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Injuries and Safe Communities Accreditation: Is there a link?

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ABSTRACT

Safe Communities (SC) is a global movement that brings together community stakeholders to collaboratively address injury concerns. SC accreditation is a formal process through which communities are recognized for strengthening local injury prevention capacity. Six million Americans live in 25 SC sites, but no research has been done to understand the model's potential impact on this population. This study explored the temporal relationship between SC accreditation and injury trends in three SC sites from the state of Illinois—Arlington Heights, Itasca, and New Lenox. Hospitalization data, including patient demographics, exposure information, injury outcomes, and economic variables, were obtained from a statewide hospital discharge database for a 12-year period (1999–2011). Joinpoint regression models were fitted to identify any periods of significant change, examine the direction of the injury trend, and to estimate monthly percent changes in injury counts and rates. Poisson random-intercept regression measured the average total change since the official SC accreditation for the three communities combined and compared them to three matched control sites. In joinpoint regression, one of the SC sites showed a 10-year increase in hospitalization cases and rates followed by a two-year decline, and the trend reversal occurred while the community was pursuing the SC accreditation. Injury hospitalizations decreased after accreditation compared to the pre-accreditation period when SC sites were compared to their control counterparts using Poisson modeling. Our findings suggest that the SC model may be a promising approach to reduce injuries. Further research is warranted to replicate these findings in other communities.

1. Introduction

Safe Communities (SC) is a well-known grassroots initiative that promotes coalition building and encourages community participation in injury prevention. Originated under the auspice of the World Health Organization Collaborating Centre on Community Safety Promotion, the SC movement has transcended geopolitical boundaries and found support around the globe as evidenced by the fact that over 300 sites representing 29 countries have been formally accredited since 1989. Nonetheless, research on the SC model has produced mixed results in regards to its impact on injury outcomes. A Cochrane Review summarizing published evidence from Austria, Australia, New Zealand, Norway, and Sweden, concluded that despite some promising findings, "...there remains insufficient evidence from which to draw definitive conclusions" about its effectiveness (Spinks et al., 2009).

SC accreditation is a process through which communities are formally recognized by designated SC Certifying Centers for having met a set of qualification criteria. According to the international accreditation requirements, a Safe Community needs to demonstrate: 1) a history of collaboration among stakeholders with a vested interest in community safety; 2) injury prevention programs aimed at a broad scope of populations and settings; 3) programs that address the needs of vulnerable groups; 4) injury surveillance activities; 5) program evaluation activities; and 6) active engagement with other SCs and networks (Spinks et al., 2009). Clearly, to meet these criteria, a community would need to show that investments in safety improvement are not simply an assortment of isolated programs, but rather strategic collaborations leading to positive injury outcomes through integration of priorities, resources, expertise, perspectives, and funding streams. One critical feature of the SC model is that it forces communities to apply the same philosophy of collaboration, cooperation, and data-driven performance improvement to both dimensions of injury—intentional and unintentional.

Looking at the typical accreditation experience of SCs, three broad phases of activity can be identified—pre-application, appli-

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cation, and accreditation. During the pre-application phase, a community works to build a coalition by identifying and bringing together organizations and individuals committed to injury prevention. The coalition's goals, policies, structure, membership, and budget are established to support future programs. The coalition starts to engage its members and other partners in planning, developing, and delivering programs to achieve stated objectives. The pre-application phase is when communities first become aware of and decide to pursue SC status. This phase, which may last between several months and several years, ends when the coalition—with support from the top local governing body—submits a letter of intent to seek SC accreditation. The application phase may take up to a year to complete. During this phase, the coalition goes through a self-examination to describe its policies, programs, resources, and achievements in order to complete a SC application. If the application is accepted, trained observers assigned by a SC Certifying Center conduct an on-site assessment of the community to collect additional information and verify the validity of the application. Granting of the SC accreditation marks the beginning of the accreditation phase, in which the coalition is expected to maintain or expand its scope of activities and also become actively involved in the SC movement through peer exchanges, capacity building, mentorship, and shared learning.

In addition to being a process, SC accreditation can also be viewed as a status. Although accredited SCs have a certain cachet of respectability, which their neighbors may lack, SC accreditation does not declare populations or environments "safe" per se. Rather, the goal is to ascertain whether communities can demonstrate evidence of a concerted and sustainable local effort to ensure that the safety of all individuals and families is a priority. At the heart of this multifaceted work is a group of local stakeholders with a vested interest in promoting community safety, who do so by relying on individual commitment, common goals, and shared, albeit often limited, resources.

Motor-vehicle crashes, falls, suicide, drowning, violence, and other factors contribute to the overall impact of intentional and unintentional injury on communities. In the United States, unintentional injuries and suicide are among the top-ten causes of mortality. Unintentional injuries are also the leading cause of death among people 1 through 44 years old (CDC, 2015). One would be hard pressed to find a U.S. community unaffected by the burden of injuries. In response to this public health epidemic, partnership-based interventions have been developed with a focus on specific population segments, behaviors, or injury types. Through targeted interventions, the Safe Kids/Healthy Neighborhoods Injury Prevention Program in Harlem, New York was instrumental in reducing pediatric injuries due to motor-vehicle crashes, falls, assault, and firearms (Davidson et al., 1994). As a result of its success, the program became a blueprint for a national-level multifaceted approach to injury prevention incorporating elements of injury surveillance, collaboration, education, intervention development, and evaluation (Pressley et al., 2005). Communities That Care (CTC) is another example of how a long-term comprehensive community strategy based on stakeholder engagement can be applied nationally to reduce delinquent behavior, substance use, and violence among adolescents (Fagan and Hawkins, 2013). The national expansion of Harlem's Safe Kids/Healthy Neighborhoods program and CTC serves as an illustration of research-driven prevention in which "community trials use articulated theory, careful measurement, and designs with comparison or control communities that provide evidence for the potential of community-level interventions" (Wandersman and Florin, 2003). On the other hand, Safe Communities, an example of community-owned and community-driven prevention, has been growing in popularity while there is very little research evidence available to the communities that the model works as expected.

Istre et al. (2011) found that a targeted intervention implemented under the SC umbrella in Dallas, Texas was instrumental in raising child passenger restraint use. However, questions have been raised about whether the intervention's success was a function of its effective implementation or the fact that it was implemented by a coalition of SC partners (Johnston, 2011). The study did not assess whether the intervention in question had a community-wide impact on child occupant injuries. The Community Coalition Action Theory maintains that the impact of partnership building on long-term health and safety outcomes goes far beyond what isolated interventions can accomplish alone. This impact can be seen in the way community partners work together to augment community programs, policies, and services and, furthermore, enhance community capacity through new opportunities for leadership, strategic planning, multi-sectoral collaboration, skill building, and resource mobilization (Butterfoss and Kegler, 2009). The Theory is particularly relevant to a discussion of SC coalitions because of their interest in addressing community safety in a comprehensive manner, rather than focusing on a specific population segment or one etiological factor. While it might be informative to isolate the individual pathways of influence, the collective contribution of these factors to creating a climate for positive change in community safety also deserves attention.

The SC movement in the United States is a relatively recent phenomenon. About 6.5 million Americans live in 25 SC sites, most of which have been accredited only in the last 6 years. Of the 25 sites, 11 are municipalities (65.8% of the total SC population), 9 counties (31.1% of population), 4 universities (1.8% of population), and 1 territory (i.e., several counties; 1.3% of population). The median population size of SCs is 82,000 with Dallas County, Texas being the largest (pop. 2,480,331) and Village of Itasca, Illinois being the smallest with 8811 residents (United States Census Bureau, 2015).

This study looks at the injury experience of three municipalities located in the state of Illinois that independently sought and eventually succeeded in obtaining SC accreditation around the late 2000s. The Village of Arlington Heights received SC accreditation in December 2010 in recognition of comprehensive, community-wide safety improvement efforts that had been collectively performed by members of its coalition. At the time of accreditation, the coalition was meeting bimonthly, and its members were local elected officials, municipal emergency services (lead agency), public health, three local school districts, aging services network providers, public transit, business community, and others. The coalition was supported by several community-wide committees tasked with addressing more specific issues such as bicycle safety, safety of physical environment, youth welfare, fire prevention, and school safety. Going through the accreditation process inspired the coalition to add an emphasis on injury surveillance, safe aging, and suicide prevention.

Itasca's SC accreditation was affirmed in April 2009. Members of the Itasca SC Coalition were from the mayor's office, police (lead agency), fire protection, park district, recreation facilities, school district, public library, nursing care facilities, civic organizations, family and youth services, and faith-based organizations. The scope of the coalition's activities encompassed several areas—road safety, crime prevention, community emergency preparedness and communication, interpersonal violence, child passenger restraint use, prescription drug disposal, pedestrian safety, prevention of drowning, school safety, and substance abuse.

The Village of New Lenox decided to pursue SC accreditation in November 2008 and was official accredited in April 2010. The New Lenox SC Coalition meets monthly and includes 31 representatives from law enforcement (lead agency), fire protection, municipal government, schools, public transportation agencies, health care, social services, emergency management, public health, wellness, faith-based organizations, civic organizations, and local

businesses. Their programs have addressed a wide spectrum of safety concerns. In 2014, members of the coalition formed seven committees to place more emphasis on emergency preparedness, motor-vehicle safety, elderly fall prevention, preventing prescription drug overdose, suicide prevention, workplace safety, and youth safety. Additional information about the three communities and the full scope of the SC initiatives is available from their Safe Communities accreditation applications (NSC, 2015).

The SC accreditation process is flexible enough to allow each community to make its own decisions in regards to programmatic priorities and administrative practices. Even though the three aforementioned communities had different programs in place addressing a fairly similar set of safety topics related to both intentional and unintentional injuries, a common framework provided by SC accreditation was their conceptual foundation for action. Partnership building is one constant of the accreditation process whose influence may go beyond what injury prevention activities alone can explain. The fact that various government agencies served as the coordinating bodies of these three coalitions indicates that local authorities are uniquely positioned to bring a wide gamut of local stakeholders around Table to stimulate preventive action. It is not surprising considering that many services vital to addressing the leading causes of injury are in the purview of local authorities, including law enforcement, fire protection, emergency response, economic development, education, employment, housing, community design, and public transportation. It is noteworthy that the SC events depicted in this investigation came on the heels of the global economic recession, which particularly affected the ability of local government agencies to perform their regular responsibilities. Thus, many of them came under even greater pressure to ensure optimal utilization of resources and collectively cope with challenges presented by motor-vehicle crashes, gun violence, falls, suicide, and other safety concerns.

The current ecological intervention study was conducted to evaluate the temporal relationship between SC accreditation and injury hospitalizations within three U.S. communities. Taking into account the prior research (for a systematic review see Spinks et al., 2009) and the extremely broad spectrum of safety improvement initiatives undertaken by the SC coalitions, we hypothesize that SC accreditation should be associated with a reduction in all injuries—regardless of the mechanism, intent, or causality—in accredited SCs over time. Furthermore, we expect to see higher rates of reduction among accredited SCs compared to control sites.

2. Methods

2.1. Data source

The study focused on three SC sites—Arlington Heights, Itasca, and New Lenox—located in the state of Illinois and considered suburban due to close proximity to the city of Chicago. Population data were obtained from the US Census Bureau by combining the 2000 and 2010 Census results with annual estimates of the resident population (United States Census Bureau, 2015). Injury data were obtained from the Illinois Hospital Association's Hospital Discharge Database. The database includes all patients treated for 24 h or more in any Illinois hospitals for any medical reason. The dataset includes information on patient demographics (age, race, sex), exposure information, health outcomes (diagnoses, hospital procedures, and discharge status), and economic outcomes (hospital charges, payer source). Based on the annual state audit, the hospitals included in the datasets comprise 96.5% of all patient admissions statewide (Illinois Department of Public Health, 2013).

Patients' residential ZIP code was used to identify cases for inclusion in the study. The study population included all cases with an International Classification of Diseases, Ninth edition, (ICD-9-CM) cause of injury E-codes in the 800–995 range, thus, including both intentional and unintentional injuries. The E-codes include cases of poisoning in addition to traumatic injuries. Analyses were performed on injury-related hospitalization cases that occurred between July 1999 and June 2011 (latest year available as of August 2014).

2.2. Analysis—joinpoint regression

Monthly injury counts and crude rates (injury-related hospitalizations per 100,000 population) were calculated. Joinpoint regression models (Joinpoint Regression Program version 4.1.0, National Cancer Institute, Bethesda, MD) were fitted separately for the three communities to identify any periods of significant change, examine the direction of the trend of injuries, and to estimate monthly percent changes in injury counts and rates. Developed to study cancer trends (Kim et al., 2000), joinpoint regression has been applied in investigations of injury-related hospitalizations (Orces, 2009), motor-vehicle crashes (Barrio et al., 2015), suicide (Gagné et al., 2010), and homicide (Langmann, 2012). The method tests the null hypothesis that no significant changes in the slope of injuries occurs during the observation period against a series of alternative hypotheses. The software provides the estimated point in which a significant period of change occurs. We initially tested the null hypothesis using a maximum of three changes in slope with an overall significance level of 0.05 divided by the number of joinpoints in the final model. We also controlled for autocorrelation using autoregressive terms derived from autoregression models. The slope in the joinpoint regression model represents the estimated monthly percent change in cases or injury rates per 100,000 residents during the period of observation. We used the global *F*-test derived from the joinpoint regression analysis to evaluate the final alternative hypothesis against the null hypothesis.

2.3. Analysis—mixed regression models

Additional analyses were performed by comparing the three SC sites to three control communities in order to measure the impact of SC accreditation on injury-related hospitalizations. Palatine, Wood Dale, and Mokena from the same Illinois counties were selected as control sites because their characteristics, including population size, demographic composition, median household income, and educational attainment, matched to those of Arlington Heights, Itasca, and New Lenox. Demographic characteristics of the intervention and control communities are provided in Table 1. The three control communities bear some degree of similarity to the SC sites in terms of program offerings geared towards community safety. The municipal law enforcement, fire protection, and recreational departments maintain a fairly standard set of activities combining elements of enforcement and education such as crime prevention, traffic law enforcement, pedestrian safety, child passenger safety, emergency response and management, home safety, and school safety. However, to the best of our knowledge, there was no evidence of comprehensive, collaborative, community-wide efforts focused on injury prevention within the control communities.

A Poisson random-intercept regression model measured the average total change since the SC accreditation dates for the communities and compared them to the control sites with random effects for repeated measures within ZIP codes. The dispersion test indicated that the Poisson distribution was adequate for this data series. The dependent variable was a monthly count of the occurrence of injury hospitalizations. Time, expressed as calendar months of observation before and after accreditation, was the independent variable of interest. The study design was unbalanced since the pre- and post-accreditation periods varied

Table 1
Characteristics of the study sites.

	Arlington Heights	Palatine	Itasca	Wood Dale	New Lenox	Mokena	State of Illinois
Accredited Safe Community	Yes	No	Yes	No	Yes	No	–
County	Cook/Lake	Cook/Lake	DuPage	DuPage	Will	Will	–
Population	75,101	68,557	8,649	13,770	24,394	18,740	12,830,632
Median age (years)[a]	41.9	36.5	40.9	41.1	36.6	40.4	36.6
% under 5 years	5.5	6.6	6.0	5.5	3.4	5.9	6.5
% over 65 years	17.2	10.5	13.7	16.6	3.5	9.1	12.5
% Caucasian	88.2	76.9	84.1	83.4	96.2	94.5	71.5
% African American	1.3	2.7	2.1	1.2	.7	1.3	14.5
% Asian	7.1	10.3	8.5	5.2	.8	2.0	4.6
% Hispanic	5.7	18.0	10.6	20.3	5.7	4.8	15.8
Median household income ($)	77,121	72,818	77,368	61,406	90,833	99,330	56,853
% earned Bachelor's Degree or higher (25 years and older)	52.2	47.9	39.5	20.8	35.1	35.9	31.1
Mean travel time to work (min)[a]	29.0	27.8	25.8	26.7	35.4	30.7	28.0

U.S. Census Bureau, 2010 Census.
[a] U.S. Census Bureau, American Community Survey, 2009–2013 estimates.

across the communities (Arlington Heights—137 mos. pre/7 mos. post; Itasca—117 mos./27 mos.; New Lenox—129 mos./15 mos.). However, the selected analytical approach is flexible enough to accommodate unbalanced repeated measurements across study units (Atkins et al., 2013). We used the GLIMMIX procedure in SAS (version 9.2, SAS Institute Inc., Cary, NC).

3. Results

3.1. Arlington Heights

From 2000 to 2010, a total of 11,022 injury hospitalizations occurred among Arlington Heights residents for an average of 919 cases per year. Within the same time period, the number of injuries nearly tripled and the crude injury rate nearly doubled, whereas the total population remained stable and may have even dropped slightly based on census data. Although the crude injury rate fluctuated from year to year, on average it increased 6.75% annually. The 2010 crude rate was 16.5 injury hospitalizations per 1000 population. Falls were by far the leading cause of injury hospitalization with persons 65 years and older accounting for more than 80% of the total. Joinpoint regression analysis covering the time period from July 1999 to June 2011 showed that the injury counts and crude rates trended upward at an average monthly rate of 0.4% ($p < .001$) and 0.5% ($p < .001$), respectively, and no significant changes in slope were identified (see Fig. 1).

3.2. Itasca

From 2000 to 2010, injury-related hospitalizations in Itasca amounted to 1129 (on average 107 cases per year). The number of injury hospitalizations and crude rate increased three-fold, while the village population growth showed a marginal increase. Since the population of this community is relatively small (<10,000), even a minor change in the number of injuries may have a major impact on the crude rate. A decrease of 21.8% in the crude rate, that was observed in 2007 compared to 2006, was followed a year later by an increase of 42.0%. In 2010, there were 19.7 injury hospitalizations per 1000 population. Poisoning and falls were the leading causes of injury in 2010, accounting for 32% and 30% of all injury hospitalization cases, respectively. After a joinpoint that occurred in November 1999, both monthly injury counts and crude rates (shown in Fig. 1) showed an average monthly increase of 0.9% ($p < .001$).

3.3. New Lenox

From 2000 to 2010, New Lenox's injury-related hospitalizations (3014 cases total) and the crude injury hospitalization rate (average annual rate of 12.2 per 1000 population) showed an upward trend driven primarily by an increase in poisoning—the leading cause of injury hospitalization—and falls (31% and 28% of all injury hospitalizations, respectively). During the same period, injuries due to motor-vehicle crashes declined. The population of New Lenox grew by 33%. The joinpoint trend line for the crude injury rates is shown in Fig. 1. An increase of 0.7% per month in *injury-related hospitalizations* from July 1999 to May 2009 (Slope 1) was followed by a decline of 1.3% per month from June 2009 to June 2011 (Slope 2). The overall trend reversal (Slope 2–Slope 1) of 2.0% per month was statistically significant ($p = .003$). An increase of 0.4% per month in *crude injury rate* from July 1999 to June 2009 (Slope 1) was followed by a decline of 1.2% per month from July 2009 to June 2011 (Slope 2). The trend reversal of 1.7% per month was also statistically significant ($p = .022$).

3.4. Combined before-and-after analysis

In the hierarchical multivariable model not including the three comparison cities, we observed an 8.7% decline in the number of injury hospitalizations ($p = .004$) across the three Safe Communities in the post-accreditation period compared to the period prior to accreditation. In a second hierarchical multivariable model that included the three comparison cities, we observed a 6.9% decline in the number of injury hospitalizations ($p = .030$) across the three SCs after accreditation compared to the pre-accreditation period. When stratifying the data by mechanism and age groups, only injury rates among residents 65 years and older showed a significant decline in the three cities after accreditation (decline of 9.5%; $p < .001$).

4. Discussion

This study aimed to understand the impact of the SC model in the US where injuries remain a leading cause of mortality and health care utilization. Many communities have voluntarily adopted the approach based on the potential to reduce the burden of injury on their residents through collaboration, resource sharing, and community engagement in spite of scant proof of its effectiveness. The current study establishes a link between SC accreditation and short-term injury trends. The study findings point to a statistical reduction across SC sites with respect to injury hospitalization rates before and after accreditation even though individually the communities exhibited very different trends. We also found that injury hospitalization rates declined at a higher rate in the intervention sites compared to their control counterparts, lending additional support to our hypotheses.

The analytical approach of the study relied on fitting joinpoint and mixed regression models as these techniques are comple-

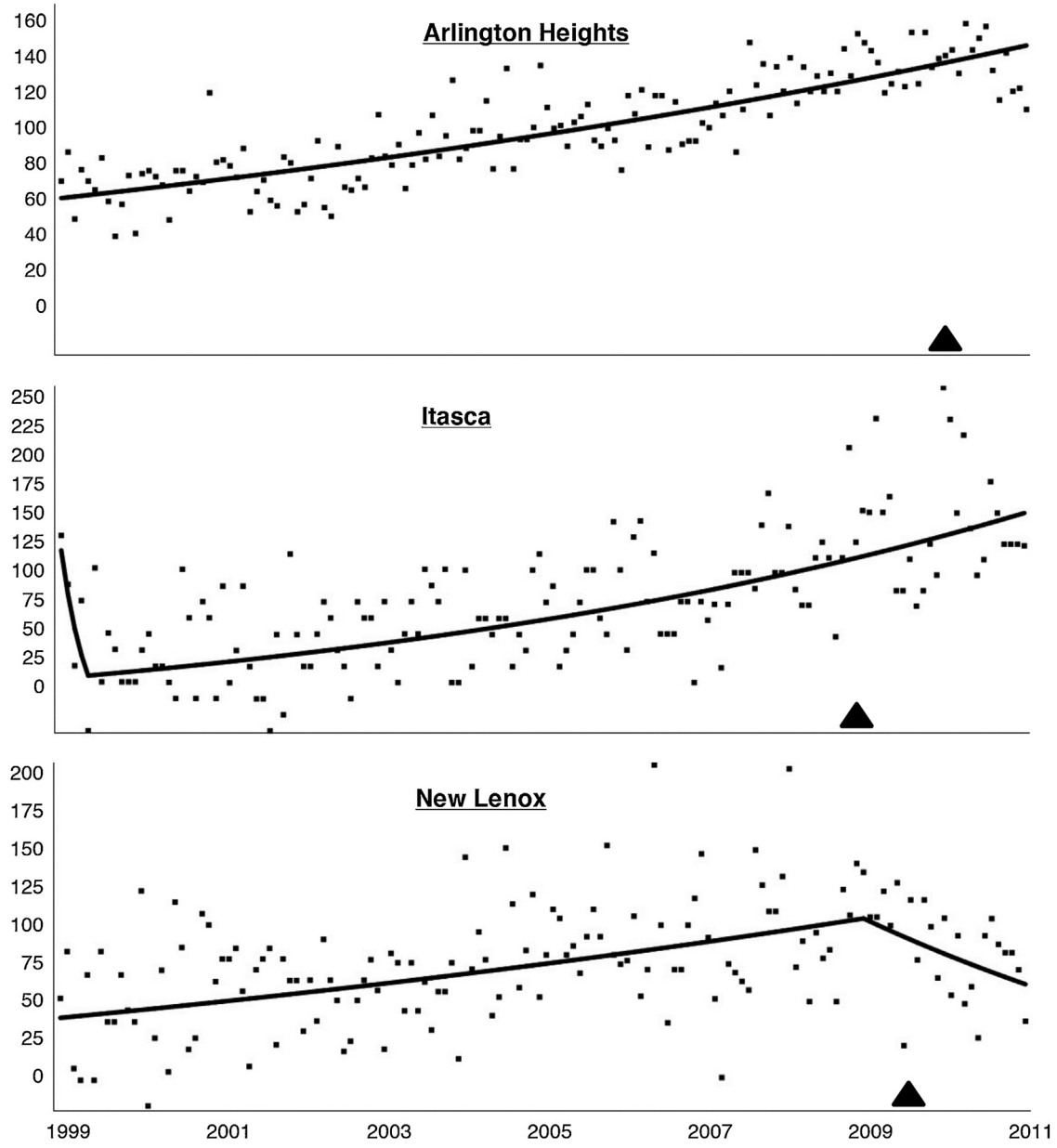

Fig. 1. Joinpoint trends using crude rates per 100,000 population. ■, Observed values; ▬, Joinpoint trend line; ▲, SC accreditation.

mentary and can be used in tandem to examine temporal trends (Vaughan et al., 2015). Both techniques have been widely used to model count data. One advantage of using joinpoint regression is that it allows identification of changes in the trend, if they occur, thus eliminating the need to define their occurrence a priori. We used joinpoint regression to explore site-specific trends. On the other hand, the analyses involving marginal regression models focused on making inferences about the entire study population, rather than specific communities, and it was encouraging to see that injuries declined at a higher rate in the intervention sites compared to their control counterparts. Looking at the injury outcomes of the study, one ought to conclude that there is something afoot in these communities, and it seems to be distinctly tied to SC accreditation.

It is also conceivable that only one of the SC sites in question—New Lenox—is largely responsible for the identified trends and that would help explain why the hierarchical models showed a cumulative net decline across the three sites. New Lenox showed a trend reversal in both injury counts and crude rates that started during the application phase, coinciding with the decision to pursue SC accreditation, and lasted for 1.5 years into the accreditation period. The significance of this finding can be seen not only from a community health, but also economic perspective. A post hoc analysis of the injury hospitalization trends for New Lenox revealed that the 2% reversal in monthly injury counts may have prevented 290 hospitalization cases. Using medical cost data provided in the same hospital discharge database (e.g., charges related to operating room, hospital room, radiology, pharmacy, therapy, laboratory), the average total cost of injury hospitalizations among New Lenox residents during that period was calculated as $48,991.00, resulting in a total cost savings of $14,207,390, or $7.1 million per year (Chained Consumer Price Index adjusted, base year 2009). In the grand scheme of things, these figures may seem trivial, but for a small community whose resources are scarce, they hold both symbolic and practical meaning.

Unfortunately, this study was unable to demonstrate the same level of outcomes in the other two communities. Potential explana-

tions may be attributed to differences in the way the SC coalitions function (e.g., leadership, diversity of coalition partners, synergy) or the scope of their programmatic efforts (e.g., adoption of evidence-based practices). This study is an example of so-called "black-box" evaluations, which can only indicate whether or not an intervention made a difference, but not why (Nilsen et al., 2007). With this design, it may be difficult to tease out precisely how the various components of SC accreditation come together to affect injury trends. One important drawback of our high-level design concerns the difficulty of controlling for other factors (e.g., policies, practices, programs) that may provide an alternative explanation for the study results. It was not the goal of this study to measure the precise impact of the dozens of injury prevention programs implemented across the SC sites. In many ways, the state of injury prevention in these three communities prior to accreditation was a microcosm of the society at large—a motley assortment of programs and actors often focused on very narrow safety issues or population segments, occasionally competing with each other for funding and attention, and rarely seeing value in coordination or cooperation across institutional lines. SC accreditation as an instrument to improve performance through stakeholder collaboration was a rising tide that lifted all boats, which is what we set out to demonstrate.

Our findings should give pause for thought to those who wish to understand, for example, whether the various components of SC accreditation have a differential effect on intentional and unintentional injuries. To date, SC investigations have primarily utilized unintentional injury data, while research on the connection between the SC model and intentional injury outcomes is seriously lacking—a deficiency that has been recognized (Wang and Dalal, 2013) but not rectified. Suicide and homicide are the second and third leading causes of mortality among American adolescents and young adults under the age of 34 years (CDC, 2015). Many SC sites in the United States, including those featured in this research, offer programmatic and policy solutions that target either distal or proximal factors deemed to have some effect on the occurrence of intentional injuries (e.g., substance abuse, youth welfare, community design, safe housing, policing strategies). Although the impact of such solutions in general may be well-understood, their effectiveness in SC settings remains a fertile ground for scientific inquiry.

We acknowledge other limitations of the study methodology such as the lack of random assignment of communities to the intervention and control conditions as well as the somewhat limited number of post-accreditation observations included in the mixed regression models. Statements regarding a causal relationship between SC accreditation and injury hospitalizations should be made with caution because other potential explanations for the identified trends cannot be completely ruled out (e.g., other community safety initiatives, economic or social trends). If larger forces were at play, their effect would have been observed uniformly across the SC sites. Specifically, the economic recession of the late 2000s coincided with a sizable decrease in motor-vehicle crashes and crash fatalities in the United States and, thus, should have affected the injury trends of the SC sites accredited during this time period (Longthorne et al., 2010). However, the monotone upward trend we observed in Arlington Heights and Itasca, but not in New Lenox, gave us some measure of confidence that the effect of societal influences was not a major concern. Reliance on aggregated community-level injury data could be another methodological weakness for this high-level investigation. Our stratified analyses suggest that older adults may have been the only population segment positively affected by SC accreditation. Whatever is taking place in these communities deserves further research attention. A series of follow-up investigations is planned to take a more detailed look at the SC model as more recent hospital data becomes available.

To our knowledge, this is the first quasi-experimental study of the SC model that used monthly injury counts, rather than annual averages, and the exact month, rather than year, of accreditation to carry out before-and-after comparisons. Our outcome measures included not only injury counts, but also injury rates, a preferred measure for assessing intervention effectiveness (Klassen et al., 2000). The use of control communities, although not without precedent in studies of the SC model, made the study and its findings more convincing and, thus, can be seen as another strength (Lindqvist et al., 2001; Nilsen et al., 2007; Svanström et al., 1995). Although the potential benefits gained from SC accreditation are unlikely to extend beyond the borders of SC sites, it is also possible that some of the safety messages and practices may have leaked into the control communities, thus underestimating the true impact of the intervention.

The study brings new attention to the potential of community coalitions as a versatile tool for injury prevention and, furthermore, recognizes SC accreditation as a promising mechanism through which community coalitions can achieve measureable success in protecting the human and economic resources of their partners. Additional research evidence is presently needed to promote the adoption of SC coalitions in the United States.

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