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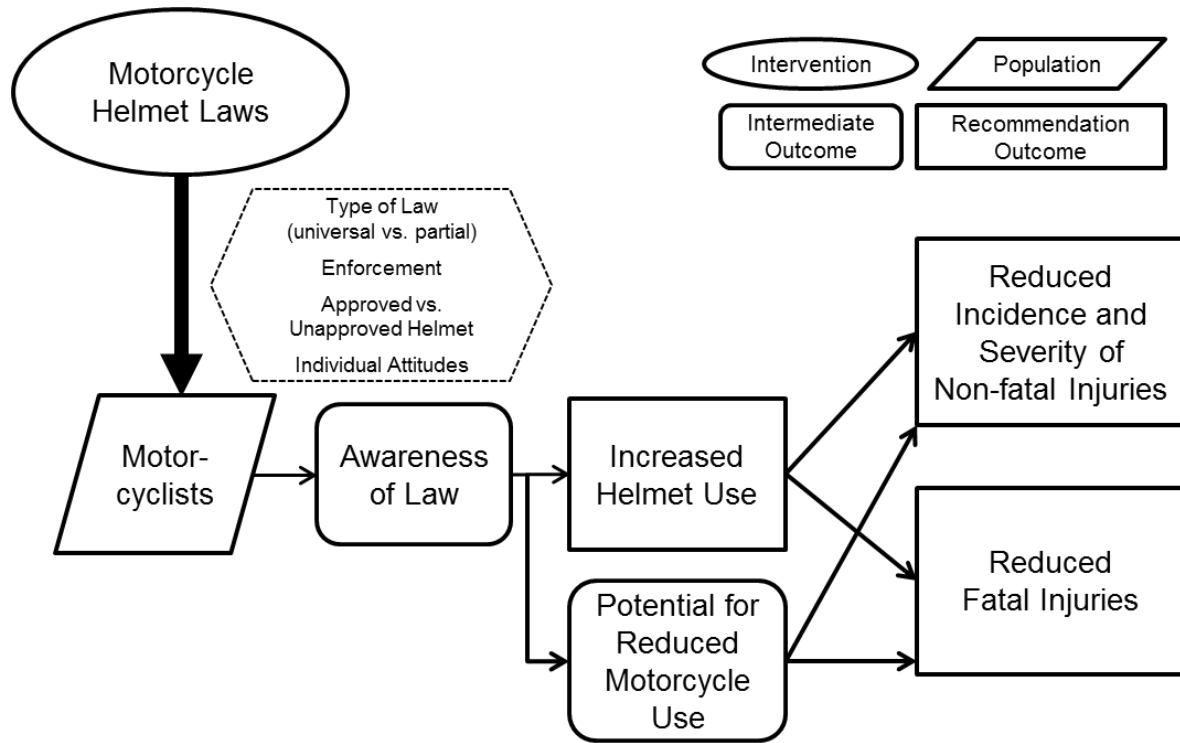
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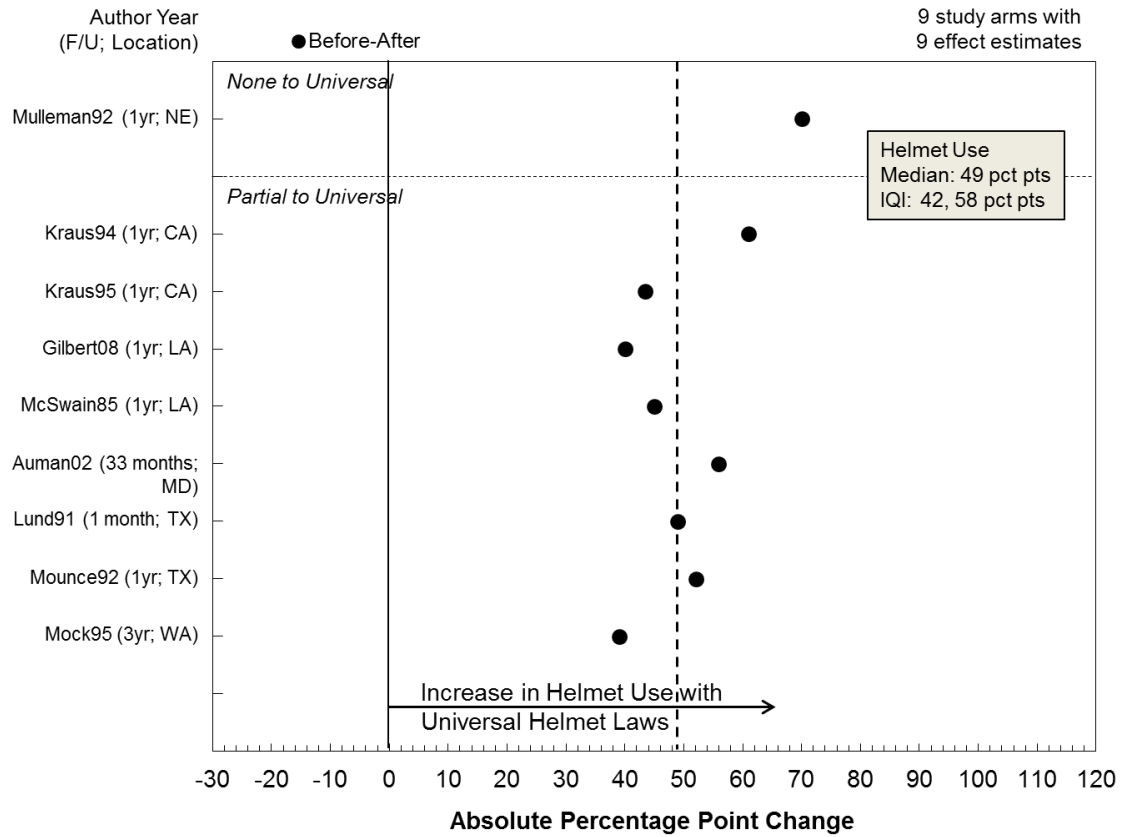
(UHL, universal helmet law; PHL, partial helmet law)

Appendix Figure 1. Analytic framework.



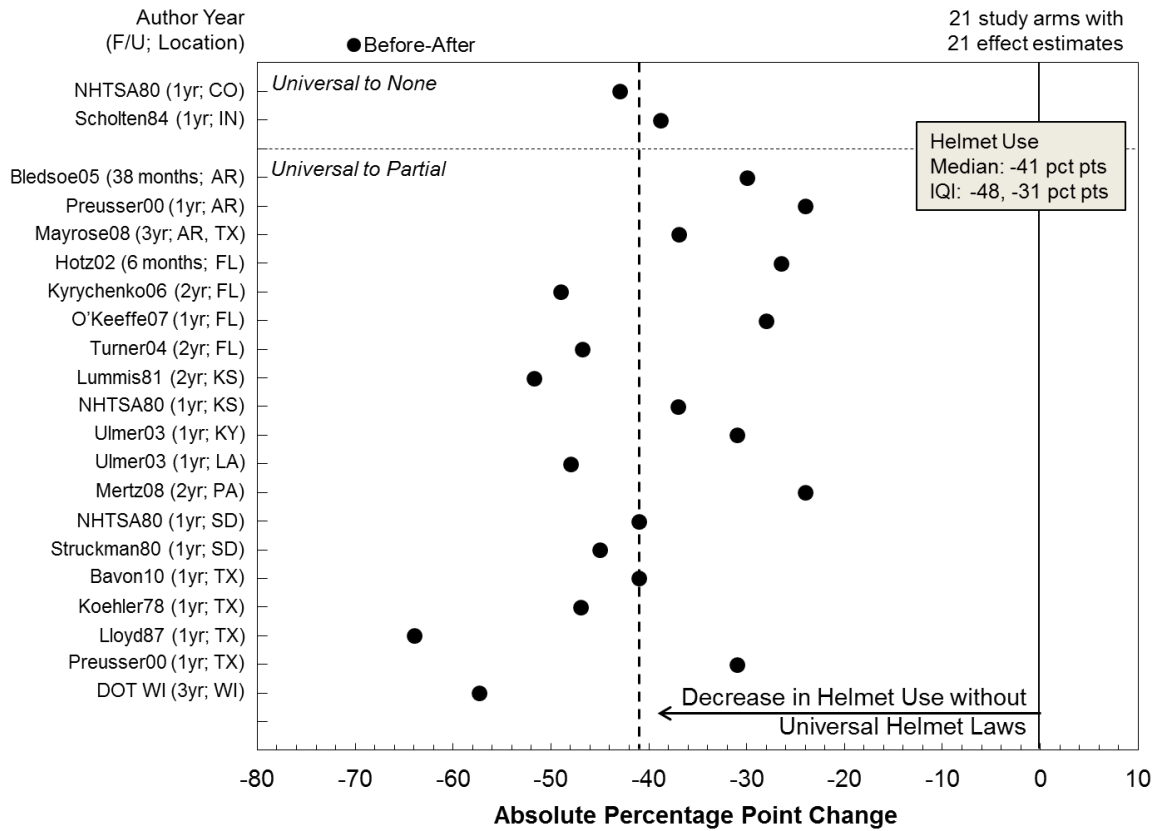
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Appendix Figure 2. Impact of implementing UHLs on helmet use.



IQI: Interquartile interval

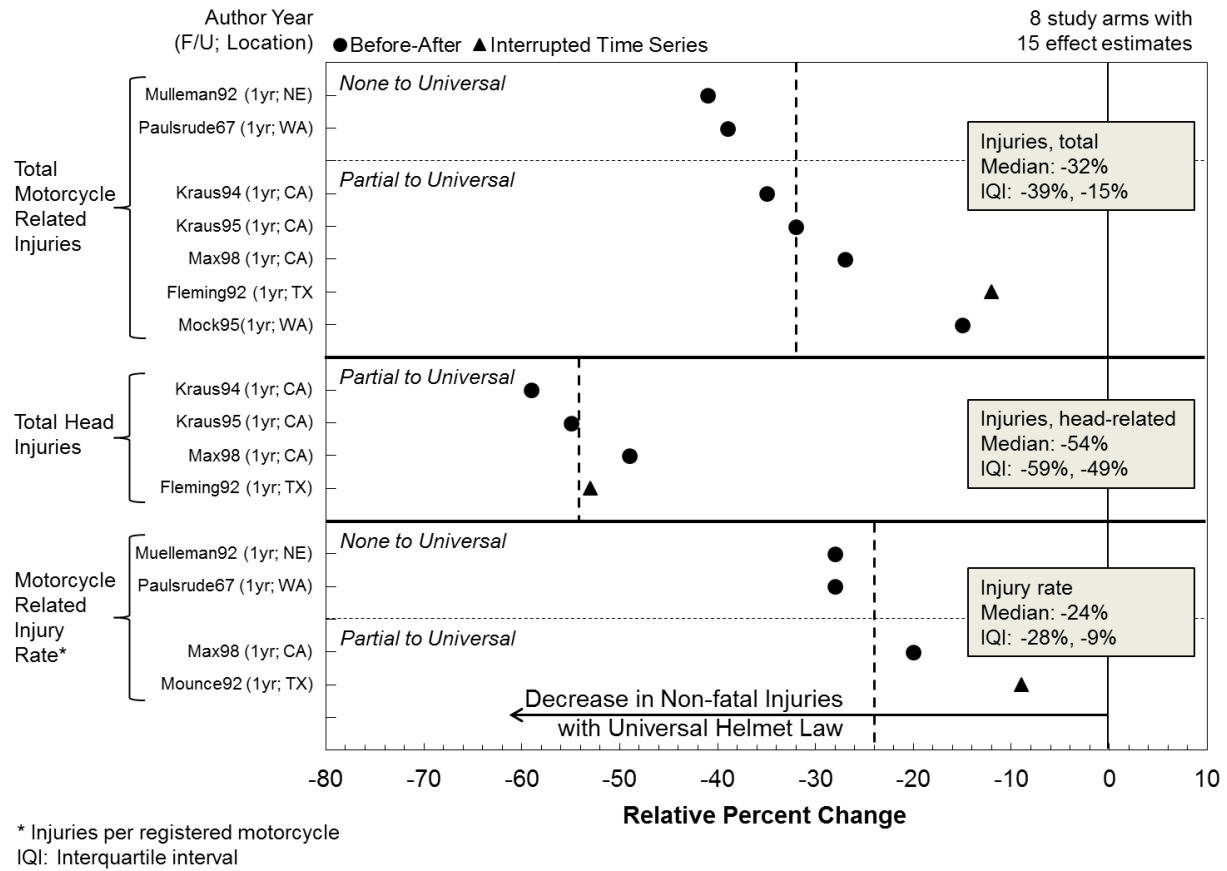
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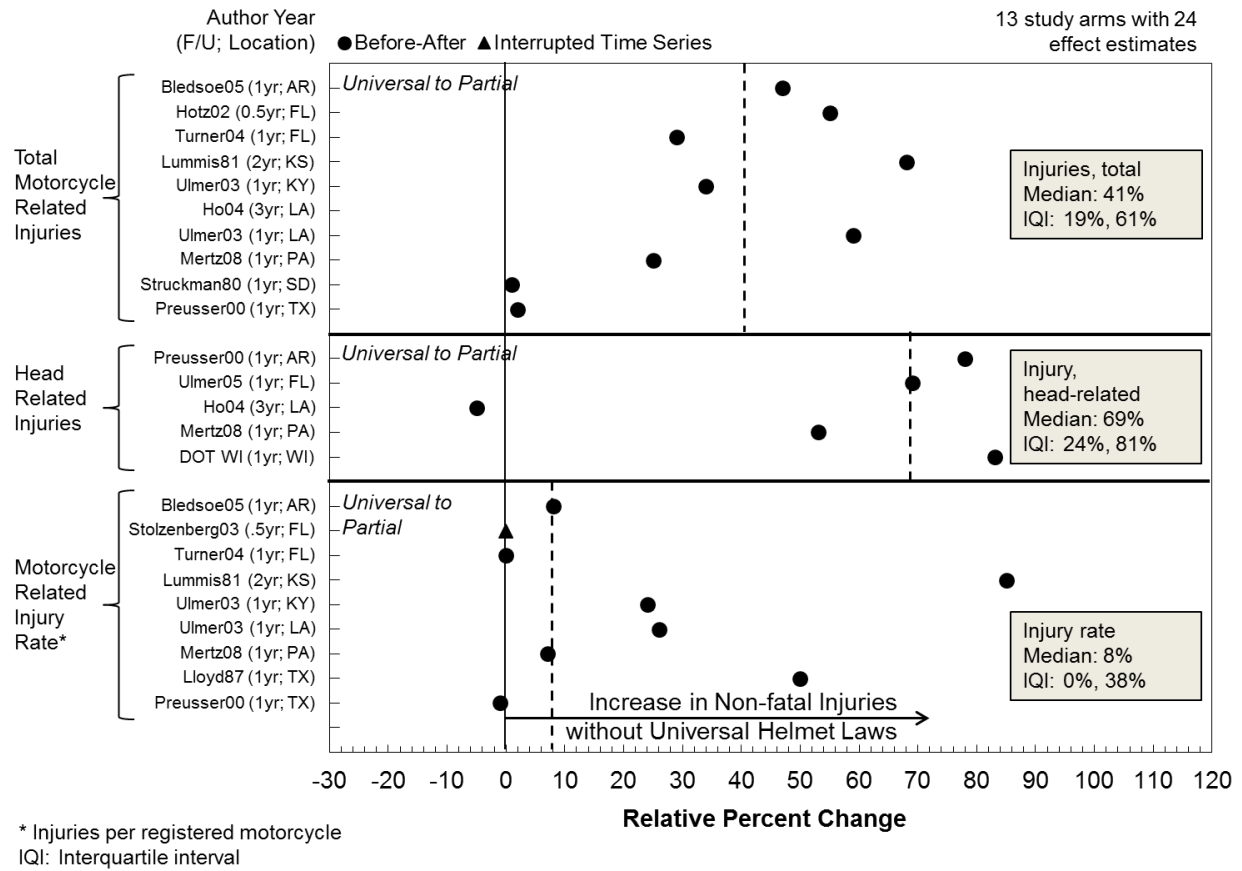
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Appendix Figure 4. Impact of implementing UHLs on non-fatal injuries.



Appendix Figure 5. Impact of repealing UHLs on non-fatal injuries.



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Appendix Table 1. UHLs Compared to PHLs: Impact on Helmet Use and Fatal and Non-fatal Injuries

Outcome	Law implementing ^a		Law repealing ^b		Law comparison ^c	
	No. of study arms	Median (IQI/Range) ^d	No. of study arms	Median (IQI/Range) ^d	No. of study arms	Median (IQI/Range) ^d
Helmet use, absolute change	8 ¹⁻⁸	47 pct pts (41 to 55 pct pts)	19 ⁹⁻²³	-41 pct pts (-48 to -30 pct pts)	4 ^{17,24-26}	53 pct pts (48 to 73 pct pts)
Fatalities, relative change (total, head-related, rates)						
Total	6 ^{1,2,4,6,20,27}	-31% (-34% to -21%)	16 ^{10,11,13,16,18-23,28-30}	46% (28% to 70%)	—	—
Head-related	4 ^{1,4,6,27}	-48% (-56% to -43%)	2 ^{11,18}	6% and 65%	—	—
Fatalities per registered motorcycle	4 ^{1,4,8,20}	-20% (-26% to -12%)	17 ^{10,11,15-20,22,23,28-32}	21% (7% to 38%)	—	—
Fatalities per vehicle mile travelled	—	—	3 ^{9,22,30}	23% (14% to 38%)	—	—
Fatalities per crash	1 ²	-12%	10 ^{10,11,13,14,16,18,21,22,28,29}	22% (-4% to 36%)	—	—
Fatality rate, head, per registered motorcycle	—	—	2 ^{11,18}	-5% and 25%	—	—
Fatality rate, head, per crash	—	—	4 ^{11,18,24}	48% (-12% to 367%)	—	—
Injuries, relative change (total, head-related, rates)						
Total	5 ^{3,4,7,27,33}	-27% (-34% to -14%)	10 ^{10,12,16,18,20-23,28}	41% (19% to 61%)	—	—
Head-related	4 ^{3,4,27,33}	-54% (-49% to -59%)	4 ^{11,18,20,34}	69% (24% to 81%)	2 ^{35,36}	-27% and -12%
Injuries per registered motorcycle	2 ^{8,33}	-20% and -9%	9 ^{10,15,16,18,20,22,23,32}	8% (0% to 38%)	—	—
Injuries per vehicle mile travelled	—	—	1 ²²	-8%	—	—

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Injuries per crash	—	—	7 ^{10,12,16,18,21,22,34}	-1% (-8% to 35%)	—	—
Head-related injuries per registered motorcycle	1 ³³	-44%	3 ^{18,20,34}	31% (29% to 39%)	—	—
Head-related injuries per crash	—	—	3 ^{18,24}	37% (28% to 154%)	—	—

^aUHLs replaced PHLs.

^bPHLs replaced UHLs.

^cUHLs versus PHLs.

^dIQIs calculated with ≥ 5 studies; otherwise ranges reported.

pct pts, percentage points; IQI, interquartile interval; UHL, universal helmet law; PHL, partial helmet law

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