Supplemental Materials for
“Crafting normative messages to promote childhood vaccine advocacy”
By Hurlstone et al. (2018)

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Intervention Components By Condition

No Norm / No Message

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What are measles, mumps, and rubella?

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**Mumps** causes fever, headache, and swollen glands. Complications can include deafness, meningitis (infection of the brain and spinal cord covering), painful swelling of the testicles or ovaries, and, rarely, death.

**Rubella (German measles)** causes rash, mild fever, and arthritis (mostly in women). If a woman gets rubella while she is pregnant, she could have a miscarriage or her baby could be born with serious birth defects.

About the MMR vaccine

*Age of vaccination*

- 12 to 15 months – first dose of MMR vaccine.
- 4 to 6 years – second dose of MMR vaccine.¹

*How effective is the vaccine?*

The MMR vaccine is an effective measure in preventing disease transmission. After two doses of the MMR vaccine,

- 97% of recipients will be protected against measles and rubella,
- 88% of recipients will be protected against mumps.²

Rates of *measles, mumps and rubella* have declined in the United States due to the introduction of the MMR vaccine.¹

*Cost*

Health insurance covers the cost of the MMR vaccine for most children.

Otherwise, the Vaccine for Children (VFC) program³ provides the MMR vaccine for free to eligible children (although there may be an administrative fee of up to $15).

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*Vaccination protects the community*

If enough of the population are vaccinated, herd immunity can protect those who are unable to be vaccinated.
**Herd immunity** works by creating an *immunity wall* that makes it unlikely for non-immune individuals to come in contact with a contagious disease.

1. Sick and **contagious** person comes in contact with others

2. Vaccinated individuals **prevent** virus spreading further.

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**What are other parents doing?**

*92 out of 100* American parents immunise their children with the MMR vaccine.
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If enough of the population are vaccinated, **herd immunity** can protect those who are unable to be vaccinated.
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**What do other parents think?**

In a recent nationwide survey, American parents expressed the view that vaccinations are important, and that vaccinating children with the MMR vaccine is the responsible thing to do.⁴

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Questionnaires

Perceived Descriptive Norm

Please estimate how many U.S. parents (out of 100) you think vaccinate their children with the measles, mumps and rubella (MMR) vaccine.

Pre-Vaccination Attitude

Using a scale ranging strongly disagree (1) to strongly agree (7), please indicate how much you agree or disagree with the following statements.

1. Getting vaccines is a good way to protect my child(ren) from disease.
2. Generally I do what my doctor recommends about vaccines for my children.
3. I am concerned about serious adverse effects of vaccines. *
4. New vaccines are recommended only if they are as safe as older vaccines.
5. Parents should have the right to refuse vaccines that are required for school for any reason. *
6. My children do not need vaccines for diseases that are not common anymore. *
7. Pharmaceutical companies conceal information about the safety of vaccines. *
8. Nowadays children receive too many vaccines. *

Note: Negatively keyed statements denoted by * were reverse coded so that larger pre-manipulation attitude scores reflected greater pro-vaccination attitudes.

Moral Conviction

Using a scale ranging not at all (0) to very much (10), To what extent are your general attitudes toward vaccination a reflection of your core moral beliefs and convictions?

Post-Manipulation Attitude (Vaccine Confidence Scale; Rossen, Hurlstone, Dunlop, & Lawrence, 2018)

Using a scale ranging strongly disagree (1) to strongly agree (7), please indicate how much you agree or disagree with the following statements.

1. Vaccines have not been adequately tested for safety. *
2. People should be able to decide whether or not to vaccinate their children. *
3. Vaccines overwhelm a child's undeveloped immune system. *
4. Getting vaccinated helps protect those who are unable to be vaccinated against disease.
5. Vaccines can cause or worsen allergies. *
6. Improved living standards, not vaccination, have reduced infectious diseases. *
7. It is important that people are able to make their own decisions about vaccination. *
8. Pharmaceutical companies purposefully conceal information about the safety of vaccines. *
9. Infectious diseases are virtually eliminated so vaccination is not needed. *
10. It should be compulsory for all children to be vaccinated.
11. Vaccines cause the diseases they are supposed to prevent. *
12. The government conceals information about the safety of vaccines. *
13. Homeopathic medicines are an effective alternative to conventional vaccines. *
14. Vaccines introduce unnatural toxins into the body. *
15. The more people who get vaccinated the greater the protection against disease.
16. Building immunity by naturally fighting off a disease is better protection than getting a vaccine. *
17. It is okay for people to be exempt from vaccination for moral or personal reasons. *
18. Pharmaceutical companies create ineffective vaccines in order to make high profit. *
19. Vaccinations do nothing to protect people who are not vaccinated. *
20. Infants immune systems are not developed enough to cope with vaccinations. *
21. Infants are too young to be vaccinated. *
22. Doctors should not recommend vaccination to all parents with healthy children. *

Note: Negatively keyed statements denoted by * were reverse coded so that larger post-manipulation attitude scores reflected greater pro-vaccination attitudes.

**Behavioural Intention**

Using a scale ranging from *not at all likely* (0) to *extremely likely* (10), please indicate the likelihood that you would vaccinate a future child with at least one dose of the MMR vaccine.
Figures

Marginal Means—Normative Message

Figure S1.
Post-manipulation attitude (A) and behavioural intention (B) as a function of normative message condition. Error bars represent 95% confidence intervals.