

An audit of the medical hospital admissions among children in Barbados

Kim Morris

Introduction

Hospital admissions provide some measure of the prevalence and severity of childhood diseases.

An understanding of the epidemiology of hospital admissions is critical for healthcare planning and appropriate resource allocation.

Barbados has a single public hospital where over 95% of all pediatric medical admissions take place. Therefore the admission data at this hospital is reflective of the pediatric population of this country.

Objectives

- To perform an audit of all the hospital admissions in Barbados to ascertain the cause of hospitalization, duration of hospital stay and the outcome among children.
- To study the demographic profile and pattern of hospitalization among these children.
- To estimate the potentially preventable hospital admission among children in Barbados.

Methods

- It is a clinical audit of all the medical admissions among children at the Queen Elizabeth hospital. Period of reporting extends from the January 1, 2013 to December 31, 2014.
- Following data were collected from the pediatric medical admission register:
 - demographics
 - diagnosis
 - hospital course
 - disposition

Discharge diagnosis based on clinical findings and the laboratory results were taken as the final diagnosis.

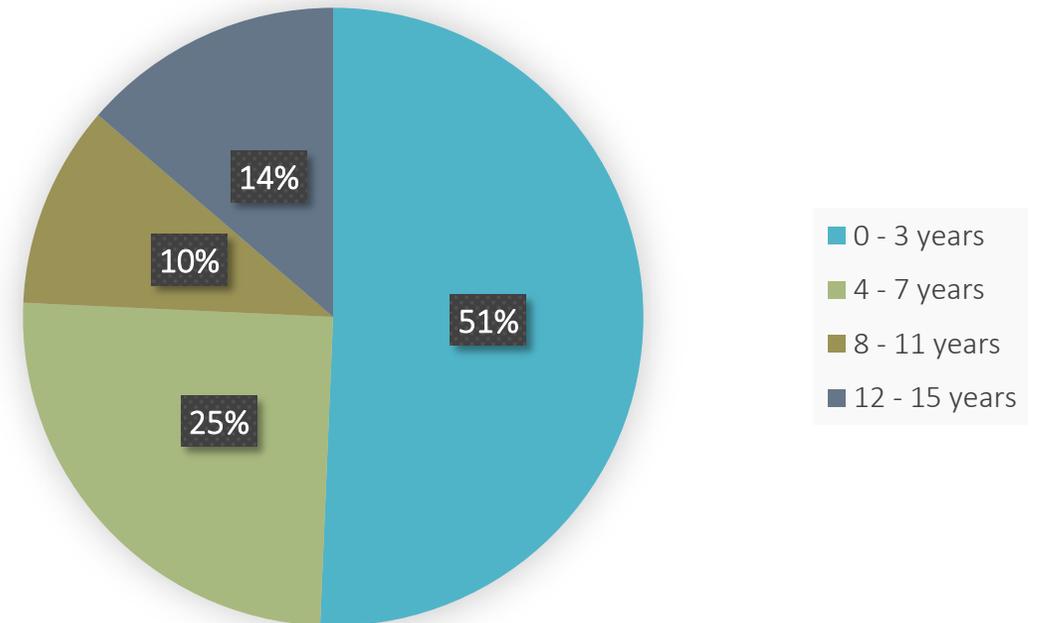
Methods

- Data was collected in Microsoft Access data base and Microsoft Excel was used for tabulation, analysis and graph generation.
- Incidence rate of admission was calculated by dividing the total admissions during a year by the total under 16 population.
- Duration of stay was calculated by subtracting the date of admission form the date of discharge.
- Proportion of potentially preventable conditions including diabetes, asthma and gastroenteritis were estimated from all the admissions during the study period.

Results

- The annual admission rate of 2.0% of children in this population in this two year period
- At the time of admission 51% were <3 years of age. (Figure 1)

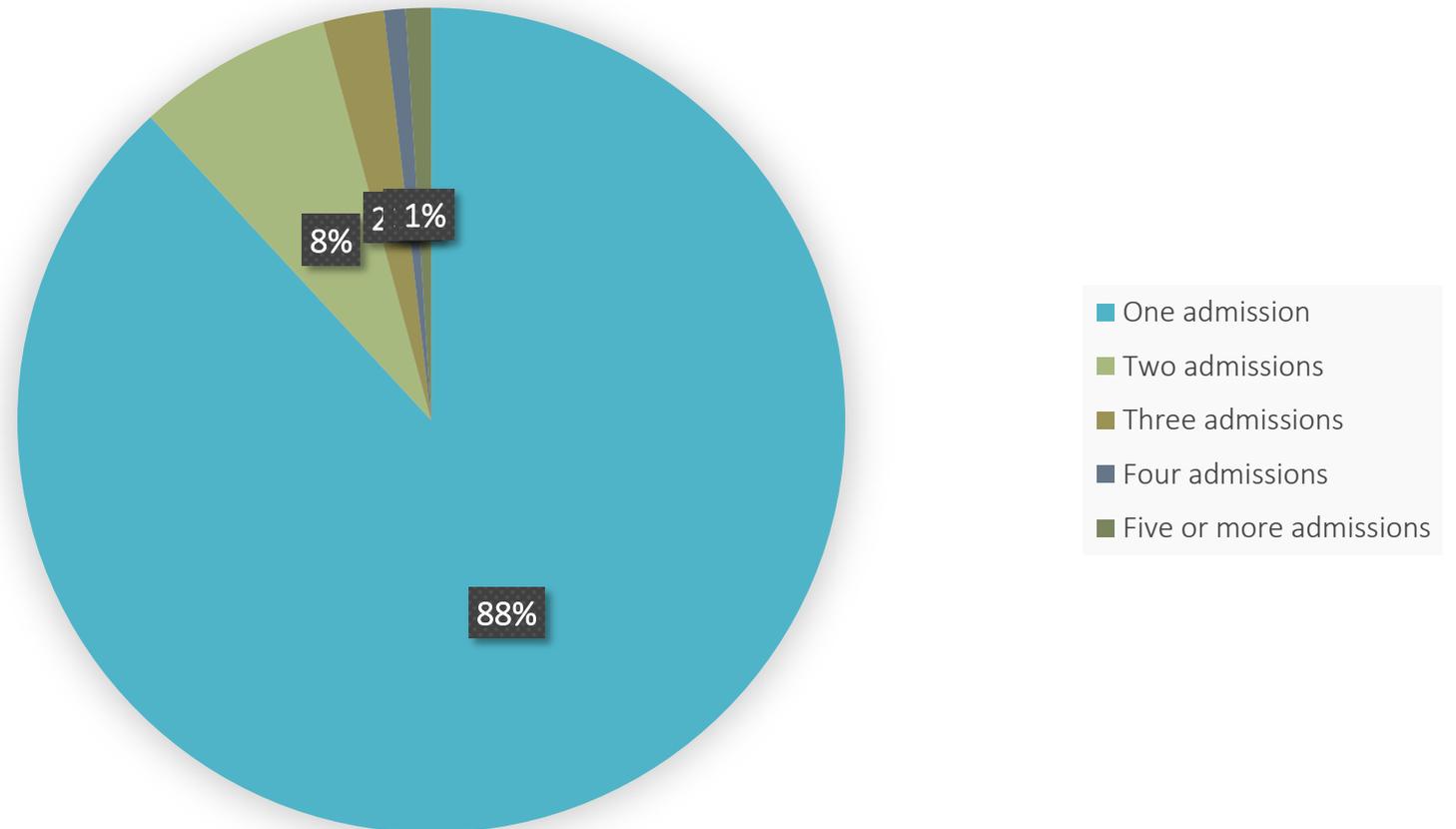
Figure 1: Proportion of total admission



Results

Among the children admitted 88% had a single admission and only 1% had five or more admissions.

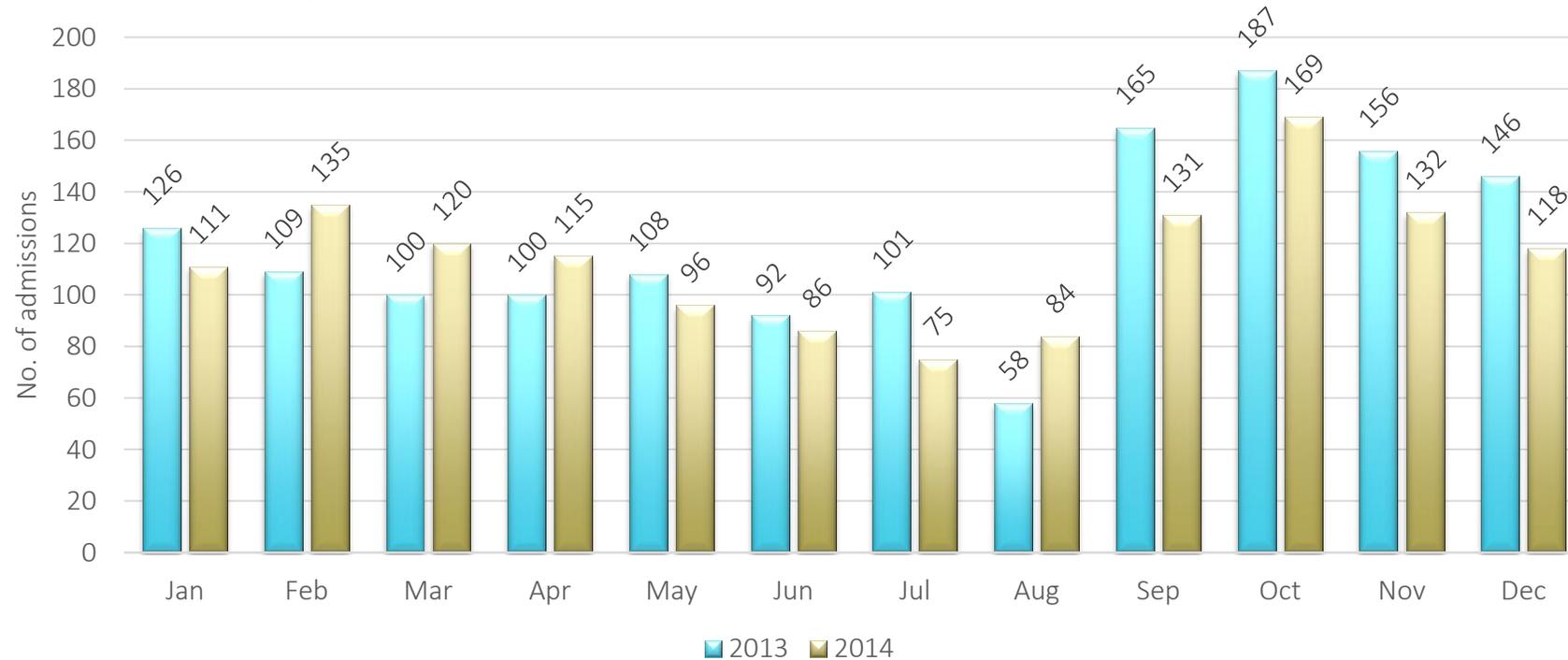
Figure 2: Frequency of admissions



Results

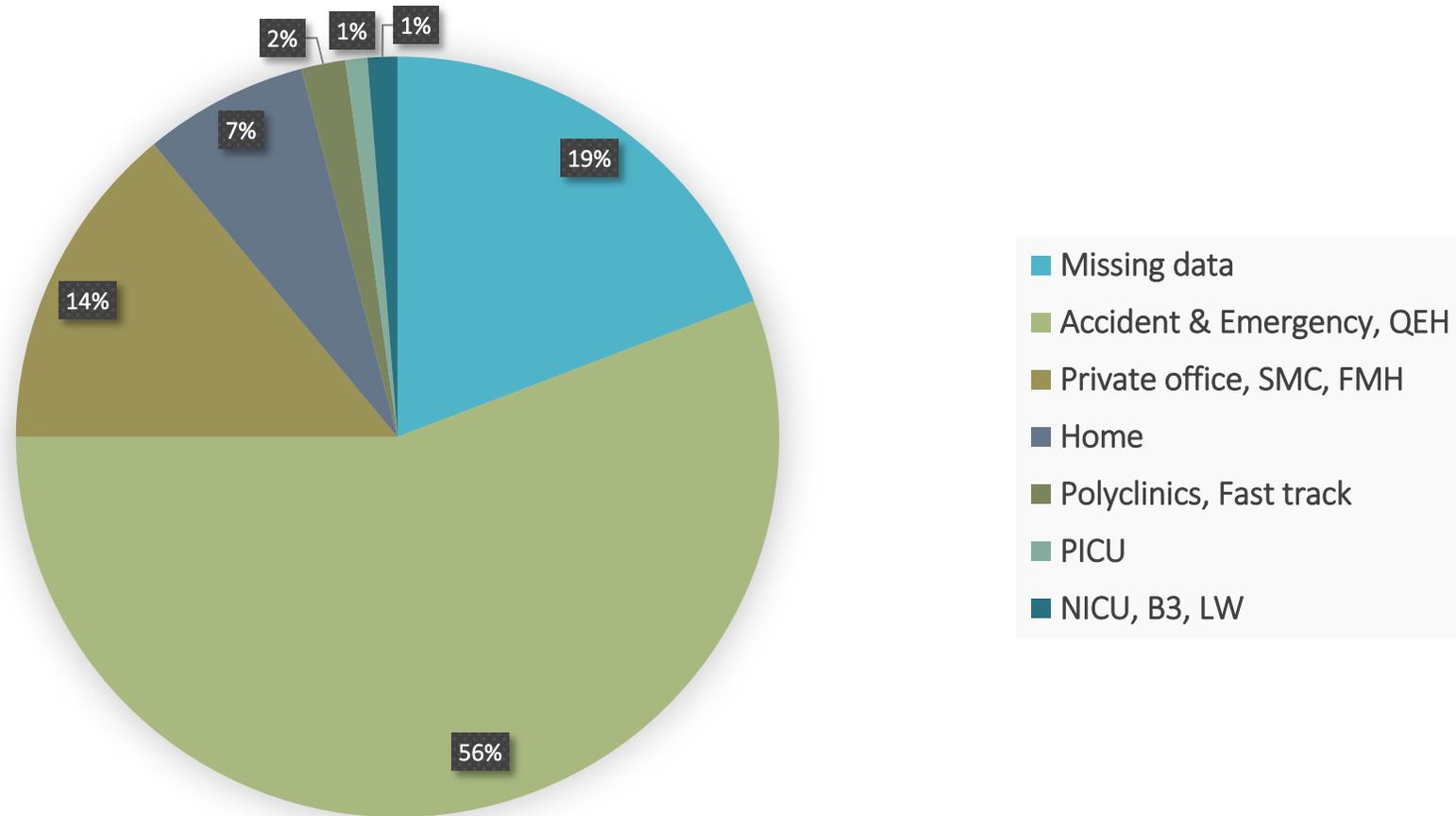
More admissions occur during the rainy months of September to December

Figure 3: Monthly admission trend for 2013 & 2014



Results

Figure 4: Source of admissions

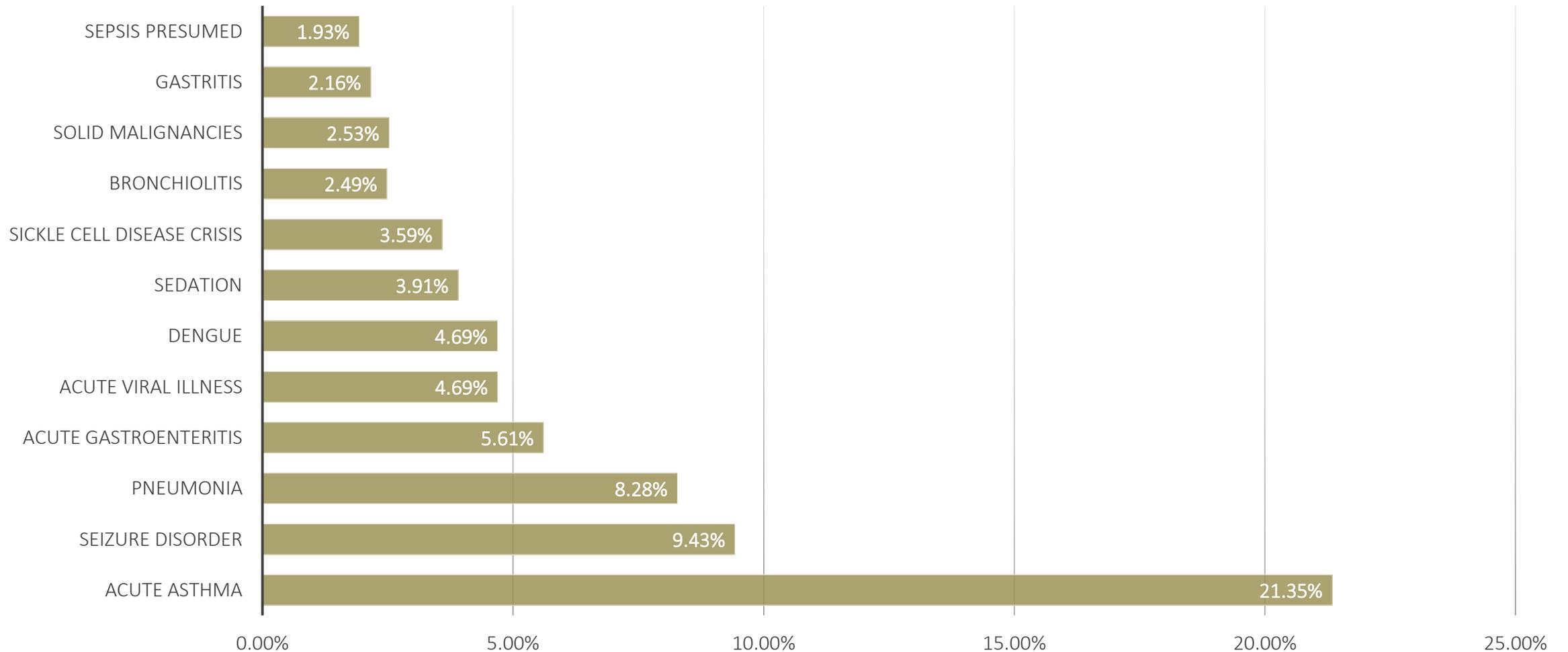


Results

- Mean length of stay was 2.6 days
- Acute asthma was by far the most common (21.35%) discharge diagnosis. Respiratory illnesses such as asthma, pneumonia, bronchiolitis and upper respiratory infections accounted for over a-third (34.01%) of all admissions. (Figure 5)

Results

Figure 5: Top Twelve Discharge diagnoses



Discussion & Conclusions

- Our admission rate (2%) for the under 16 population is comparable to developed countries in Europe and North America (3 – 6%)^{1, 2}. Low admission rate is a reflection of timely and adequate care of these children by general practitioners in the community.
- Nearly one-fourth of all admissions fall in the category of potentially preventable admission category (Asthma, Acute Gastro-Enteritis, Pneumonia).

Discussion & Conclusions

- Nearly one eighth of those admitted had one or more repeat admissions, similar to those from University hospital, Kingston, Jamaica³.
- Nearly two-thirds of these were from Asthma, Seizures, Sickle cell disease and Diabetes.
- Admission rates can be further reduced by avoiding the potentially preventable admissions, provided there is parental education, good follow up system⁴.

References

1. Hall MJ, DeFrances CJ, Williams SN, Golosinskiy A, Schwartzman A. National Hospital Discharge Survey: 2007 summary. National health statistics reports; no 29. Hyattsville, MD: National Center for Health Statistics. 2010.
2. Eurostat. Hospital discharges and length of stay statistics, 2013
[http://ec.europa.eu/eurostat/statistics-explained/index.php/Hospital discharges and length of stay statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Hospital_discharges_and_length_of_stay_statistics)
3. Eck C, Pierre RB, Hambleton I. Medical pediatric admission pattern at the University Hospital of West Indies: Issues for future planning.
4. Russo CA, Jiang HJ, Barrett M. *Trends in Potentially Preventable Hospitalizations among Adults and Children, 1997–2004*. HCUP Statistical Brief #36. August 2007. Agency for Healthcare Research and Quality, Rockville, MD.
<http://www.hcupus.ahrq.gov/reports/statbriefs/sb36.pdf>

An audit of the medical hospital admissions among children in Barbados.

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Objectives

- To perform an audit of all the hospital admissions in Barbados to ascertain the cause of hospitalization, duration of hospital stay and the outcome among children.
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Background

Hospital admissions provide some measure of the prevalence and severity of childhood diseases. An understanding of the epidemiology of hospital admissions, including morbidity and mortality patterns and the economic impact, is critical for healthcare planning and appropriate resource allocation. Audit of hospital admissions also provide an estimate of potentially preventable admissions from the conditions such as asthma, diarrheal diseases and diabetes. Admission rates and their causes and the estimates of the potentially preventable causes reflect socioeconomic circumstances, the level of utilization of primary health care services and admission policies of tertiary institutions.

Barbados, with an under 16 year population of 58455, has a single public hospital where over 95% of all pediatric medical admissions take place. Therefore the admission data at this hospital is well reflective of the pediatric population of this country.

Methods

- It is a clinical audit of all the medical admissions among children at the Queen Elizabeth hospital. Period of reporting extends from the January 1, 2013 to July 31, 2014. Children under 16 years are admitted to the pediatric medical ward. Following data were collected from the pediatric medical admission register- demographics, diagnosis, hospital course, and disposition. Discharge diagnosis based on clinical findings and the laboratory results were taken as the final diagnosis.
- Data was collected in Microsoft Access data base and Microsoft Excel was used for tabulation, analysis and graph generation. Incidence rate of admission was calculated by dividing the total admissions during a year by the total under 16 population. Duration of stay was calculated by subtracting the date of admission from the date of discharge. Case fatality ratio was calculated by dividing the number of deaths from a particular cause by the total number of admission from that cause.
- Proportion of potentially preventable conditions including diabetes, asthma and gastroenteritis were estimated from all the admissions during the study period.

Results

- During the two year period of reporting, there were a total of 2820 pediatric medical admissions from among 2342 children at the QEJH during the two year period. This would translate to annual admission rate of 2.0% of children in this population.
- At the time admission 51% were <3 years of age. (Figure 1)
- Among the children admitted 88% had a single admission and only 1% had five or more admissions. (Figure 2)
- More admissions occur during the rainy months of September to December. (Figure 3)
- Majority (56%) of all the medical admissions is from the Accident and Emergency department of the QEJH. (Figure 4)
- Acute asthma was by far the most common (21.35%) discharge diagnosis. Respiratory illnesses such as asthma, pneumonia, Bronchiolitis and upper respiratory infections accounted for over a-third (34.01%) of all admission. (Figure 5)

Figure 1: Proportion of total admission

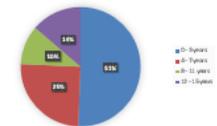


Figure 2: Frequency of admissions

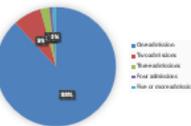


Figure 3: Monthly admission trend for 2013 & 2014

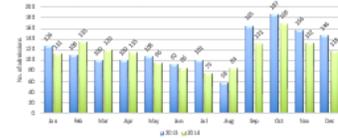


Figure 4: Source of admissions

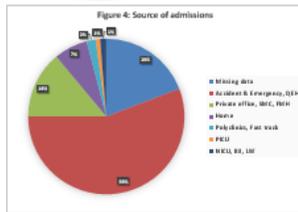
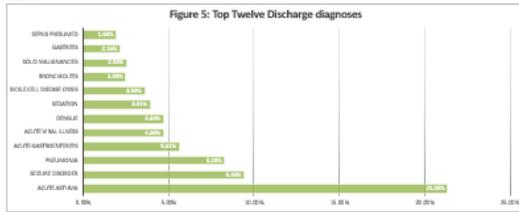


Figure 5: Top Twelve Discharge diagnoses



DISCUSSION & CONCLUSIONS

- Our admission rate (2%) for the under 16 population compares very well with those from the developed countries in Europe and North America (3 – 6%)^{1, 2}. Low admission rate is reflection of timely and adequate care of these children by general practitioners in the community.
- Nearly one-fourth of all admissions fall in the category of potentially preventable admission category (Asthma, Acute Gastro-Enteritis and Diabetes).
- Nearly one eighth of those admitted had one or more repeat admissions, similar to those from University hospital, Jamaica³. Nearly two-thirds of these were from Asthma, Seizures, Sickle cell disease and Diabetes. All of which are once again potentially preventable admission.
- Admission rates can be further reduced by avoiding the potentially preventable admissions, provided there is parental education, good follow up system⁴.

References

- Hall AH, DeFrances CJ, Williams SH, Golosinskiy A, Schwartzman A. National Hospital Discharge Survey: 2007 summary. National health statistics reports; no 29. Hyattsville, MD: National Center for Health Statistics. 2010.
- Eurostat. Hospital discharges and length of stay statistics, 2013 http://ec.europa.eu/eurostat/statistics-explained/index.php/Hospital_discharges_and_length_of_stay_statistics
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