APPENDIX 9

Sample Size Calculations – Number of cases needed

Change in Exposure (Behavior) in CASE Group								Frequency of Exposure (Behavior) in CONTROL Group	Change in Exposure (Behavior) in CASE Group							
-11%	**-10%**	**-9%**	**-8%**	**-7%**	**-6%**	**-5%**	**-4%**		**4%**	**5%**	**6%**	**7%**	**8%**	**9%**	**10%**	**11%**
						474	770	**10%**		725	525					
					492	725		**15%**			675	510				
					647	945		**20%**			804	603				
				568	780			**25%**				680	529			
			495	651				**30%**				741	574			
			548	718				**35%**				786	607			
			589	770				**40%**				815	628			
			617	805				**45%**				827	637			
			633	824				**50%**				824	633			
			637	827				**55%**				805	617			
			628	815				**60%**				770	589			
			607	786				**65%**				718	548			
			574	741				**70%**				651	495			
			529	680				**75%**			780	568				
				603	804			**80%**			647	468				
				408	675			**85%**		725	492					
					525	725		**90%**	770	474						

fewer than 650 cases needed, i.e., proposed study (650 cases and 650 controls) would be able to detect a difference

more than 650 cases needed, i.e., proposed study would not have enough power to detect a difference

Alpha = 5%; Beta = 20% (power=80%)
Assuming 1:1 case to control ratio

For example: if 25% of the control (not injured) immediately leaves the residence, but only 18% of the case (injured) group does, we would need 568 individuals in both the case and control group to reliably detect a statistical difference. Our study sample size for each group (650) meets these criteria. However, if the difference between the groups is smaller (25% versus 17%), we would need greater than 780 individuals in each group. In that scenario, we would lack the precision and statistical power to provide a reliable answer about whether or not the behaviors in these two groups (cases and controls) are significantly different.