INTRODUCTION: Croup is a common pediatric respiratory illness presenting to the emergency department (ED) in the fall and winter months. The majority of cases are caused by parainfluenza viruses. We examine the monthly patterns of young children who made croup-related visits to EDs in Alberta, Canada.

METHODS: ED visits were identified in provincial administrative databases to obtain all ED encounters for croup made by young children (age≤2 years) during six years (April 1, 1999 to March 30, 2005). Time series models (SARMA) were developed to capture temporal and seasonal trends and predict future presentations.

RESULTS: Overall, 27,355 croup-related ED visits were made during the study period. More males (62%) than females presented and most were less than one year old (43%). Differences were observed in the number of visits made in odd and even years. Peak visits occurred in November for odd years and in February for other years. Strong seasonal patterns at twelve months were detected and included in the modelling.

CONCLUSION: We observed the presence of a clear biennial pattern of croup ED visits. The SARMA models and predictions offer insights into the epidemiology of croup-related visits to EDs and may be helpful in planning both research and resource needs.