Introduction to the 2016 Special Injury Prevention Issues of the IHS Provider

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This year’s annual collection of injury prevention articles for the Provider reflects the two current priorities of the IHS Injury Prevention Program: prevention of motor vehicle-related injuries and injuries resulting from falls among older adults.

Marc Matteson describes an initiative to promote child passenger safety at the Ak-Chin Indian Community of Arizona. His article reminds us that many communities are actively engaged in implementing evidence-based strategies for injury prevention; and that many of these strategies – such as access to, and correct use of, child safety seats – are not one-time solutions, but approaches that require sustained efforts, recurring expenses, and well-trained, devoted staff.

Injury prevention is a topic of vital importance not only to American Indian and Alaska Native communities, but also to indigenous communities throughout the world. A team from the University of British Columbia, led by Dr. Vicky Scott, summarizes the literature on falls among older indigenous people of Australia, Canada, New Zealand and the United States. More than 6,000 citations were screened for relevance to obtain the final 34 publications. The authors identified a lack of standardization of methods, and important gaps in research concerning the epidemiology of fall injuries and their prevention.

Support from external consultants can be invaluable when implementing evidence-based strategies in American Indian/Alaska Native communities. Robert Letourneau and Carolyn Crump describe their involvement with CDC’s TMVIPP (Tribal Motor Vehicle Injury Prevention Program) grantees, providing training, technical assistance, and evaluation services. In addition to details about their experiences supporting the eight grantees, the authors cite numerous useful references on program implementation and point readers to a forthcoming CDC publication, “Tribal Motor Vehicle Injury Prevention (TMVIP) Best Practices Guide.”

Together, these articles highlight the diversity of information published by the Provider: reports from the field, reviews of the literature, and guidance from subject matter experts. I encourage all of you readers to consider submitting articles for publication. Many of you are involved in unique and important activities to improve the health and safety of American Indians and Alaska Natives. Yet there is a paucity of literature describing program successes, challenges, and solutions for AI/AN communities. The internet makes published articles far more accessible than in the past. Let’s continue to learn from each other to make a brighter, safer, and healthier future.

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Introduction

The purpose of the Ak-Chin Child Passenger Safety (CPS) Project is to decrease child injuries due to motor vehicle crashes. Motor vehicle crashes (MVCs) are the leading cause of death for American Indian and Alaska Native (AI/AN) children between the ages of 0-13, resulting in 151 deaths nationally between 2004-2013. According to the Centers for Disease Control (CDC), car seat use reduces the risk of death in passenger vehicle crashes by 71% for infants (aged <1 year) and by 54% among toddlers (aged 1-4 years). Booster seat use reduces the risk for serious injury by 45% for children aged 4-8 years when compared with seat belt use alone. Though child safety seat use rates for AI/AN communities vary greatly, rates are generally much lower than that of other racial groups. In 2011, the child restraint use for children from birth to age seven ranged from 79% to 99%. Reservations with primary seat belt laws have the highest use rates, followed by reservations with secondary seat belt laws; reservations with no seat belt laws have the lowest use rates.

The misuse of car seats is also an important factor in diminished crash survival. Nationally, an estimated 73% of car seats observed during check-up events are installed incorrectly. At the same time, 96% of parents believe their child safety seats are installed correctly. The most common forms of misuse are using the wrong seat for the child’s age and weight; and safety belt harness straps that are too loose on the child. Among a randomly-sampled group of 267 caretaker–infant pairs where parents were observed placing their child in a car seat, “…the majority— 93% — were found to have committed at least one critical error, 90% made at least two mistakes, and 50% made at least five.”

Setting

The Ak-Chin Indian Community is located 58 miles south of Phoenix, AZ on 22,000 acres in the Sonora Desert. The community has a population of 1,036 members. The Ak-Chin Indian Community is a young community, with 25% of the population aged 0-11. It is an historically rural community experiencing rapid urban expansion and the growth of local business enterprises. To the north, it borders the city of Maricopa, AZ, which has a 2010 population of 43,482 - a 2,572% increase since the 2000 Census. The Ak-Chin Indian Community enterprise growth includes a casino, golf course, and entertainment facility with a multiplex movie theatre, restaurants, bowling alleys, and concert auditorium. These diverse establishments are the only ones of theirs kind, serving both the Citytown of Maricopa and Ak-Chin Indian Community. The growth in population and enterprise facilities within the Ak-Chin boundary has greatly increased vehicular traffic and increased the risk for motor vehicle crashes.

Methods and Results

The target population for our child passenger safety project is children ages birth to 8 years who live, travel, or attend community events or school within the Ak-Chin reservation boundaries. This project utilized several major approaches: (1) increasing community awareness of the importance of child passenger safety; (2) assessing past and current child safety seat distribution procedures and child passenger safety resources; (3) collecting quantitative and qualitative data regarding of child passenger safety, including assessing community support for a primary occupant restraint law. Approval to conduct and publish this work was obtained from the Ak-Chin Tribal Council.

(1) Increasing community awareness by way of media outlets. In partnership with the Ak-Chin Library and the seat-belt campaign group, a three-minute youth video was produced to encourage youth to buckle up. Recognizing the importance of keeping vehicle occupants secured, the Ak-Chin Indian Community Council charged the seat-belt campaign group led by the Ak-Chin Safety Manager to develop a seat-belt safety Public Service Announcement (PSA). The three minute PSA video created by the Ak-Chin Library took nearly eight hours of shoot time and an additional 16 hours of production to complete the video. The PSA is available to play on all media outlets within the Ak-Chin Indian Community including email blasts, closed circuit TV, the UltraStar movie theatre, the Child Development Program, and community safety events and gatherings. To increase the reach and impact of the PSA, actors used were primarily Ak-Chin Indian Community members.

The internet and social media can also play a role in increasing community awareness child motor vehicle safety. The Community has an intranet, website, and
Facebook page. These social media outlets are all available to display our video PSA as well as future information and announcements concerning child passenger safety. Print media outlets include the community newspaper (distributed bi-monthly) and Ak-Chin Health Education Newsletter (distributed quarterly). Other outlets available for outreach are email (both to employees and community members), community gatherings, organized car seat distribution and check-up events, and by referral appointment.

(2) Assessing past and current car seat distribution program procedures and key players. Prior to 2014, car seat distribution programs had been intermittent and limited in scope. The Ak-Chin Police Department had a child passenger safety (CPS) technician for several years, but the marketing of the program was minimal. In 2009, a CPS Technician Certification course was initiated by the Ak-Chin Indian Community police chief. The course was held in the Community’s fire station and was well-attended by child passenger safety advocates from multiple tribal communities and local municipalities. Along with the certification course the Community hosted a car seat event. A total of 14 vehicles were seen on this day; nearly all of the car seats were not properly installed.9 The 2009 course and distribution event prompted several police and fire department personnel to obtain CPS technician status. Since then, the Ak-Chin Fire Department continued to have CPS Technicians within their ranks. However, a high turnover rate has resulted in a reduction of active CPS Technicians. Since 2014, the Fire Department has had a consistent cadre of technicians and a distribution program through referrals and appointments. Currently, the Fire Department has three technicians on staff. The Gila River Indian Community’s Women, Infants, Children (WIC) program – which also provides services to the Ak-Chin Indian Community, also has a distribution program accessible to eligible Community members. The WIC program has a referral relationship with the Gila River Injury Prevention Program, which also has a car seat distribution program. Ak-Chin Indian Community WIC participants who qualify can be given a referral for a car seat to the Gila River distribution program. This has been a reliable source for car seat distribution. However, Gila River is about 30 miles from Ak-Chin, which definitely reduces access to car seats for low-income families.

(3) Collecting child passenger safety and community knowledge data through key informant interviews, community surveys, and data collection and analysis.

Key informant interviews were conducted with the Ak-Chin judge and Safety Manager regarding child passenger safety and a proposed occupant restraint law. The judge discussed issues of jurisdiction and enforcement within the boundary of Ak-Chin Reservation. The Safety Manager shared his observations that drivers often start speeding when they leave the urban setting; and that non-use of seat belts is often a norm in rural communities.

A survey of community knowledge and attitudes regarding child passenger safety was distributed during community gatherings such as the Easter picnic. The survey questions appear in Table 1. Review of the first 21 surveys revealed that 100% of respondents answered “yes” when asked if they feel car seats are important and 95% supported passage of a seat belt law.

More than 180 observations of child passenger safety seat use among child passengers birth to 8 years were made between August 2015 and February 2015. Data was collected with assistance from IHS environmental health personnel. Observations were made at several sites in the community including the WIC office, Ak-Chin Child Development and Service Center, and the Ak-Chin Masik Tas festivities event. We used the Child Passenger Safety Seat Use Observation Form developed for the IHS Ride Safe Program.3 Data items included the date, time, and location of the observations; name of the observer; and whether the child was restrained or unrestrained. The overall observed restraint use rate was 75%. Although this may appear like a high restraint rate, our goal is obviously to have 100% of children transported in correctly-installed child passenger safety seats.

Discussion and Recommendations

The components of a comprehensive child passenger safety program have been summarized in a previous Provider article.10 Recommendations to enhance the safety of child passengers within the Ak-Chin Indian Community include:

(1) Establishing a child passenger coalition comprised of CPS technicians, police and fire departments, social services and CPS advocates. The coalition should ideally be supported by the Community Council by way of a Council resolution.

(2) Establishing a unified approach for outreach and education services. This may include but not be limited to the coalition identifying community resources and opportunities for services and combining distribution and education at community events with large population turnouts to maximize exposure. A Community-wide seat-belt use campaign was rolled out on March 30, 2016. Initiated
by a Community Council-endorsed safety committee, the focus of the campaign was primarily on adult motor vehicle restraint use. This will parallel the car seat distribution and education program provided by the Ak-Chin Injury Prevention Program through the Health Education Department.

(3) Identifying funding sources such as those suggested during key informant interviews. One proposed method is to dedicate funds from traffic citation fees to purchase car seats and support education programs for child passenger safety. A second source of funding includes the Tribal Injury Prevention Cooperative Agreement Program (TIPCAP) which the Ak-Chin Indian Community currently has funding through 2020.

(4) Instituting a system to track CPS-related activities, such as the numbers and types of car seats distributed. It would be useful to link data from the current distribution systems of the Ak-Chin Fire Department, Gila River WIC, and Ak-Chin Health Education Injury Prevention Program. This would help evaluate where, when, and to whom car seats are being distributed along with what type of education is being provided at the time of installation. In addition, this would help monitor car seat recall and expiration data, allowing CPS technicians, and/or a central child safety seat distribution program manager, to notify community members of the notices.

(5) Proposing and implementing a primary occupant restraint enforcement law for the Ak-Chin Indian Community will be a high priority. According to the Insurance Institute for Highway Safety, safety belts saved an estimated 12,584 lives in 2013. If everyone buckled up, an additional 2,800 deaths could have been prevented. While the vast majority of drivers and front-seat passengers use safety belts, most people who die in crashes are unrestrained. Additionally, belt laws increase belt use, especially with publicized enforcement. Belt use rates are higher in states with primary enforcement laws.

Presently, Arizona does not have a primary enforcement law governing the use of safety belts for children eight years and under. Passengers eight years and older must be restrained in the front seat. Passengers eight to 15 years must be restrained in all other seating positions. Failure to comply subjects violators to a $10 fine. Arizona requires children four years and younger, and children five through seven years old who are 57 inches or shorter, to be secured in child safety seats. Adult belt is permissible for five through seven who are taller than 57 inches. Those failing to comply are subject to a $50 fine.

Tribes such as the Standing Rock Sioux, Little Traverse Bay Bands of Odawa Waganakising Odawa, and Coquille Indian are among many tribes that have enacted seat belt laws to try to prevent motor vehicle-related injuries within their communities, some of which are primary seat belt laws. Specific to transporting children in vehicles, the Navajo Nation Motor Vehicle Code states that “…any parent, guardian or custodian of an infant, child or youth under the age of 12 years and less than 4′9″, when transporting the child in a non-commercial motor vehicle operated on any highway of the Navajo Nation, shall properly secure the child in a child passenger restraint system.” The Ak-Chin Child Passenger Safety Project will serve as a catalyst for community members, decision-makers, and child safety advocates to support passage of a primary seat belt and child safety seat law, thereby enhancing the health and well-being of all members of the AK-Chin Community.

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References


2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Unintentional Injury Prevention. Child


Community Survey Knowledge and Attitudes of Child Passenger Safety Ak-Chin Indian Community – Spring 2016

Demographics:
1. Are you an Ak-Chin member? Yes No Other tribe
2. Gender: Male Female
3. What is your age? __________

Car Seat Questions:
4. Do you know how to install a car seat? Yes No

Comment ________________

5. Where would you go to receive a car seat? (mark all that apply)
   - Com Health Rep. Fire Department
   - WIC
   - Police Department, Social Services
   - Other: __________

6. Did/are you using a car seat for the children? Yes No I do not transport children

7. Does the Tribe currently have a law requiring children to ride in a car seat on the reservation? Yes No I don't know

8. Do you think there should be a Tribal law that requires all children to ride in a car seat on the reservation? Yes No

9. Do you feel car seats are important? Yes No

Please explain __________
Background:
The IHS National Pharmacy & Therapeutics Committee (NPTC) discussed non-biologic Disease-modifying Anti-rheumatic Drugs (DMARDs) in the treatment of Rheumatoid Arthritis (RA) at the May 2016 meeting. The medications addressed were methotrexate, sulfasalazine, hydroxychloroquine, leflunomide, azathioprine, and combination therapy. Prior to the review, the National Core Formulary (NCF) included methotrexate, sulfasalazine, and hydroxychloroquine. Having considered the clinical data, IHS procurement and utilization trends, and pharmacoeconomic analyses, the NPTC added leflunomide to the NCF.

Discussion:
RA is an autoimmune condition that affects 0.6-1% of the American population (Helmick, 2008). Prevalence rates in American Indians and Alaska Natives (AI/AN) however, although not available for all populations, are considerably higher, with the highest rates in the Pima (3.2% in men, 7% in women [DelPuente, 1989]) and Chipewa (4.8% in men, 8.2% in women [Harvey, 1981]) populations. Data exist showing that RA is also more severe in AI/AN populations, with younger age of onset and more frequent use of combination therapies and corticosteroids for adequate control of disease (Peschken, 2010). Extra-articular manifestations of RA (e.g., nodules, Sjogren’s syndrome, anemia of chronic disease, cardiopulmonary disease) effect up to 40% of patients, are common early in RA disease and are related to worse outcomes, including functional impairment and mortality (Young, 2007). Available treatment options include lifestyle changes, non-biologic DMARDs, biologic DMARDs, miscellaneous DMARDs and kinase inhibitors, combination regimens and surgery. Both the 2015 American College of Rheumatology (ACR) and the 2013 European League Against Rheumatism recommendations encourage early pharmacological treatment to a target of remission (Jasvinder, 2015; Smolen, 2013).

Methotrexate (MTX) is a folic acid antagonist. It inhibits the synthesis of DNA, RNA and proteins by irreversibly binding to dihydrofolate reductase. It interacts with numerous drugs and has a large number of potential adverse reactions. A supplement of folic acid 1 mg daily is recommended in conjunction with MTX therapy to decrease the risk of toxicities (Kremer, 2014). A Cochrane review in 2014 evaluated MTX use vs. placebo. A clinically important and statistically significant improvement was found with MTX use in the ACR 50 score, a measure based on ACR criteria of at least a 50% improvement in the number of tender or swollen joints and other outcomes such as pain and disability (Absolute Treatment Benefit [ATB] 15%, 95% CI: 8% to 23%). There was also a statistically significant improvement in physical function on a scale of 0-3 at 12-52 weeks (Mean Difference [MD] -0.27, 95% CI: -0.39 to -0.16). Methotrexate group patients, however, were twice as likely to discontinue the study (16% vs. 8%). No patients in either group met remission criteria (Lopez-Olivio, 2014).

Sulfasalazine (SSZ) has been considered as a RA treatment since the 1940s. Its active metabolite, 5-aminosalicylic acid, is thought to modulate local chemical mediators of the inflammatory response, especially leukotrienes (Weisman, 2014). A 2010 Cochrane review considered 6 trials comparing SSZ with placebo. A statistically significant benefit was found for SSZ (Standardized Mean Differences [SMD] -0.33 to -0.52). Overall withdrawals due to lack of efficacy were significantly higher in the placebo group while there was no difference in withdrawals due to toxicity (Suarez-Almazor, Antimalarials, 2010).

Hydroxychloroquine (HCQ) is an antimalarial agent with an unclear mechanism of action in treating RA. A 2010 Cochrane review looked at 4 studies comparing antimalarial agents with placebo. A statistically significant benefit was found for SSZ for tender and swollen joints and pain. Placebo patients were 4 times more likely to withdraw due to lack of efficacy, while SSZ patients had significantly higher withdrawals due to adverse reactions (OR=3.0) (Suarez-Almazor, SSZ, 2010).

Leflunomide (LFN) is a newer treatment for RA, approved in 1998. It is an isoxazol derivative with an active metabolite, A77 1726, which inhibits the enzyme dihydro-orotate dehydrogenase. This activates the rate-limiting step for de novo synthesis of pyrimidines, reducing the proliferation of activated autoimmune T-lymphocytes and resulting in decreased autoimmune response and synovial inflammation (Fox, 2015). A Cochrane review in 2010 evaluated 33 trials comparing LFN monotherapy or in combination with another DMARD with placebo. With regard to ACR 20 improvement criteria, there
was a 28% absolute difference in improvement in LFN compared to placebo. Withdrawals due to adverse events were 10\% greater, but the study concluded that LFN appeared to improve all clinical outcomes and delay radiologic progression at 6 and 12 months compared to placebo (Osiri, 2010).

Azathioprine was originally a post-transplant anti-rejection drug that was later used to treat RA. It has metabolites that are incorporated into replicating DNA and halt replication, and it also blocks the purine synthesis pathway. A Cochrane 2009 review looked at 3 small trials comparing azathioprine with placebo, and while there was a statistically significant benefit found for joint scores (standardized weighted MD -0.98, 95\% CI: -1.45 to -0.50), there were significantly higher withdrawals due to adverse reactions (OR=4.56, 95\% CI: 1.16 to 17.85). The reviewers concluded that other drugs should be used before azathioprine in treating RA (Suarez-Almazor, 2009).

DMARDs are commonly used in combination. The 2007 MASCOT study was a double-blind, placebo-controlled, multi-phase study comparing patients who had inadequate response to SSZ alone randomized to regimens of SSZ plus MTX, SSZ plus placebo, or placebo plus MTX. At 18 months, the combination group had more favorable disease activity results, though it was not statistically significant (Capell, 2007). The 2014 tReach trial was a single-blinded trial randomizing patients to one of 3 arms: (1) MTX + SSZ + HCQ + intramuscular glucocorticoids (GC), (2) MTX + SSZ + HCQ + oral GC taper, (3) MTX + oral GC taper. At 12 months, functional improvement was seen in all 3 groups though there were no significant differences, and no differences in disease activity score reduction found between regimens. The triple therapy group, however, attained the reduction sooner (De Jong, 2014). Additionally, a Cochrane 2010 review compared MTX alone to combinations with other non-biologic DMARDs. No significant advantage was found for DMARD naïve patients in the MTX combination group versus monotherapy (Katchamart, 2010).

**Findings:**
Clinical studies and meta-analyses demonstrate that methotrexate, sulfasalazine, hydroxychloroquine and leflunomide are all effective options in the treatment of RA. Agency-specific procurement and utilization data support routine use of LFN across the IHS.

For questions about this document, please contact the NPTC at IHSNPTC1@ihs.gov. For more information about the NPTC, please visit the NPTC website.

**References:**
6. CDC. Rheumatoid arthritis. National Center for Chronic Disease Prevention and Health Promotion. 2015.


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