



# **Public Engagement on Bleeding Control: Results of a National Opinion Survey**

**Conducted for the Hartford Consensus**

**April 2016**

## *Overview*

Americans express broad support for initiatives to train and equip first responders and the public to render first aid for bleeding control in mass casualty incidents. Large majorities also say they personally would be likely to give such aid – especially if training and supplies were available.

There are compunctions: Six in 10 or more cite the risk of causing additional pain or injury, being responsible for a bad outcome or exposure to disease as impediments to aiding trauma victims. Yet for many, the desire to help outweighs these concerns.

These and other results in this report are based on a national public opinion survey conducted Nov. 6-11, 2015, by landline and cellular telephone interviews with a random sample of 1,051 adults. The study was sponsored by the Hartford Consensus, a group of trauma surgeons and other concerned professionals formed after the Sandy Hook Elementary School shootings in Sandy Hook, Connecticut, in December 2012. The group seeks to enhance the survivability of intentional mass casualty events by improving emergency treatment of severe bleeding, one of the leading causes of death in trauma victims.

Interviews were completed two days before the Nov. 13 terrorist attacks in Paris, an event underscoring the need for preparation for mass casualty incidents. The survey was produced by Langer Research Associates of New York, N.Y., an independent public opinion research firm.

An article on these results, written by Lenworth M. Jacobs, MD; Karyl J. Burns, RN, Ph.D.; Gary Langer; and Chad Kiewiet de Jonge, Ph.D., is forthcoming in the [Journal of the American College of Surgeons](#).

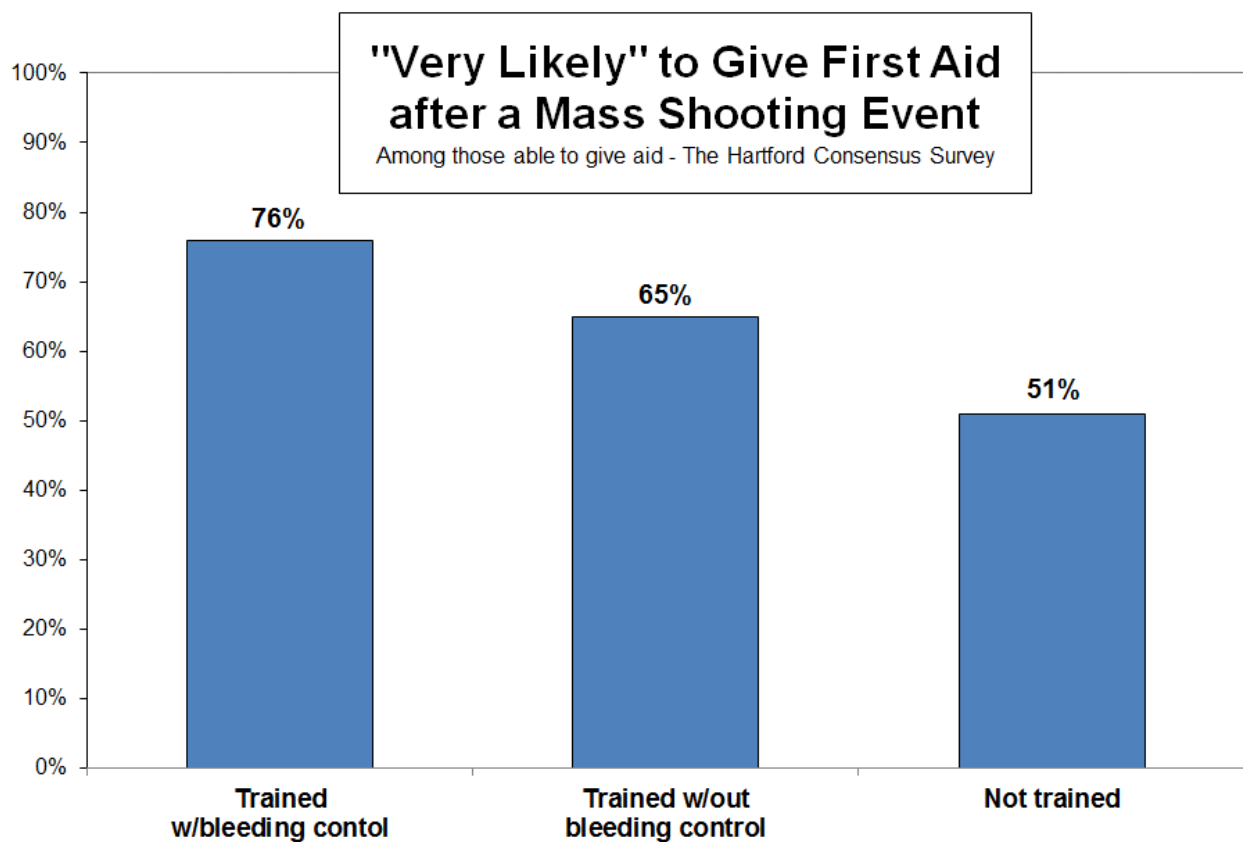
Key findings include the following:

- Training, including instruction in bleeding control techniques, is strongly associated with greater willingness to give aid, lower concerns about reasons not to give aid and interest in receiving further, updated training.
- A near-unanimous 93 percent of Americans support the placement of bleeding control kits in public places, much like the AED (automated external defibrillator) kits commonly seen today. Seventy percent “strongly” support this move, which would make gloves, tourniquets and gauze treated with blood clotting agents widely available.
- Expressed willingness to take action is sharply enhanced by availability of training and bleeding control kits. If both are provided, seven in 10 Americans said they’d be more likely to provide first aid to a trauma victim.
- A vast 91 percent favor training and equipping police officers to give first aid to control severe bleeding in injured people as soon as possible, rather than waiting for emergency medical responders to arrive.

- Two-thirds support a change in police protocols allowing for faster EMS access to areas that may not be totally secure when bleeding control is needed.

The survey also shows broad public experience with first aid training. In addition to finding substantial willingness to assist in mass trauma cases, it explores potential objections to taking action and suggests approaches to enhance public participation in emergency first aid.

Overall, nearly half of those surveyed, 47 percent, reported having had first aid training at some point in their lives. For more than half of them, however, this training occurred more than five years ago; just 13 percent of Americans overall have had first aid training in the past two years. Additionally, one in four of those trained – 27 percent – said their training did not cover how to stop severe bleeding.



Bleeding control techniques have advanced significantly in recent years, largely stemming from the U.S. military's experiences in Iraq and Afghanistan, including the use of tourniquets – once frowned upon, now accepted as a lifesaving technique. When asked how they would seek to stop severe bleeding from a leg injury, relatively few, 36 percent, said they would use a tourniquet. And those trained within the last two years were actually less likely to say they would apply a tourniquet (21 percent) compared with those trained more than two years ago (40 percent) or not trained at all (37 percent), suggesting a need for updated first aid curricula. (Sixty-two percent said they'd apply pressure, also a potentially effective approach.)

### *Rendering Aid*

Among all respondents, 10 percent said they had a disability or other physical limitation that would prevent them from giving someone first aid. Questions on whether and how individuals would provide aid were asked only among those who said they were physically capable of doing so.

One striking result is the willingness to help: Of those capable, 92 percent said they would be very or somewhat likely to provide bleeding control to someone injured in a car accident, and 94 percent said they would do the same after a mass shooting incident, assuming it seemed safe. About six in 10, in either case, said they would be “very” likely to do so. (The two scenarios were tested among random halves of the sample.)<sup>1</sup>

Some of this may reflect social desirability – a preference to present oneself in a positive light. People who anticipate that they’d be likely to help others may be less apt actually do to so – and a real-life decision whether to act may depend on circumstances that can’t be anticipated in a hypothetical question. However, as discussed below, being highly willing to take action varies logically across groups, indicating known-groups validity, a form of construct validity.

The survey took steps to mitigate potential overestimation of willingness to act. Respondents were asked about potential concerns they might have about treating a severely bleeding stranger before being asked their willingness to provide such treatment. Questions also included four-point response scales – rather than simply “yes” or “no” – to enable respondents to express gradations of willingness. Respondents thus were primed to consider factors beyond the socially desirable response, and were able to give positive responses while still expressing misgivings (“somewhat likely”).<sup>2</sup>

While expressed willingness to act may overestimate actually taking action, the survey results nonetheless reflect a strong underlying sentiment in support of providing first aid to trauma victims – a necessary condition of acting. Additional findings, moreover, suggest steps by which that impulse might be supported.

Specifically, in either an accident or a shooting incident, about two-thirds said they’d be more apt to give aid if a bleeding control kit were available or if they’d been trained in bleeding control techniques. About half said either of those would make them “much” more likely to render aid. And if both conditions held – a kit were available *and* a person had training – 71 percent said they’d be more likely to help, with 59 percent “much” more likely.

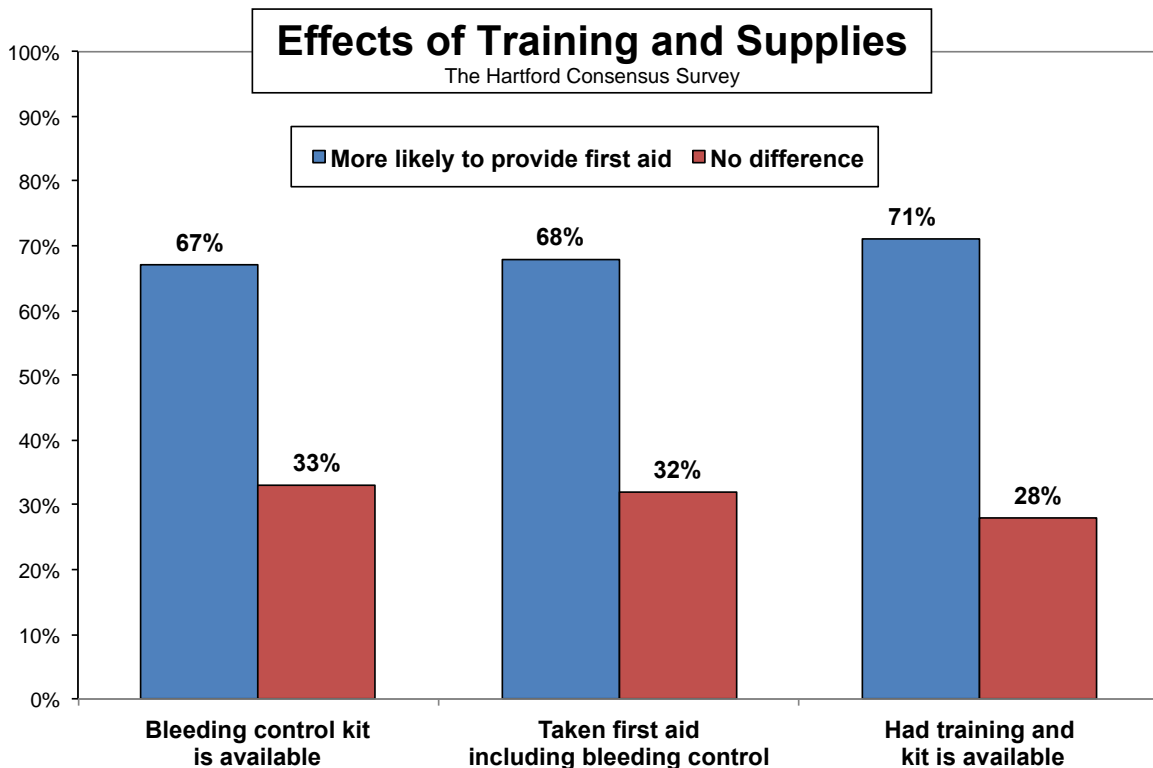
Interest in receiving training of this nature is substantial, particularly if convenient. Eighty-two percent said they’d be very or somewhat interested in taking a free two-hour local class on bleeding control and other first aid techniques. (Of them, half were very interested, half

---

<sup>1</sup> This random half-sample design was implemented to ensure that answers to one scenario would be independent of the other (i.e., to avoid question-order effects), as well as to avoid respondent burden.

<sup>2</sup> With this in mind, this analysis generally distinguishes between respondents who reported being “very likely” to give aid from all others, including those who said they were “somewhat likely” to assist.

somewhat.) One in three able-bodied adults, moreover, said they would “definitely” take such training if the timing fit their schedule.

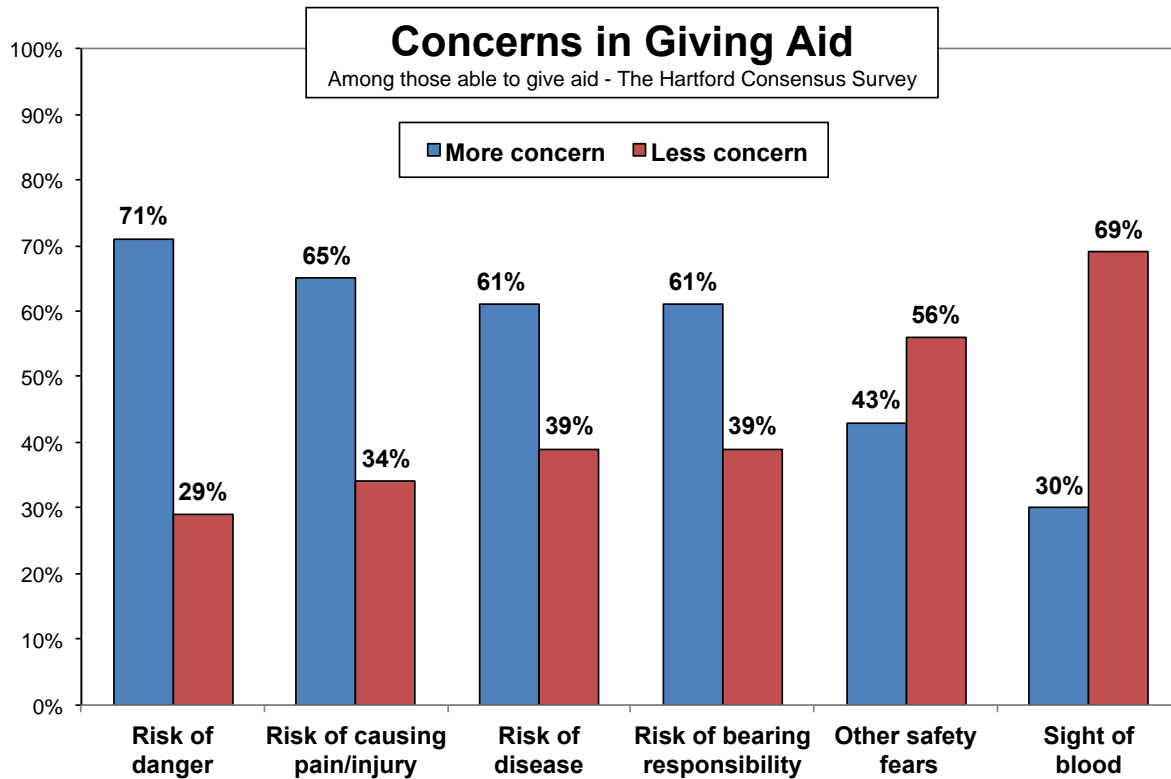


Additionally, 88 percent said they’d respond positively if a friend or family member put themselves at some personal risk in order to provide first aid to a severely bleeding stranger – further evidence of the highly positive associations with such action.

### Concerns

At the same time, there are substantial concerns associated with giving aid. (As noted, these were described prominently in the survey – before questions about giving help to strangers – in an effort to mitigate overestimation of willingness to assist.) Sixty-five percent said causing greater pain and injury to a trauma victim was a concern (“major” or “somewhat”) in considering whether to try to stop severe bleeding. Sixty-one percent said the same about bearing responsibility for a bad outcome, or about the risk of disease from exposure to blood. These three were cited as major concerns by roughly one in three able-bodied adults – 35, 37 and 34 percent, respectively.

In the top concern to emerge, 71 percent cited the risk of injury from further violence in a mass shooting incident as problematic, with 36 percent calling this a major concern. Two other items emerged as lesser concerns – other fears for personal safety (cited by 43 percent) and negative reactions to the sight of blood (30 percent).



All these concerns are correlated – people who expressed one were more apt to express others.<sup>3</sup> And individuals with any of these concerns were much less apt than others to say they’d give first aid to a severely bleeding person. In the sharpest division, 43 percent of those who reported aversion to blood said they’d be very likely to help a shooting victim, vs. 71 percent of others.

Item and level of concern:	Accident		Shooting	
	Very	Less	Very	Less
Blood, more	49%	51	43%	57
Blood, less	66	34	71	29
Disease, more	54	45	56	44
Disease, less	70	30	72	28
Other safety, more	49	51	54	46
Other safety less	69	30	68	32
Pain, more	54	46	56	43
Pain, less	74	26	71	29
Responsibility more	52	48	55	44

<sup>3</sup> All of the concerns are significantly correlated (p<0.001). A table of correlation coefficients is provided in the statistical appendix.

Responsibility less	73	26	72	28
Danger, more	--	--	57	43
Danger, less	--	--	75	25

That said, as detailed below, those with first aid training – particularly those with recent training that included bleeding control techniques – were much less likely to cite any of these concerns as impediments to taking action.

### *Modeling Results*

Statistical models were used to identify independent predictors of being highly willing to provide first aid to an injured stranger with severe bleeding. The key result is that, among the variables tested, first aid training is one of the strongest predictors of willingness to provide bleeding control assistance, holding other available attitudinal and demographic factors constant.

There are some differences depending on the type of incident. In a mass casualty shooting event, having received first aid training in the past five years, with bleeding control techniques included, is the single strongest positive predictor of likelihood to give aid. In a car crash, willingness to aid a severely bleeding victim is predicted by any first aid training, with the exception of training more than five years ago that did not include bleeding control.

Further, modeling confirms that concerns about giving aid negatively predict the likelihood of doing so. Again there are differences depending on the incident. In a mass shooting, aversion to blood is the single strongest predictor of being less likely to assist – perhaps reflecting the sense that these incidents present a particularly horrifying scene. In a car crash, the strongest negative influence is fear of causing additional harm or of being responsible for a bad outcome.

Interest in taking a bleeding control first aid class, for its part, is related to having had first aid training previously, indicating a pattern in which past training and willingness to undertake future training are intertwined. Interest in training also is positively related to being a woman, being younger, and to being concerned about causing additional injury. The latter suggests a benefit in presenting training as a way to help without doing harm.

Indeed, in a related result, another model shows that support for requiring bleeding control kits in public places also is independently predicted by concern about causing harm to bleeding victims. Again, harm prevention is a strong motivator in training and in support for distribution of bleeding control kits alike.

### *Impacts of Training*

Impacts of training are substantial. Overall, 72 percent of those with first aid training said they’d be very likely to provide bleeding control assistance in the event of a mass shooting, for example, vs. 51 percent of those without training.

More granular differences emerge. Among those who’ve had previous first aid training that included bleeding control, 76 percent said they’d be “very” likely to provide aid. That declines to 65 percent of those who have had training that did not include bleeding control, and 51 percent

of those who have had no training at all. Results on likelihood to aid a car accident victim are quite similar.

	"Very likely" to give aid...	
	To a mass shooting victim	To a car accident victim
Trained w/ bleeding control	76%	77%
Trained, no bleeding control	65	61
Not trained	51	51

Notably, individuals who were trained more than two years ago were substantially less apt than those trained more recently to say their training included bleeding control – 67 percent vs. 84 percent. Regardless of whether course content or recall is the issue, the result indicates the desirability of refresher training in how to stop severe bleeding.

Further, those trained in bleeding control were much more likely to volunteer that they'd apply compression to try to stop bleeding – 74 percent said so, vs. 56 percent of those whose training did not include bleeding control, and also 56 percent of those who lack any training. In addition, intention to use a tourniquet was lower among recent trainees than among those trained longer ago, indicating an area in which course content may need to be updated.

The results suggest that the propensity to be trained relates more broadly to social engagement (e.g., participation or involvement in society through community, religious or political organizations, charitable giving and volunteerism). For example, having had first aid training is far higher among registered voters (53 percent overall) than among those who are not registered (31 percent). Social engagement in general tends to be higher among older adults, and having been trained in first aid peaks, at 57 percent, among 50- to 64-year-olds, vs. a low of 37 percent among those age 18-29. (At the same time, younger adults who've been trained are more likely than others to have been trained recently, a logical result. Recent training also is 6 points more prevalent among parents of minor children than others, 38 to 25 percent.)

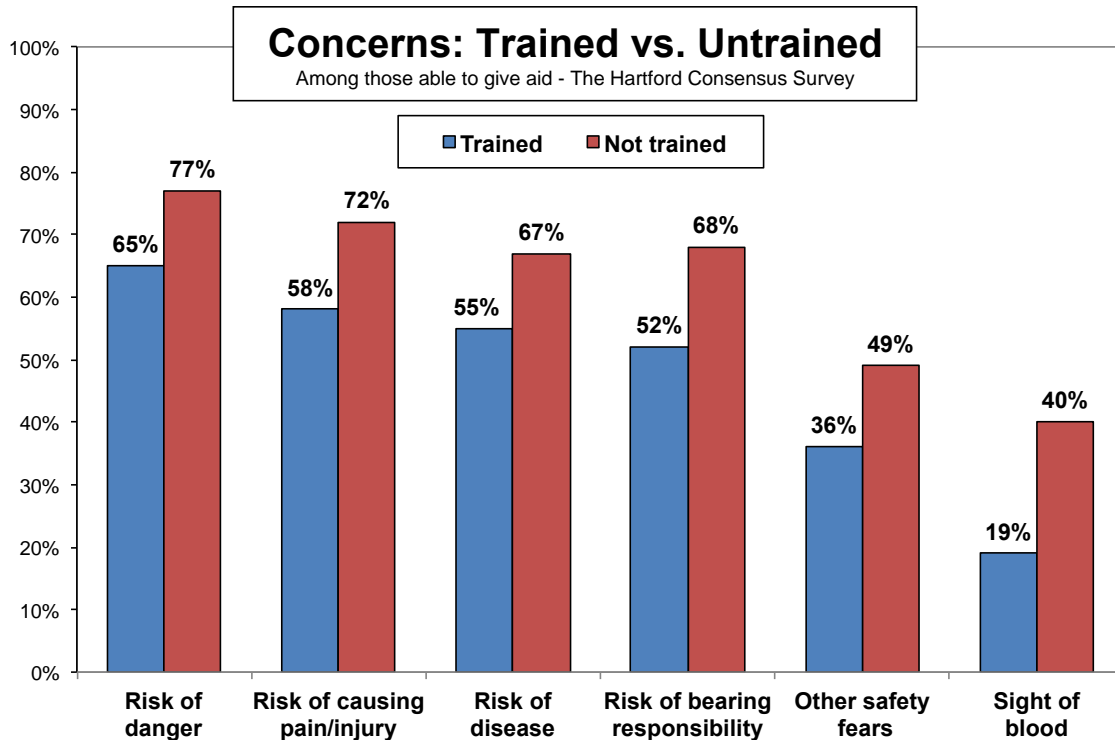
Another difference by age underscores the benefit of increased training among younger adults – they are more likely to be physically able to assist. Very few adults under age 50 report a disability or other physical limitation that would prevent them from giving someone first aid; it's just 1 percent among those age 18-29 and 5 percent among 30- to 49-year-olds. This rises to 14 percent of those 50-64, the most highly trained group, and to nearly one in four of those age 65 and older, 23 percent.

In addition to social engagement, opportunities to obtain training seem a likely factor. College graduates are much more likely than non-graduates to report having been trained, 60 vs. 41 percent, as are whites compared with nonwhites, 53 vs. 31 percent, and Westerners, particularly compared with those in the Northeast, 60 percent vs. 37 percent.

People who are less concerned with possible impediments to giving aid are the most likely to have had training. Some of these differences are striking: Among people who lack any training,



40 percent say the sight of blood is a concern for them; among those with training, it's 19 percent. And trainees are 12 to 16 percentage points less likely to cite other concerns – causing harm, being responsible, being worried about disease or other safety issues.



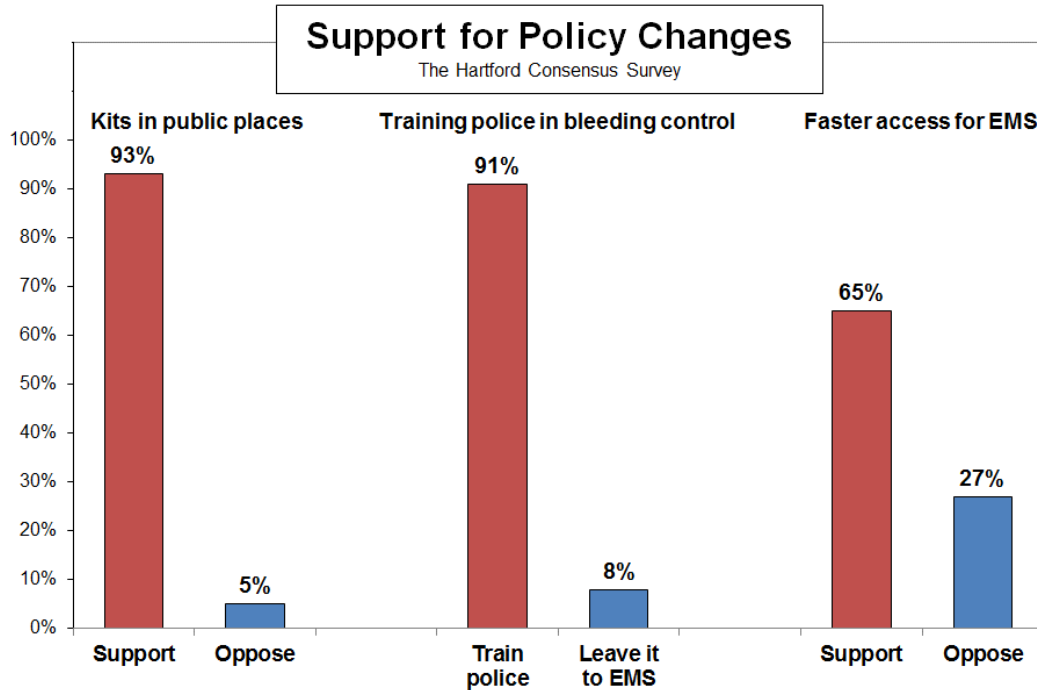
In addition to untrained individuals, concerns about giving aid are most apt to be cited by women and nonwhites. It follows that, in addition to people who have been trained, men are more apt than women to say they'd be likely to provide bleeding control to trauma victims. After a mass shooting situation, for example, 67 percent of men said they'd be very likely to give assistance, vs. 56 percent of women. (Divisions on intent to give aid are less consistent by race; nonwhites are less apt than whites to say they'd be very likely to help after a car accident, but no less apt to be very likely to assist after a mass shooting.)

### *Bleeding Control Kits*

As noted, the distribution of bleeding control kits wins very broad support, and 67 percent said they'd be more likely to render aid if such a kit were available. Interestingly, this sentiment peaks among people who have not had first aid training – 72 percent of the untrained said a kit would make them more likely to take action, compared with 60 percent of those with training.

Positive impacts of providing kits also are higher among less-trained demographic groups, e.g., young adults, nonwhites and those who object to the sight of blood. Bleeding control kits appear to serve as reassurance – for all, but particularly for those who lack training.

While support for these kits is virtually universal, strong support peaks among people who’ve had first aid training in the last two years (at 81 percent, vs. 67 percent among those with no training). And strong support is 11 percentage points higher among parents of minor children vs. others, 79 percent compared with 68 percent.



It should be noted that many more people support “encouraging” the placement of these kits in public places rather than “requiring” it, 62 vs. 38 percent.

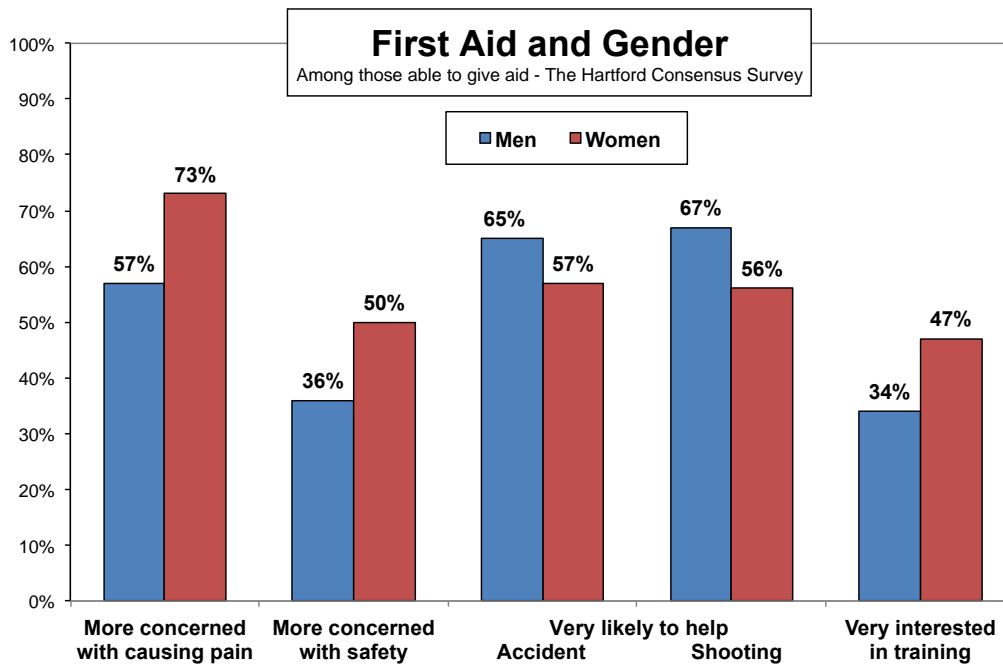
### *Other Groups*

There are some demographic groups that express greater intention to provide aid. In a shooting situation, somewhat fewer city residents said they’d be very likely to assist – 58 percent of those in urban areas, vs. 64 percent in rural areas and 71 percent in suburbs. Urbanites, at the same time, were more apt than suburbanites and slightly more prone than rural residents to say that receiving training would make them more likely to help, 73 to 59 and 65 percent, respectively.

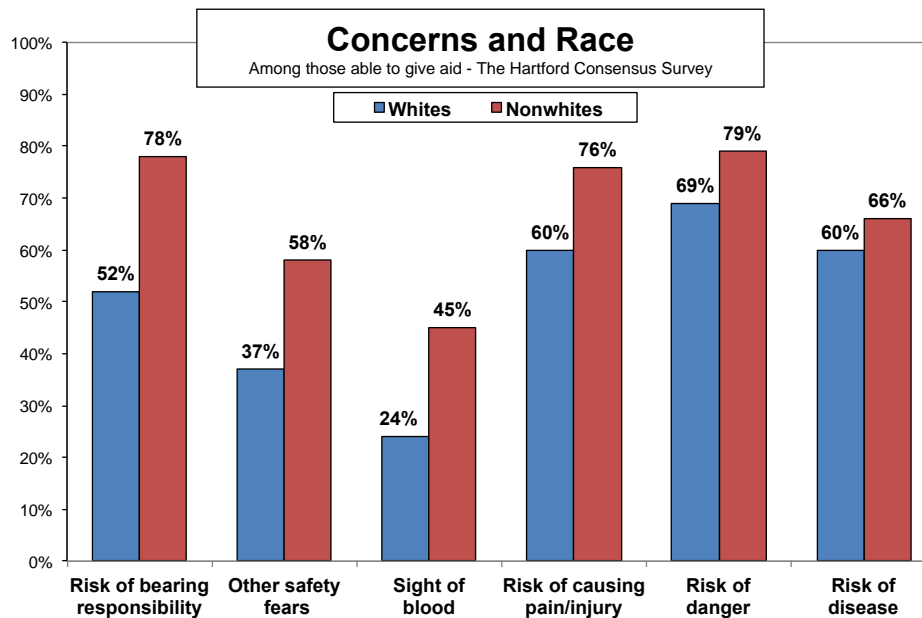
There are differences in many results by gender and race or ethnicity. Women, for example, were 6 to 16 points more likely than men to express major concerns about potential risks of giving aid; in the widest gap, 42 percent of women saw the risk of causing additional pain or injury to an injured person as a major concern, compared with 28 percent of men.

The racial and ethnic gaps are even bigger: Fifty-four percent of nonwhites (that is, blacks, adults of other racial backgrounds and Hispanics regardless of their race) called the risk of causing additional pain or injury a major concern, vs. 26 percent of whites. Additionally, holding other

factors constant, blacks were more likely than whites to say they would help in the mass shooting scenario<sup>4</sup> and to support requiring bleeding control kits in public.



These results suggest that there could be a particular benefit in extending first aid training opportunities to nonwhites, who as noted, are less likely to be trained now; and in designing course content that directly addresses concerns among those who feel them most acutely.



<sup>4</sup> This result is based on a small sample of blacks and the relationship is not strong at the bivariate level, so caution in interpreting this finding is recommended.

*Conclusions*

This survey finds substantial promise in efforts to enhance bleeding control response as a way to increase survival rates after intentional mass casualty events, and indeed in any trauma involving severe bleeding. Even considering possible social desirability effects, vast numbers of Americans express willingness to be trained and to participate in bleeding control for trauma victims. Public support is overwhelming for policies and procedures to make bleeding control training and equipment as widely available as possible.

The study also indicates shortfalls in current training and identifies key factors in willingness to act. Most fundamentally, the results show the strong impact of first aid training and the availability of bleeding control kits on the American public's willingness to provide this potentially lifesaving service.

# Hartford Consensus Survey: Public Engagement on Bleeding Control in Mass Trauma Incidents

## Appendix A: Topline results

1. Have you personally ever taken first aid training from the Red Cross, the military or any other such organization, or not?

	Yes	No	No opinion
11/11/15	47	53	*

1a. (IF HAD TRAINING) How long ago was the last time you received first aid training? Was it less than two years ago, two to five years ago or more than five years ago?

	< 2 yrs	2-5 yrs	> 5 yrs	No opinion
11/11/15	29	19	52	*

1/1a NET:

	----- Had training -----				No	No	
	NET	< 2 yrs	2-5 yrs	> 5 yrs	No op.	training	opinion
11/11/15	47	13	9	24	*	53	*

1b. (IF HAD TRAINING) Did that include training on how to stop severe bleeding, or not?

	Yes	No	No opinion
11/11/15	72	27	1

1/1b NET:

	----- Had training -----					
	NET	Included	Did	No	No	No
		bleeding	not	op.	training	opinion
		training	op.			
11/11/15	47	34	13	1	53	*

2. Do you have any disability or other physical limitation that would prevent you from giving someone first aid, or is that not an issue for you?

	Disability/ limitation	None	No opinion
11/11/15	10	90	*

3. (IF ABLE) Say a member of your family is injured and has severe bleeding from a deep cut on their leg. You're the only other person at home. After calling 911, how likely is it that you yourself would try to stop the bleeding? Is it very likely, somewhat likely, not so likely or not likely at all?

	---- More likely ----			----- Less likely -----			No
	NET	Very	Somewhat	NET	Not so	Not at all	opinion
11/11/15	98	89	9	2	1	1	*

4. (IF ABLE) If you did try, how would you try to stop the bleeding?

	Compression/ pressure	Tourniquet/ tie it off	Elevate	Bandage it/ cover the wound/ wrap the wound	Other	No opinion
11/11/15	62	36	2	6	4	3

## Hartford Consensus Survey: Public Engagement on Bleeding Control in Mass Trauma Incidents

5. (IF ABLE) Now thinking about whether you might try to stop severe bleeding in someone you do not know. How big of a concern to you is each factor I name - a major concern, somewhat of a concern, a minor concern or not a concern at all? First is [ITEM]? How about [NEXT ITEM]?

Full wording:

- a. Any negative reaction you may have to the sight of blood
- b. The risk of getting contaminated with a disease
- c. Any other fear for your personal safety
- d. The risk of causing the injured person pain or further injury
- e. The risk of bearing responsibility for a bad outcome

11/11/15 - Summary table

	-- More concern --			----- Less concern -----			No op.
	NET	Major	Smwt	NET	Minor	Not at all	
a. Sight of blood	30	15	16	69	18	51	*
b. Risk of disease	61	34	27	39	20	19	*
c. Other safety fears	43	21	22	56	23	33	1
d. Greater pain/injury	65	35	30	34	18	15	1
e. Responsibility	61	37	24	39	18	20	1

6. (HALF SAMPLE A) (IF ABLE) Here's a scenario: You're among a group of people in a public place. Someone you don't know has been hit by a car and has severe bleeding from a deep cut on their leg. No emergency responders have arrived. Honestly thinking about your own reaction, how likely would you be to step forward and try to stop the bleeding? Is it very likely, somewhat likely, not so likely or not likely at all?

	---- More likely ----			----- Less likely -----			No opinion
	NET	Very	Somewhat	NET	Not so	Not at all	
11/11/15	92	61	31	8	5	3	*

7. (HALF SAMPLE B) (IF ABLE) Here's a scenario. You're among a group of people in a public place and you hear shooting across the street. The shooting ends after a few minutes. There are injured people lying on the sidewalk. No emergency responders have arrived. Which of these do you think you would be most likely to do: leave the area; stay where you are and see what happens; or try to give first aid to one of the injured people if it seems safe enough to do so?

	Leave the area	Stay and see what happens	Try and give first aid	No opinion
11/11/15	8	16	75	1

8. (HALF SAMPLE B) (IF ABLE) In thinking about providing first aid in a situation like this, how big of a concern to you is the risk of putting yourself in physical danger from additional violence? Is this a major concern, somewhat of a concern, a minor concern or not a concern at all?

	---- More concern ----			----- Less concern -----			No opinion
	NET	Major	Somewhat	NET	Minor	Not at all	
11/11/15	71	36	35	29	18	10	*

9. (HALF SAMPLE B) (IF ABLE) Say the situation seems safe to you and there is an injured person nearby who has severe bleeding from a deep cut on their leg. Honestly thinking about your own reaction, how likely would you be to step forward and try to stop the bleeding? Is it very likely, somewhat likely, not so likely or not likely at all?

## Hartford Consensus Survey: Public Engagement on Bleeding Control in Mass Trauma Incidents

	---- More likely ----			----- Less likely -----			No
	NET	Very	Somewhat	NET	Not so	Not at all	opinion
11/11/15	94	62	32	6	3	3	0

10. (IF ABLE) Say [ITEM]. Would this make you more likely to try to stop someone's bleeding in this situation, or would it make no difference? (IF MORE LIKELY) Is that much more likely, or somewhat? What about if [NEXT ITEM]?

a. There's a bleeding control kit available that includes medical gloves, heavy gauze and a tourniquet

		---- More likely ----			No	No
		NET	Much	Somewhat	difference	opinion
11/11/15	All	67	48	19	33	*
	Accident	66	46	19	34	1
	Shooting	67	49	18	33	*

b. You've taken a recent first aid class that included bleeding control techniques

		---- More likely ----			No	No
		NET	Much	Somewhat	difference	opinion
11/11/15	All	68	51	17	32	1
	Accident	67	49	18	32	1
	Shooting	69	53	15	31	*

c. There's a bleeding control kit available AND you've taken a recent first aid class that included bleeding control techniques

		---- More likely ----			No	No
		NET	Much	Somewhat	difference	opinion
11/11/15	All	71	59	12	28	*
	Accident	72	59	13	28	*
	Shooting	71	59	12	29	*

11. (IF ABLE) Severe bleeding is one of the leading causes of death in injured people. There are new techniques mainly developed by the U.S. military to stop severe bleeding. Say a free two-hour class on bleeding control and other first aid techniques was available at your place of work, church or a local community center. How interested would you be in taking this class - very interested, somewhat interested, not so interested or not interested at all?

	-- More interested --			---- Less interested ----			No
	NET	Very	Somewhat	NET	Not so	Not at all	opinion
11/11/15	82	41	41	18	8	10	*

11a. (IF VERY/SOMEWHAT INTERESTED) If the timing fit your schedule, would you definitely take this class, probably take it or just possibly take it?

	Definitely	Probably	Possibly	No opinion
11/11/15	39	41	20	*

11/11a NET:

	----- More interested -----				Less	No
	NET	Definitely	Probably	Possibly	No op.	interested op.
11/11/15	82	32	33	17	*	18 *

## Hartford Consensus Survey: Public Engagement on Bleeding Control in Mass Trauma Incidents

12. What do you think of the idea of putting bleeding control kits in public places like office buildings and shopping centers, like the CPR kits you may see these days? Is this something you would support or oppose? Do you feel that way strongly or somewhat?

	----- Support -----			----- Oppose -----			No
	NET	Strongly	Somewhat	NET	Somewhat	Strongly	opinion
11/11/15	93	70	23	5	3	2	2

12a. (IF SUPPORT) Do you think bleeding control kits should be required in public places, or encouraged but not required?

	Required	Encouraged	No opinion
11/11/15	38	62	1

12/12a NET:

	----- Support -----				No	
	NET	Required	Encouraged	No op.	Oppose	opinion
11/11/15	93	35	57	1	5	2

13. Do you think police officers should be trained and equipped to apply first aid to treat severe bleeding in injured people as soon as possible, or should this be left to emergency medical responders even if they arrive later?

	Train police	Leave it to EMS	No opinion
11/11/15	91	8	1

14. In mass violence incidents like shootings or bombings, emergency medical responders may be held back while the police make sure the area is completely secure. Would you support or oppose a change in protocols allowing faster access for EMS responders into areas that may not be totally secure, so they can apply bleeding control to injured people?

	Support	Oppose	Only if they're willing (vol.)	No opinion
11/11/15	65	27	2	6

15. If a friend or family member of yours put themselves at some personal risk in order to provide first aid to someone they don't know who had severe bleeding, would you mainly have a positive reaction to their doing this, or mainly a negative reaction?

	Mainly positive	Mainly negative	No opinion
11/11/15	88	9	3



## Appendix B: Survey Methodology

This survey is based on 1,051 interviews of adults age 18 and older conducted Nov. 6-11, 2015, as part of the SSRS Omnibus survey, a national, random-digit-dialed telephone survey conducted by SSRS of Media, Pa. The questions took an average of eight minutes to administer. A total of 528 interviews were conducted via cell phone and 523 via landline, and 38 were conducted in Spanish.

The SSRS Omnibus uses a fully replicated, stratified, single-stage, RDD sample of landline telephone households and randomly generated cell phone numbers designed to represent the adult population of the United States. Phone numbers receive six call attempts over a 10-day period, with a rolling-cross section design that allows sample to remain active for multiple 5-day waves.

Within each landline household, interviewers ask to speak with either the youngest adult male or female who lives in the household and is at home (the gender is randomly pre-selected); if no such person is at home, interviewers ask to speak with the youngest adult of the other gender. (This within-household selection process is a standard randomized procedure that maximizes gender balance and ensures that enough younger respondents are interviewed.) Cell phone interviews are conducted with the adult answering the phone.

The data are weighted via a multistage process, first correcting for unequal probabilities of selection depending on the number of adults in the household and the nature of telephone service in use, then applying a post-stratification adjustment to correct for systematic nonresponse using known demographic parameters. Iterative proportional fitting (“raking”) matches the sample using a step-by-step algorithm to the most recent March Supplement of the U.S. Census Bureau’s Current Population Survey (the March 2015 survey, in this case) by age by gender, education, race/ethnicity, marital status and Census region by gender. Telephone status (cell-phone only, landline only or dual) is included, based on the most recent estimates available from the U.S. Centers for Disease Control’s National Health Interview Survey (July-December 2014). The weighted group proportions tend to be within a percentage point or two of the target proportions; they are not exact since the weights must adjust for many different groups simultaneously.

The survey has a design effect due to weighting of 1.4 and a margin of sampling error of plus or minus 3.5 percentage points for the full sample and 4.0 points for the 921 respondents who indicated the physical ability to provide first aid to an injured person.

For further information, see <http://ssrs.com/research/ssrs-omnibus/>.

## Appendix C: Statistical Analysis

All group differences described in this report have been tested for statistical significance using difference in proportions tests, and only those reaching the 95 percent confidence level ( $p < 0.05$ ) have been described. These statistical tests adjust for the design effect due to weighting, which is 1.4 for this sample.

The section on statistical modeling describes results from a series of regressions, which are statistical analyses that assess the strength of the relationship between predictors and outcome variables (e.g., willingness to provide first aid), holding all other predictor variables constant. Four sets of ordinary least squares regressions were produced, predicting (1) being very likely to try to stop bleeding in the accident scenario (binary), (2) being very likely to try to stop bleeding in the mass shooting scenario (binary), (3) interest/intent in taking a bleeding control class (four-point scale) and (4) requiring bleeding control kits in public places (three-point scale).

The predictor variables included in the regressions were gender, age, education, income, urbanicity, region, race, past first aid training (including its recency and whether it included bleeding control techniques) and concerns related to providing first aid to strangers (sight of blood, health concerns, harm concerns and safety concerns). The regression predicting support for requiring bleeding kits in public places also included political identification. Models were built sequentially, starting first with demographic variables, adding behavioral variables (prior training) and finally adding attitudinal variables (concern items).

The tables below show regression results including unstandardized and standardized coefficients, standard errors and  $p$ -values for each of the four dependent variables. Statistically significant predictors ( $p < .05$ ) are bolded for reference. The adjusted  $r$ -square indicates the amount of variance in the outcome variable explained by the predictors overall.

## Hartford Consensus Survey: Public Engagement on Bleeding Control in Mass Trauma Incidents

Model 1: Accident - Very likely to help

	b	se	Beta	p
<b>Constant</b>	<b>0.91</b>	<b>0.15</b>		<b>0.00</b>
Female	-0.01	0.05	-0.01	0.85
Age	-0.01	0.03	-0.01	0.80
Education	-0.02	0.02	-0.05	0.41
Income	0.00	0.04	-0.01	0.91
Income missing	0.04	0.09	0.03	0.66
Urbanicity	-0.01	0.02	-0.03	0.62
Urban missing	0.07	0.11	0.04	0.53
Northeast	0.07	0.07	0.06	0.32
South	0.06	0.06	0.06	0.32
<b>West</b>	<b>0.15</b>	<b>0.07</b>	<b>0.13</b>	<b>0.03</b>
Black	-0.13	0.08	-0.09	0.08
Hispanic	-0.07	0.07	-0.05	0.34
Other Race	-0.04	0.09	-0.02	0.67
<b>Recent training w/bleeding</b>	<b>0.15</b>	<b>0.07</b>	<b>0.12</b>	<b>0.02</b>
<b>Recent training no bleeding</b>	<b>0.30</b>	<b>0.12</b>	<b>0.12</b>	<b>0.01</b>
<b>Past training w/bleeding</b>	<b>0.20</b>	<b>0.07</b>	<b>0.15</b>	<b>0.01</b>
Past training no bleeding	-0.08	0.09	-0.05	0.34
Concern: blood	-0.01	0.03	-0.02	0.69
Concern: health	-0.04	0.03	-0.07	0.25
<b>Concern: harm</b>	<b>-0.07</b>	<b>0.03</b>	<b>-0.14</b>	<b>0.02</b>
Adjusted R-square	0.09			
N	406			

## Hartford Consensus Survey: Public Engagement on Bleeding Control in Mass Trauma Incidents

Model 2: Shooting - Very likely to help

	b	se	Beta	p
<b>Constant</b>	<b>0.98</b>	<b>0.15</b>		<b>0.00</b>
Female	-0.04	0.05	-0.04	0.34
Age	0.04	0.02	0.08	0.10
Education	-0.04	0.02	-0.09	0.06
Income	0.01	0.03	0.01	0.83
Income Missing	-0.09	0.09	-0.05	0.33
Urbanicity	-0.03	0.02	-0.09	0.07
Urban Missing	-0.22	0.13	-0.08	0.09
<b>Northeast</b>	<b>0.14</b>	<b>0.07</b>	<b>0.11</b>	<b>0.04</b>
<b>South</b>	<b>0.18</b>	<b>0.06</b>	<b>0.18</b>	<b>0.00</b>
West	0.12	0.06	0.10	0.07
<b>Black</b>	<b>0.18</b>	<b>0.07</b>	<b>0.11</b>	<b>0.02</b>
Hispanic	0.10	0.07	0.07	0.17
Other Race	0.07	0.08	0.04	0.38
<b>Recent training w/bleeding</b>	<b>0.29</b>	<b>0.06</b>	<b>0.24</b>	<b>0.00</b>
Recent training no bleeding	0.08	0.09	0.04	0.39
Past training w/bleeding	0.07	0.07	0.05	0.27
<b>Past training no bleeding</b>	<b>0.17</b>	<b>0.08</b>	<b>0.09</b>	<b>0.04</b>
<b>Concern: blood</b>	<b>-0.09</b>	<b>0.02</b>	<b>-0.21</b>	<b>0.00</b>
Concern: health	-0.05	0.03	-0.10	0.06
Concern: harm	-0.01	0.03	-0.01	0.84
Concern: safety	-0.04	0.03	-0.08	0.09
Adjusted R-square	0.16			
N	452			

## Hartford Consensus Survey: Public Engagement on Bleeding Control in Mass Trauma Incidents

Model 3: Interest in taking class

	b	se	Beta	p
<b>Constant</b>	<b>2.31</b>	<b>0.23</b>		<b>0.00</b>
<b>Female</b>	<b>0.31</b>	<b>0.07</b>	<b>0.14</b>	<b>0.00</b>
<b>Age</b>	<b>-0.19</b>	<b>0.04</b>	<b>-0.18</b>	<b>0.00</b>
Education	0.01	0.03	0.01	0.69
Income	-0.01	0.05	-0.01	0.82
Income Missing	-0.11	0.14	-0.03	0.43
Urbanicity	0.02	0.02	0.04	0.32
Urban Missing	0.01	0.18	0.00	0.95
Northeast	0.17	0.11	0.06	0.12
<b>South</b>	<b>0.22</b>	<b>0.09</b>	<b>0.10</b>	<b>0.02</b>
West	0.13	0.10	0.05	0.21
Black	0.14	0.12	0.04	0.24
Hispanic	0.17	0.11	0.06	0.11
Other Race	-0.22	0.13	-0.06	0.08
<b>Recent training w/bleeding</b>	<b>0.57</b>	<b>0.10</b>	<b>0.21</b>	<b>0.00</b>
<b>Recent training no bleeding</b>	<b>0.59</b>	<b>0.16</b>	<b>0.12</b>	<b>0.00</b>
<b>Past training w/bleeding</b>	<b>0.27</b>	<b>0.11</b>	<b>0.09</b>	<b>0.01</b>
Past training no bleeding	0.07	0.13	0.02	0.61
Concern: blood	-0.04	0.03	-0.05	0.20
Concern: health	-0.07	0.04	-0.07	0.09
<b>Concern: harm</b>	<b>0.10</b>	<b>0.04</b>	<b>0.09</b>	<b>0.01</b>
Shooting scenario	0.03	0.07	0.01	0.71
Adjusted R-square	0.11			
N	857			

## Hartford Consensus Survey: Public Engagement on Bleeding Control in Mass Trauma Incidents

Model 4: Support requiring bleeding kits

	b	se	Beta	p
<b>Constant</b>	<b>2.27</b>	<b>0.12</b>		<b>0.00</b>
Female	0.02	0.04	0.02	0.57
Age	0.00	0.02	-0.01	0.88
<b>Education</b>	<b>-0.05</b>	<b>0.02</b>	<b>-0.11</b>	<b>0.00</b>
Income	-0.04	0.03	-0.07	0.14
Income Missing	-0.05	0.07	-0.03	0.45
Urbanicity	0.01	0.01	0.04	0.33
Urban Missing	-0.05	0.10	-0.02	0.59
Northeast	0.03	0.06	0.02	0.66
South	0.04	0.05	0.04	0.36
West	0.06	0.05	0.05	0.29
<b>Black</b>	<b>0.20</b>	<b>0.06</b>	<b>0.12</b>	<b>0.00</b>
Hispanic	0.07	0.06	0.05	0.22
Other Race	0.05	0.07	0.02	0.49
Democrat	0.02	0.04	0.02	0.62
<b>Republican</b>	<b>-0.13</b>	<b>0.05</b>	<b>-0.10</b>	<b>0.01</b>
Recent training w/bleeding	0.05	0.05	0.04	0.31
<b>Recent training no bleeding</b>	<b>0.21</b>	<b>0.08</b>	<b>0.09</b>	<b>0.01</b>
<b>Past training w/bleeding</b>	<b>-0.12</b>	<b>0.06</b>	<b>-0.08</b>	<b>0.04</b>
Past training no bleeding	-0.05	0.07	-0.03	0.45
Concern: blood	-0.01	0.02	-0.03	0.46
Concern: health	-0.03	0.02	-0.06	0.16
<b>Concern: harm</b>	<b>0.08</b>	<b>0.02</b>	<b>0.15</b>	<b>0.00</b>
Shooting scenario	0.04	0.04	0.04	0.27
Adjusted R-square	0.09			
N	815			

----- Concern correlations, Spearman's rho -----

	Blood	Disease	Other safety	Pain	Responsi- bility	Danger
Blood	1	.33**	.30**	.25**	.27**	.17**
Disease	.33**	1	.54**	.29**	.36**	.34**
Other safety	.30**	.54**	1	.42**	.41**	.33**
Pain	.25**	.29**	.42**	1	.60**	.24**
Resp.	.27**	.36**	.41**	.60**	1	.29**
Danger	.17**	.34**	.33**	.24**	.29**	1

\*\*p<0.001