IMPROVING ANTICIPATORY GUIDANCE RELATED TO ATV SAFETY IN THE PEDIATRIC PRIMARY CARE SETTING: A QUALITY IMPROVEMENT PROJECT

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INTRODUCTION

- Over the last 20 years there has been a large increase in presence and use of All-terrain vehicles (ATV), resulting in a disproportionate rise in injuries and hospitalizations of children and adolescents. (Mazotas et. Al, 2014)
- ATV accidents remain at an unacceptably high rate, with a child dying in an agricultural related crash every three days. (Wright, Marlenga, & Lee, 2013)
- The ATV related injury rate of boys is double that of girls. (Shults, West, Rudd, & Helmkamp, 2013)
- More than 90% of ATV related injuries involving children are directly related to the inability to operate ATVs.
- 21 ATV related deaths in Iowa between 2012-2014
- 26,500 estimated injuries to children younger than 16 years of age in 2012, with 46% of those injuries occurring in children younger than 12. (CPSC, 2014)
- With more children killed in the United States each year from ATVs than from bicycle crashes alone, implementation of ATV safety and injury prevention education is essential in the pediatric primary care setting. (Shults, West, Rudd, & Helmkamp, 2013)

PICOT & STUDY OBJECTIVES

In pediatric primary care providers (P), how does an education program on ATV safety (I) compared to current clinical practice (C) affect the rate of delivery of anticipatory guidance (O) over a 2-month period (T).

I. 75% of pediatric primary care providers will attend an ATV safety education presentation.
II. 75% of educational ATV handouts will be distributed to parents/caregivers during well child visits.
III. 20% increase in delivery of anticipatory guidance related to ATV

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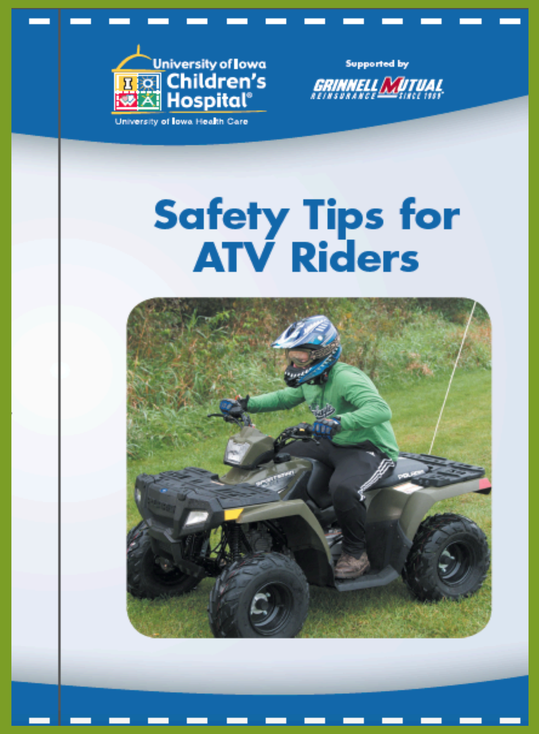
MATERIALS AND METHODS

Design
- Descriptive, longitudinal, quality improvement design.

Interventions
- ATV safety education presentation
- Parent/caregiver handouts given during well child visits.
- EPIC smartphrase

Data Collection
- Using a confidence interval of 95%, a maximum of 5% margin of error, a population size of 425, with a 10% response distribution, a minimum of 105 charts were required at baseline and follow-up
- All available charts were utilized at baseline (n = 105) and two-month follow-up (n = 105).

Measures
- Descriptive statistics were utilized to provide an overview of the project sample.
- Nominal level data was analyzed with the Chi-square of Independence and the *phi* coefficient (ϕ) was used as an index to describe the magnitude of the effect from the intervention.
- Ratio level data was analyzed with the Independent t-test.
- The level of significance was set at $p \leq .05$.

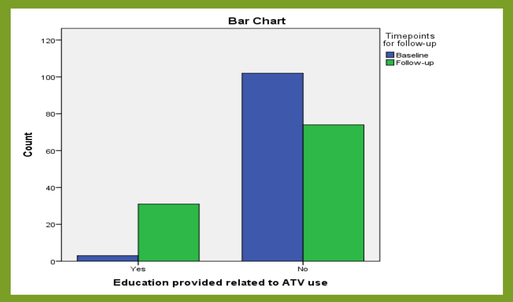


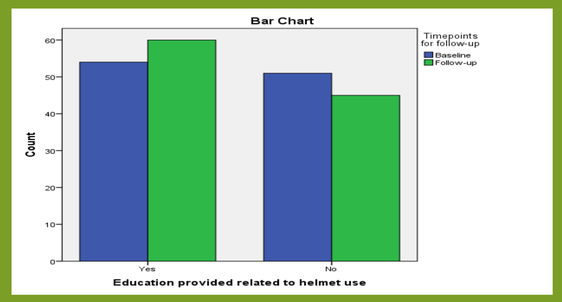
Note. Adapted from "All Terrain Vehicle (ATV) Safety" University of Iowa Children's Hospital, 2016., Retrieved from http://www.uichildrens.org/atv-safety/

RESULTS

Demographics

- The mean age was 11 years for both the baseline group and follow-up group. No statistically significant difference between the two groups for age, $t(208) = -.57$, $p = .32$, 95% CI [-1.15, .638].
- Baseline group consisted of 55.2% males (n = 58) and 44.7% female (n = 47). In the follow-up group 56.1% were male (n = 59) and 43.8% female (n = 46), without statistical significance between gender in the baseline and follow-up groups, χ^2 (1) = 0.019, p = .89.
- The study participants were predominantly White (n = 187), with the remaining participants being Black (n = 9), Hispanic (n = 4), Asian (n = 3), and multiracial (n = 7). No statistical significance found between the baseline and follow-up groups, χ^2 (4) = 5.74, p = .22.
- The sample living location was predominantly urban (n = 165), with the remaining participants living in rural areas (n = 45). No statistical found among living location in the baseline and follow-up groups, χ^2 (1) = 0.03, p = .87.





RESULTS

Educational Intervention on ATV Safety

- An ATV safety education intervention presentation was delivered to 87.5% (n = 7) of providers at the primary care clinic.
- ATV safety education handouts introduced to providers and given to parents/caregivers at each well child visit.
- 84% (n =42) of the handouts given to parents/caregivers during well child visits.

Education related to ATV safety.

- Moderate increase in ATV safety related education from baseline (3%) to follow-up (30%)
- Statistically and clinically significant, χ^2 (1)= 27.51, p = .00, Φ = .4, as providers in the follow-up group were twice as likely to provide ATV safety education, OR = 2.17, 95% CI [1.77, 2.66].

Education related to helmet use.

- Slight increase from 51% at baseline to 57% at follow-up.
- While not statistically significant, χ^2 (1) = .69, p = .41, the *phi* (Φ) of .1 indicates a small clinically significant increase in the delivery of education related to helmet use at follow-up.

CONCLUSIONS

I. **Objective met**; 87.5% (n = 7) of providers in attendance during the ATV safety educational intervention.
II. **Objective met;** 84% (n =42) of the handouts given to parents/caregivers.
III. **Objective met:** ATV safety related education increased from baseline (3%) to follow-up (30%); both statistically and clinically significant.

- With all three objectives met, these results suggest an educational intervention for providers as well as the distribution of educational handouts, have the ability to improve anticipatory guidance related to ATV safety provided during well child visits.

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