

# Direct and indirect effects of public policies and interventions

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# Summary

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All actions have consequences. Some consequences are intentional while others are unintentional, and some have beneficial consequences for individuals or society whereas do not. The same holds for public policies and social interventions: although the intention is to improve society, sometimes these actions have unintended consequences as well. The intended effects are called the direct effects, while other outcomes are called indirect effects. Not only direct effects, but also indirect effects of public policies and interventions should be carefully monitored and evaluated, even when previous research or common sense suggest that direct or indirect effects are desirable. That is the main take-away from this doctoral dissertation, which evaluates the direct effects and specific indirect effects of a quasi field experiment that encourages children to become more physically active in their everyday life (i.e., the *Active Living Program*), and a public policy that incentivizes people to become an organ donor after death (i.e., *opt-out consent for organ donation*).

It is important to emphasize that both policies are successful in reaching most of their direct effects: the Active Living Program successfully increases children's time spent on physical activity during school time, and opt-out consent for organ donation is related to significantly more kidney, liver and heart transplantations from deceased donors. However, both policies also appear to have undesirable indirect effects.

The Active Living Program unintentionally decreases school performance, particularly among the worst-performing students and among boys (Chapter 1). Moreover, the Program significantly increases the prevalence of Attention-Deficit/Hyperactivity Disorder (ADHD)-like symptoms in boys (Chapter 2). The results of these two chapters highlight that policymakers and researchers need to be very careful generalizing previously found desirable (side) effects to different contexts and policy designs: the studies in Chapters 1 and 2 are among the first that identify the causal indirect effects of encouraging physical activity in everyday life among children.

Chapter 3 analyzes whether an intended indirect policy effect is met, by studying whether organ-patient mortality rates are indeed lower in opt-out consent systems for organ donation. This is an indirect effect, because opt-out systems cannot literally save lives: mortality rates can only be affected through other channels, such as deceased-donor transplantation rates. However, organ-patient mortality rates appear to barely differ between consent systems. Moreover, for kidneys and livers, one more deceased-donor transplantation does not imply that one organ-patient life is saved. This indicates the existence of factors related to opt-out consent systems that are positively related to kidney and liver-patient mortality. The chapter demonstrates that even seemingly obvious relationships merit explicit evaluation.