’ Hospital=803)

MAP 2: Number of Inpatient visits made to public hospitals by locality – 2014



Over the span of 1st January 2014 to 31st December 2014, a total number of 30,019 inpatient visits were made to public hospitals within Maldives^b. 41.94% of these visits were made to the national referral hospital (IGMH)^b. Atoll comparisons showed that 44.62 % of inpatient visits were made to a public hospital located in Kaafu atoll (i.e. IGMH and Hulhumale’ Hospital)^b. Similar to outpatient visits, more than half (55.38%) of inpatient visits were made to public hospitals located in other atolls^b. Furthermore, Haa Dhaal atoll is again placed second to Kaafu atoll for the highest number of inpatient visits made to a public hospital in 2014. This is followed by Gaafu Dhaalu atoll with the number of inpatient visits amounting to 2,062^b. Haa Alif, Gnaviyani, Laamu and Raa atolls had an inpatient visit number between the range of 1000 – 1499^b. On the other hand, Thaa, Shaviyani, Lhaviyani, Baa, Meemu, Dhaalu and Gaafu Alif atolls had an inpatient visit number between 500 – 999^b. Hospitals located in the remaining 6 atolls (Seenu, Alif Alif, Alif Dhaal, Vaavu, Faafu and Noonu) had inpatient visit numbers below 500 in 2014^b.

Almost 4 in 9 inpatient visits were made to a public hospital located in Kaafu atoll (94.00 % of these visits were made to IGMH)^b

Almost 5 in 9 inpatient visits were made to a public hospital located in atolls other than Kaafu atoll^b.

NOTE: This chapter only discuss about the inpatient visits made to public hospitals. It does not include inpatient visits made to other public health facilities (i.e. health centres and health posts).

^bThe analysis and write-up is based on monthly activity data collected from Health Facilities by Health Information and Research Section, Ministry of Health.

LEGEND:

- < 500 Inpatient visits
- 500 - 999 Inpatient Visits
- 1,000 - 1,499 Inpatient Visits
- 1,500 – 1, 999 Inpatient Visits
- 2,000 – 2,499 Inpatient Visits
- >= 2,500 Inpatient Visits

MEDICAL STAFF

CLASSIFICATIONS:

In this section, the classification used for medical staff is limited to health professionals working in public health facilities who are either doctors, nurses, some allied health staff and community health personnel^c.

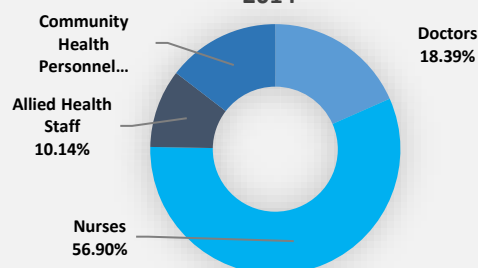
- **DOCTORS** includes both general practitioners and specialists^c.
- **ALLIED HEALTH STAFF** are limited to laboratory scientists, laboratory technicians, laboratory assistants, physiotherapists, radiographers, dental technicians and dental assistants^c.
- **COMMUNITY HEALTH PERSONNEL** includes community health workers, family health workers and trained traditional birth attendants (Foolhuma)^c.

2014 QUICK FACTS

Total Number of medical staff recorded to be working in public health facilities ^c	3828
Percentage of male medical staff ^c	27.48%
Percentage of female medical staff ^c	72.52%
Percentage of medical staff in Male ^c	33.62%
Percentage of medical staff in Atolls ^c	66.38%
Percentage of Doctors ^c	18.39%
Percentage of Nurses ^c	56.90%
Percentage of Allied Health Staff ^c	10.14%
Percentage of Community Health Personnel ^c	14.58%

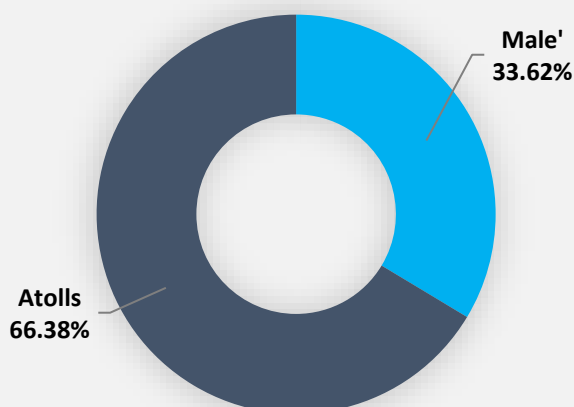
In 2014, a cumulative total of 3,828 medical staff were reported to be working in all public health facilities in Maldives^c. More than half (56.90%) of these staff were nurses^c. 18.39% of the medical staff were doctors, while another 14.58% were attributed to community health personnel such as community health workers, family health workers and trained traditional birth attendants^c. Allied health staff such as laboratory staff, dental staff, radiographers and physiotherapists contributed to 10.14% of the medical staff working in Maldives in 2014^c.

Percentage Distribution of Medical Staff working in Public Health Facilities - Maldives - 2014^c

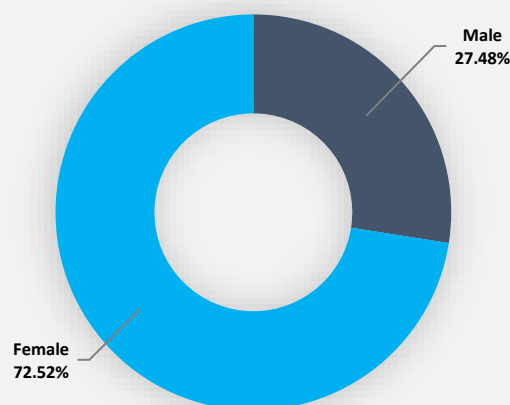


Over 70% of the medical staff were females^c. This is mainly due to the high number of female nurses and community health personnel working in the Maldives^c. Furthermore, majority of medical staff (66.38%) were working in Atolls when compared to Male' (33.62%)^c.

Percentage of Medical Staff working in Public Health Facilities - Maldives by Locality - 2014^c



Percentage of Medical Staff working Public Health Facilities - Maldives by Sex - 2014^c



^cThe analysis and write-up is based on monthly activity data collected from Health Facilities by Health Information and Research Section, Ministry of Health

SUMMARY TABLES

Table 5.1. Total Number of Outpatient and Inpatient Visits Made to Public Hospitals – Maldives – 2014a,b

No	Location of Hospital		Outpatient Visits (Number)	Inpatient Visits (Number)
	Atoll	Island		
1	Haa Alif	Dhihdhoo	23603	1322
2	Haa Dhaal	Kulhudhufushi	72498	2456
3	Shaviyani	Funadhoo	13941	631
4	Noonu	Manadhoo	14406	332
5	Raa	Ungoofaaru	41618	1232
6	Baa	Ehdhafushi	21798	550
7	Lhaviyani	Naifaru	32327	996
8	Alif Alif	Rasdhoo	5675	249
9	Alif Dhaal	Mahibadhoo	21112	400
10	Vaavu	Felidhoo	2978	52
11	Meemu	Muli	15850	619
12	Faafu	Nilandhoo	12563	377
13	Dhaalu	Kudahuvadhoo	19861	913
14	Thaa	Veymandoo	20582	1058
15	Laamu	Gan	34038	1272
16	Gaafu Alif	Villingili	23723	639
17	Gaafu Dhaalu	Thinadhoo	35611	2062
18	Gnaviyani	Fuvahmulah	32165	1297
19	Seenu	Hithadhoo	63054	169
20	Kaafu	Male' (IGMH)	311830	12590
21	Kaafu	Male' (Hulhumale')	86420	803

Table 5.2. Distribution of Medical Staff Working in Public Health Facilities by Locality & Sex – Maldives - 2014^c

Medical Staff/ Locality & Sex	Doctors	Nurses	Allied Health Staff	Community Health Personnel
REPUBLIC				
Male	540	171	187	154
Female	164	2007	201	404
Total	704	2178	388	558
MALE'				
Male	177	88	66	1
Female	109	730	114	2
Total	286	818	180	3
ATOLLS				
Male	363	83	121	153
Female	55	1277	87	402
Total	418	1360	208	555

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1. Mohamed Ismail Fulhu. Healthcare in Maldives – yesterday and past. Maldives: Print-N-Gard (Pvt) Ltd; 2010. 311 p.
2. WHO. Medical Records Manual- A Guide for Developing Countries[document on the internet]. C2006 [cited 2016 Nov 9]. Available from: <http://www.wpro.who.int/publications/docs/MedicalRecordsManual.pdf>



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