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Spreading Consensus: Correcting Misperceptions about the Views of the Medical Community Has Lasting Impacts on Covid-19 Vaccine Take-up

Abstract

Identifying sources of vaccine hesitancy is one of the central challenges in fighting the Covid- 19 pandemic. In this study, we focus on the role of public misperceptions of doctors' views. Motivated by widespread concern that media reports create uncertainty in how people perceive expert opinions, even when broad consensus exists, we elicited trust in Covid-19 vaccines held by 9,650 doctors in the Czech Republic. We found evidence of a strong consensus: 90% of doctors trust the vaccines. Next, we conducted a nationally representative survey (N=2,101), and document systemic misperceptions of doctors' views: more than 90% of respondents underestimate doctors' trust; the most common belief is that only 50% of doctors trust the vaccines. Finally, we integrate randomized provision of information about the true views held by doctors into a longitudinal data collection, and regularly measure its impacts on vaccine take-up during a nine-month period when the vaccines were gradually rolled out. We find that the treatment recalibrates beliefs and leads to a lasting and stable increase in vaccine demand: individuals who receive the information are 4 percentage points more likely to be vaccinated nine months after the intervention. This paper illuminates how the engagement of professional medical associations, with their unparalleled capacity to elicit individual views of doctors on a large scale, can help to create a cheap, scalable intervention that corrects misperceptions and has lasting impacts on behavior.

JEL-Codes: C930, D830, I120.

Keywords: Covid-19 vaccine, beliefs, misperceptions, expert consensus, information.

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1. Introduction

People's reluctance to take up vaccines represents a significant challenge to containing the spread of deadly infectious diseases (Greenwood 2014; Banerjee et al. 2021). Covid-19 is a salient example of a disease with profound economic, social, and health impacts which can be controlled by large-scale vaccination if enough people choose to be vaccinated. Nevertheless, a large percentage of people are hesitant to get a vaccine, preventing many countries from reaching the threshold necessary to achieve herd immunity (Lazarus et al. 2021; McDermott 2021). Consequently, rigorous evidence on scalable approaches that can help to overcome people's hesitancy to take a Covid-19 vaccine is a global policy priority(Jarrett et al. 2015; Milkman et al. 2021; Dai et al. 2021). Existing research has made important progress in documenting the roles of providing financial incentives (Serra-Garcia and Szech 2021; Klüver et al. 2021), reminders (Milkman et al. 2021; Dai et al. 2021), information about the efficacy of the vaccines (Alsan and Eichmeyer 2021; Ashworth et al. 2021), the role of misinformation (Loomba et al. 2021) on the public's intentions to get vaccinated, and more recently, also on their actual decisions to get a vaccine (Dai et al. 2021) shortly after an intervention. However, little is known about whether cheap, scalable strategies with the potential to cause lasting increases in people's vaccination demand and take-up exist. A focus on the persistence of the impacts of interventions is especially important for vaccines like those against Covid-19, which are often distributed in phases to different demographic groups due to capacity constraints, and multiple doses spaced over time are required to avoid declines in protection.

In many surveys across the globe, people report that they strongly trust the views of doctors (Blendon, Benson, and Hero 2014). This makes it crucial to understand how people perceive doctors' views about the Covid-19 vaccine. In this paper, we pursue the hypothesis that reluctance to adopt the vaccine originates, in part, in misperceptions about the distribution of aggregate views of the medical community: many people may fail to recognize that there is a broad consensus in favor of the vaccine among doctors. Further, we argue and show that professional associations can serve as aggregators of individual views in a medical community, by helping to implement surveys eliciting doctors' views on a large scale. Disseminating information of a broad consensus, when one exists, can lead to people updating their perceptions of doctors' views and, in turn, may induce lasting changes in vaccination demand and take-up.

Our focus on public misperceptions of doctors' views is motivated by a widespread concern that media coverage can create uncertainty and polarization in how people perceive expert views, even when a broad consensus actually exists. In terms of traditional media, a desire to appear neutral often motivates journalists to provide a "balanced" view by giving roughly equal time to both sides of an argument (Shapiro 2016; Boykoff and Boykoff 2004), creating an impression of controversy and uncertainty (Dixon and Clarke 2013). Such "falsely-balanced" reporting has been shown to be a characteristic element of policy debates ranging from climate change (Shapiro 2016; Boykoff and Boykoff 2004) to health issues, including links between tobacco and cancer, and potential side effects of vaccines (Dixon and Clarke 2013; S. L. Van Der Linden, Clarke, and Maibach 2015). In the context of the Covid-19 vaccines, casual observation suggests that media outlets often feature expert opinions highlighting the efficacy of approved Covid-19 vaccines together with skeptical experts who voice concerns about rapid vaccine development and untested side effects. The media usually do not specify which claims are supported by the wider medical community, leading the World Health Organization to warn media outlets against engaging in false-balance reporting (Wolrd Health Organization 2021). Further, polarization of beliefs can arise due to echo-chambers -- people choosing to be exposed to expert opinions or opinion programs that fuel their fears of the vaccine, or, alternatively, to those who strongly approve of it (Haidt 2016; Jennings et al. 2021; Bursztyn et al. 2021).

We study these issues in the Czech Republic, which is a suitable setting, given the observed level of vaccine hesitancy among a large share of its population, similar to the situation in many other countries. At the time of data collection, the vaccine acceptance rate in the Czech Republic was around 65%, compared to 55-90% in other countries globally. At the same time, the Czech Republic ranks close to the median level of trust and satisfaction with medical doctors, based on a comparison of 29 countries (Blendon, Benson, and Hero 2014). We provide more background in the Supplementary Information.

We start by documenting and quantifying public misperceptions about doctors' views on the Covid-19 vaccines. To do so, we partnered with the Czech Medical Chamber, to aggregate the views of a uniquely wide spectrum of the medical community. Shortly before the Covid-19 vaccine roll-out began in January 2021, we elicited responses via a short online survey from almost 10,000 doctors on their trust in the vaccines, their willingness to get vaccinated themselves, and their willingness to recommend the vaccine to their patients. We find strong evidence of consensus: 90% intend to get vaccinated themselves, 89% trust the approved vaccines, and 95% would recommend vaccination to their patients. The responses are broadly similar across gender, age, locality, and seniority. Next, in order to quantify the extent of public misperceptions of the views held by the medical community, we conducted a survey with a nationally representative online sample of the adult population (N=2,101). The participants were asked to estimate what percentage of doctors trust the vaccines and want to get vaccinated themselves. We find evidence of systemic and widespread misperceptions: more than 90% of people underestimate doctors' trust in the vaccines and their vaccination intentions, with most people believing that only 50% of doctors trust the vaccines and intend to be vaccinated.

These findings set the stage for our main experiment, in which we test whether randomized provision of information about the actual views of doctors can recalibrate public beliefs and, more importantly, cause a lasting increase in vaccination take-up. The experimental design aims to make progress on two important empirical challenges that are common in experiments on the determinants of demand for Covid-19 vaccines. First, since an intention–behavior gap has been documented in the context of flu vaccines and other health behaviors (Bronchetti, Huffman, and Magenheim 2015), measuring both vaccination intentions and actual vaccination take-up allows us to test whether treatment effects on vaccination intentions translate into behavioral changes of a similar magnitude. The initial set of studies on Covid-19 vaccination, typically implemented before the vaccines became available, only tested impacts on intentions (Loomba et al. 2021; Serra-Garcia and Szech 2021; Ashworth et al. 2021), though a recent exception exists(Dai et al. 2021).

Second, most experiments designed to correct misperceptions about the views of others, and other information provision experiments in various domains, including migration, health, and political behavior, document treatment effects to be substantially smaller when measured with a delay (Bursztyn and Young 2021; Haaland, Roth, and Wohlfart 2021). In theory, the worry is that individual perceptions about doctors' views might shift significantly between the time when the treatment takes place and when people decide whether to actually get vaccinated, for reasons including regression of perceptions to the mean, biased recall, or motivated memory (Bordalo, Gennaioli, and Shleifer 2020). On the other hand, researchers have suggested that providing facts about a widely-shared consensus of trustworthy experts might be resilient to these forces (S. L. Van Der Linden, Clarke, and Maibach 2015), since the treatment may reduce incentives to seek new information, and condenses complex information into a simple fact ("90% of doctors trust the approved vaccines"), which is easy to remember. Understanding whether providing information about medical consensus has temporary or lasting impacts on vaccination demand is informative for policy, in terms of whether a one-off information campaign is sufficient, or whether the timing of messages needs to be tailored for different groups of people who become eligible for a vaccine at different points in time, and also whether such an information campaign needs to be repeated in cases of multiple-dose vaccines.

To address these issues, our experiment is integrated into longitudinal data collection with low attrition rates. The treatment was implemented in March 2021. We use data from twelve consecutive survey waves collected from March to November 2021, covering the early period when the vaccine was scarce, later when it gradually became available to more demographic groups, and finally for several months when it was easily available to all adults. This is reflected in the vaccination rates, which increased in our sample from 9% in March to 20% in May and to nearly 70% in July. Then, it grew slowly to 77% at end of November. This longitudinal, data-collection intensive approach allows us to estimate (i) whether disseminating information on the consensus view of the medical community has immediate impacts on people's beliefs and their intentions to get the vaccination shortly after the intervention, (ii) whether the effects translate into actually getting vaccinated, even though most of the participants became eligible for the vaccine only many weeks after the intervention, (iii) whether the effects on vaccine take-up are persistent or whether the vaccination rate of untreated individuals eventually catches up, perhaps due to ongoing governmental campaigns, stricter restrictions for non-vaccinated individuals, or greater potential life disruptions during severe epidemiological periods.

2. Evidence about consensus of the medical community

We conducted a supplementary survey to gather doctors' views on Covid-19 vaccines in February 2021. The survey was implemented in partnership with the Czech Medical Chamber (CMC), to maximize coverage of the medical community. The CMC contact list includes the whole population of doctors in the country, because membership is compulsory. All doctors who communicate with CMC electronically (70%) were asked to participate in a short survey, using the Qualtrics platform. 9,650 doctors (24% of those contacted) answered the survey. The doctors in our sample work in all regions of the country, are on average 52 years old, 64% are female, and 62% have more than 20 years of experience. The summary statistics are presented in Supplementary Table 1, which also documents that our sample of doctors is quite similar, in terms of age, gender, seniority and location, to the overall population of medical doctors in the Czech Republic.

Figure 1 shows the distribution of doctors' responses. A clear picture arises, suggesting that a broad consensus on Covid-19 vaccines exists in the medical community: 89% trust the vaccine (9% do not know and 2% do not trust it), 90% intend to get vaccinated (6% do not know and 4% do not plan to get vaccinated) and 95% plan to recommend that their patients take a vaccine (5% do not). These responses are broadly similar across gender, age, years of medical practice, and size of the locality in which the doctors live: for all sub-groups we find the share of positive answers to all questions ranges between 85-100% (Supplementary Table 2). Using probability weights based on observable characteristics of the entire population of doctors in the country makes very little difference in the estimated distribution of opinions in our survey. Reassuringly, the opinions in our survey are in line with high actual vaccination rates (88%) observed among Czech doctors when vaccines became available(Czech News Agency (CTK) 2021), despite vaccination not being compulsory for any profession, including for doctors.

3. Experimental design

3.1. Sample

Our main sample consists of participants in the longitudinal online data collection "Life during the pandemic", organized by the authors in cooperation with PAQ Research; the data was collected by the NMS survey agency. In the spring of 2020, the panel began to provide real-time data on developments in economic, health, and social conditions during the Covid-19 pandemic. We use data from twelve consecutive waves of data collection conducted at 3-4 week intervals between mid-March and the end of November 2021.

The information intervention was implemented on March 15, 2021, which we label Wave0; 2,101 individuals took part. The sample from Wave0 is our "base sample" (n = 2,101, 1,052 females / 1,049 males, mean age 52.9 (s.d. = 15.98), youngest 18, oldest 92). The base sample is broadly representative of the adult Czech population in terms of sex, age, education, region, municipality size, employment status before the Covid-19 pandemic, age x sex, and age x education. Prague and municipalities with more than 50,000 inhabitants are oversampled (boost 200%). Sample statistics are presented in Supplementary Table 3. The sample is close to being representative of the adult Czech population in terms of attitudes to Covid-19 vaccines. The development of the proportion of people getting vaccinated in our sample very closely mimics the actual vaccination rates in the Czech Republic (Supplementary Figure 1), when we weight the observations in our sample to be representative in terms of observable characteristics.

An important feature of the panel is that participants agreed to be interviewed regularly, and the response rate is high throughout the study: it ranges between 76-92% in individual follow up waves, and is 86% for the last wave, implemented at the end of November 2021. 1,212 participants (58%) took part in all twelve waves of data collection: they form the "fixed sample". Consequently, in the analysis, we report the main results for (i) all participants from the base sample who responded in a given wave, which we denote "full sample", and for (ii) the "fixed sample", composed of individuals who participated in all twelve waves, eliminating the potential role of differences in samples across waves and making it easier to gauge the dynamics of treatment effects.

3.2. Information intervention and data

The participants were randomly allocated to either the CONSENSUS (n=1,050) or CONTROL (n=1,051) condition in Wave0. In the CONSENSUS condition, they were informed that the Czech Medical Chamber conducted a large survey of almost 10,000 doctors from all parts of the country to collect their views on Covid-19 vaccines. They were also informed that the views were similar for doctors of different genders, ages, and regions. Then, the participants were shown three charts displaying the distribution of responses of doctors regarding their trust in the vaccines, willingness to get vaccinated themselves, and intentions to recommend the vaccine to their patients. Each of the charts was supplemented by a short written summary. The exact wording and the charts are provided in Supplementary Information. In the CONTROL condition, the participants did not receive any information about the survey of medical doctors.

Before the information intervention in Wave0, we elicited prior beliefs about doctor's views in order to quantify misperceptions about doctors' opinions. Specifically, the participants were asked to estimate (i) the percentage of doctors in the Czech Republic who trust the approved vaccines, and (ii) the percentage of doctors who are either vaccinated or intend to get vaccinated themselves. Later, in Wave1, we elicited posterior beliefs to estimate whether people in the CONSENSUS condition actually updated their beliefs about doctors' views based on the information provided.

In all twelve waves, we asked whether respondents got vaccinated against Covid-19. The main outcome variable "Vaccinated" is equal to 1 if the respondent reported having obtained at least one dose of a vaccine against Covid-19. The vaccination rate in our sample closely mimics the levels and dynamics of the overall adult vaccination rate in the country (Supplementary Figure 1), providing an initial indication that respondents did not misreport their vaccination take-up. Further, we collected additional data to verify their vaccination status, and the results are reassuring, as described below.

When the treatment was implemented, only a small fraction of people were eligible to get vaccinated. We study the treatment effects in two stages of vaccination roll-out. In the first stage (until June 2021), the vaccination was gradually rolled out and eligibility rules changed regularly, making the vaccine available for more demographic groups. In the second stage (from July), vaccination was freely available for the entire adult population. The Supplementary Information provides more details, including the timeline of the experiment and vaccine eligibility rules (Supplementary Table 5). Focusing on this time period allows us to test whether the effect of the CONSENSUS condition on vaccination take-up gradually emerges during the first stage, whether it is positive and statistically significant when vaccination became available for all adults, and whether the effect persists across the next several months.

Supplementary Tables 3 and 4 show no systematic differences in the set of baseline characteristics pre-registered as control variables: gender, age (6 categories), household size, number of children, region (14 regions), town size (7 categories), education (4 categories), economic status (7 categories), household income (11 categories) and prior vaccination intentions. Nevertheless, we note that three potentially important but not pre-registered variables are not perfectly balanced. Specifically, prior to the intervention, compared to participants in the CONTROL condition, the individuals in the CONSENSUS condition were slightly less likely to be vaccinated themselves (p-value = 0.113), and expected a smaller percentage of doctors to trust the vaccine (p-value = 0.059) and to intend to get vaccinated (p-value = 0.053). Since these three variables are highly predictive of vaccination take-up, not controlling for them could potentially bias the estimation of treatment effects, as is also indicated by the LASSO procedure, which selects these variables among a set of variables that should be controlled for in our estimates. Thus, we report two main regression specifications:

(i) with the preregistered set of control variables and (ii) with control variables selected by the LASSO procedure. To document robustness, we also report estimates with no control variables and with alternative sets of control variables.

The research study was approved by the Commission for Ethics in Research of the Faculty of Social Sciences of Charles University. The experiment and analyses were pre-registered on the AEA RCT Registry (AEARCTR-0007396).

4. Results

4.1. Misperceptions about doctors' views

To quantify misperceptions about doctors' views on Covid-19 vaccines, we compare participant's prior beliefs about doctors' views, measured before the intervention, with the actual doctor's views from the CMC survey. We find strong evidence of misperceptions. The average, median, and modal guess is that 57%, 60% and 50% of doctors, respectively, want to be vaccinated (Fig. 2, Panel A), while in reality 90% of doctors do. The average, median and modal guess about the percentage of doctors who trust the vaccines is 61%, 62%, and 50%, respectively (Panel B), while in practice 89% of doctors report trusting the vaccines. A vast majority of participants underestimate the percentage of doctors who want to be vaccinated (90%) and those who trust the vaccines (88%).

The distribution of beliefs reveals that the large underestimation does *not* originate in two distinct groups of participants holding opposite views of the medical consensus -- one thinking that most doctors have positive views about the vaccines and the other group thinking that most doctors are skeptical about them. Instead, most people expect a wide diversity of attitudes across individual doctors. 81% of subjects believe that the percentage of doctors who want to be vaccinated is between 20-80%. For beliefs about doctors' trust in the vaccines, this number is 76%. Further, these misperceptions are widespread across all demographic groups based on age, gender, education, income, and geographical regions (Supplementary Table 6).

We find several intuitive descriptive patterns that increase confidence in our measures of beliefs. First, beliefs about doctors' vaccination intentions and their trust in the vaccines are strongly positively correlated ($r(2,099)=0.60$, $p<0.001$). Second, beliefs about doctor's trust and vaccination intentions are highly predictive of respondents' own intentions and take-up

(Supplementary Table 6). In the next sub-section, we will explore whether this relationship is causal. Third, in Supplementary Fig. 2, we show that misperceptions about doctor's views are unlikely to arise due to participants' inattention to the questions. The results are very similar when we exclude the 5% of subjects who did not pass all of the attention checks embedded in the survey, and when we exclude the 10% of participants with the shortest response times.

4.2. Effects of the intervention

We first establish the effects of the intervention on posterior beliefs about doctors' views and vaccination intentions shortly after the intervention. Then, we estimate the effects on long-term dynamics of vaccine take-up.

Short-term effects on belief updating and vaccination intentions. We find that the information provided shifts expectations about doctors' views (Fig. 3, Panel A and Supplementary Table 7). Two weeks after the intervention (in Wave1), the CONSENSUS condition increases beliefs about the share of doctors who trust the vaccines by 5 p.p. (p-value < 0.001) and beliefs about the share of doctors who want to get vaccinated by 6 p.p. (p-value < 0.001). Next, the CONSENSUS condition increases the prevalence of people intending to get vaccinated by around 3 p.p. (p-value = 0.039, Fig. 3, Panel B and Supplementary Table 8). When we restrict the sample to those who participated in all waves, we find the point estimate to be slightly larger (5 p.p., p-value = 0.001).

Effects on vaccination take-up. We find a systematic, robust, and lasting treatment effect on vaccine take-up. Four months after the intervention, when vaccines became available to all adults, we find that participants in the CONSENSUS condition were around four percentage points more likely to be vaccinated than those in the CONTROL condition (Fig. 4 and 5). As expected, due to the gradual roll-out of the vaccine during the March-June period, the effect emerges gradually. The difference in the take-up rates between CONSENSUS and CONTROL conditions is negligible in the initial waves, but then steadily increases to 4-5 percentage points in July and remains relatively stable thereafter (Fig. 4 and Supplementary Table 9).

In Fig. 5 and Supplementary Table 10, we report results from pooled regressions to utilize data from all six waves implemented in July-November, include wave fixed effects, and cluster standard errors at the individual level. The estimated treatment effect is statistically significant for both main specifications - when we control for a set of variables selected by the LASSO procedure (p-value = 0.005) and when we control for the pre-registered set of variables (p = 0.026). The effect is similar when estimated in each of these waves separately (Fig. 4).

The estimated effect size is slightly larger (4.4 p.p.) when we use the specification with LASSO-selected control variables than when we use the specification with pre-registered control variables (3.5 p.p.). Figure 5 shows that this is because the LASSO procedure selects baseline beliefs and vaccination status as relevant control variables, while these variables are not included in the pre-registered set. Consequently, both approaches document robust positive treatment effect between 3.5 and 4.4 percentage points. Readers who believe that researchers should control for random imbalances in important baseline variables may favor the upper bound, while readers concerned about departures from pre-registered analyses may favor the lower bound.

Our finding of a positive treatment effect does not rely on a specific choice of control variables or estimation strategy. First, the effect is very similar when we control for various sets of baseline variables other than the pre-registered and LASSO-selected sets, as well as when we control for none (Fig. 5 and Supplementary Table 10). Second, the effect is statistically significant at conventional levels when we calculate p-values using randomization inference method (Supplementary Tables 9 and 12). Third, the estimated treatment effect is 5.4 p.p. (p=0.008) when we use baseline data about vaccination rates, and employ a difference-in-difference estimation (Supplementary Table 11). Further, the results are robust to excluding participants who arguably paid less attention (Supplementary Table 12). As in the analysis of vaccination intentions, the estimated effects on take-up are slightly larger when we restrict the analysis to those who participated in all 12 waves.

Differential attrition cannot explain our findings. First, we find that the participation rate is relatively high and does not differ across the CONSENSUS and CONTROL conditions on average. There is also no evidence of differential attrition by baseline covariates, suggesting that different types of individuals were not participating in the CONSENSUS and CONTROL conditions (Supplementary Table 13). We find this pattern for participation in each of the eleven follow-up waves separately as well as when we focus on participation in all waves (being in the fixed sample). As a sensitivity test, we impute missing vaccination status for those who did not participate in some of the waves and assume either that (i) their vaccination status has not changed since the last wave for which the data is available or that (ii) their status is the same as the one reported in the earliest next wave for which the data is available. The effects are robust (Supplementary Table 12).

The effect of the CONSESUS condition on take-up is lasting. First, while in the main estimates we focus on the likelihood of respondent's getting at least one vaccine dose, a qualitatively similar and statistically significant effect emerges when we focus on the likelihood of participants getting two doses, as required for most Covid-19 vaccines (Supplementary Fig. 3). Second, the treatment effect emerges during a three-month period, due to availability restrictions, and then is stable across all six follow-up waves covering the July-November period (Fig. 4). Thus, the main effect is not driven by differences in the timing of getting vaccinated. Finally, in the September and November waves, we asked about participant's intentions to get a booster dose. The estimated effect is very similar in magnitude as the effect on take-up of the first dose (around 4 p.p.), suggesting the information intervention elevates vaccination demand even nine months after it was implemented (Supplementary Fig. 3).

Documenting such persistence has interesting implications. Since the demand for vaccination in the CONTROL condition does not catch up with the CONSENSUS condition over such a long period, the results suggest that the type of vaccine hesitancy reduced by the CONSENSUS condition is resilient to policies, campaigns, or any life disruptions that participants were exposed to during the period studied. This includes a severe Covid-19 wave that took place in November 2021 in the Czech Republic, which resulted in one of the highest national mortality rates in global comparisons (see Section 3.1 of the Supplementary Information).

The point estimates of around 4 p.p. imply a relatively large effect size, especially in light of the low costs of the intervention. Since the vaccination rate in the CONTROL condition was 70-75% during the July-November period, the CONSENSUS condition reduces the number of those not vaccinated by 13-16%. To compare, providing truthful information about other people's vaccination intentions was shown to increase intentions to get vaccinated by 1.9 p.p.(Moehring et al. 2021). Nudging health workers to get vaccinated by referring to vaccinated colleagues increases likelihood of their registering for vaccination by around 3 p.p(Santos et al. 2021). More generally, the most successful, low-cost behavioral nudges with documented impact on take-up have estimated effect sizes up to 5 p.p(Dai et al. 2021; Milkman et al. 2021), which is quite similar to the effect of providing information about consensus in doctors' opinions studied here. In addition, a noteworthy aspect of our study is the documented persistence of the effects, which is another crucial margin for assessing the intervention effectiveness.

The Supplementary Information describes exploratory analyses of how the treatment effect differs across different sub-samples of respondents (Supplementary Tables 7 and 12). Reassuringly, we find that the positive effect on vaccine take-up is concentrated among those who underestimated doctors' trust and vaccination intentions, while no systematic effect is observed among over-estimators. Also, the effect is driven by those who initially did not intend to get vaccinated, in line with the interpretation that the intervention changed the views of individuals who were initially skeptical about the vaccine. Nevertheless, the analysis of heterogenous effects should be treated as tentative, because the differences in coefficients are not always statically significant and we do not adjust for multiple hypotheses testing.

4.3. Verification of vaccination status

Given that vaccination status is self-reported, we provide several tests documenting that the observed effect does not arise due to priming or the experimenter demand motivating some people in the CONSENSUS condition to report being vaccinated even when they were not. We begin by noting that the observed treatment effect is lasting and emerged only gradually over several months as more people became eligible to get vaccinated. In contrast, priming and experimenter demand effects are typically thought to be relevant mainly for responses shortly after a treatment (Haaland, Roth, and Wohlfart 2021; Cohn and Maréchal 2016). To probe further, we collected new data to verify the reported vaccination status in the main data set. Using two distinct approaches, we show that (i) misreporting is rare and is not more common in the CONSENSUS condition, and (ii) the main effect is driven by individuals whose reports we can verify with a high degree of confidence.

First, inspired by existing work (Haaland and Roth 2020; Haaland, Roth, and Wohlfart 2021), we use data collected for us by a third, independent party. We take advantage of the fact that different survey agencies have access to the panel our respondents are sampled from (the Czech National Panel). While the main data collection was implemented by one agency (NMS), we partnered with another agency (STEM/MARK) to include a question on vaccination status in a survey implemented on its behalf among the same sample. Since the survey agency, graphical interface, and topic of the survey were different from our main data collection, we believe respondents considered the two surveys to be completely independent of each other, and thus the experimenter demand effect potentially associated with treatment in our main survey is unlikely to affect responses in the third party verification survey. More details about the third-party verification survey are provided in Section 3.4 of the Supplementary Information.

The response rate was high (92.8%) and independent of the treatment (Supplementary Table 14). Out of 1,801 participants in Wave11, 1,672 also took part in the third party verification survey implemented two weeks later. This allows us to compare reported vaccination status at the individual level for a vast majority of our sample. We find several clear and reassuring patterns. First, only two respondents (one in CONSENSUS and one in CONTROL) reported being vaccinated in the main survey but reported the opposite in the verification survey, and thus misreporting being vaccinated is very rare in general and not related to treatment. Second, we show that the effect of the CONSENSUS condition is not driven by participants whose reports we are unable to verify because they did not take part in Wave11 of the main data collection or in the third party verification survey. Using ordered and multinomial logit, we show that the effect of the CONSENSUS condition on lower prevalence of those reporting not being vaccinated in the main survey is almost fully explained by greater prevalence of those reporting being vaccinated and having their vaccinations status verified in the independent survey (Supplementary Table 15).

The second verification links the reported vaccination status with an official proof of vaccination. It is guided by the idea that people who misreport being vaccinated should not be able, or willing, to provide information from their administrative records about their vaccination. We exploit the fact that all vaccinated persons receive an EU Digital COVID certificate issued by the Czech Ministry of Health, which is often used as a screening tool. Importantly, the certificate contains several specific pieces of information about the applied vaccine that are unlikely to be known by someone without a certificate. Therefore, in the last wave, we asked respondents reporting that they are vaccinated whether they had the certificate with them. Those who did were asked to type in the text about the type of vaccine they received (e.g., the correct answer for those who got a vaccine from Pfizer/Biontech is “SARS-CoV-2 mRNA“). More details about the certificate verification procedure are in the Supplementary Information.

96% of those who reported being vaccinated confirmed that they had the certificate with them, and this proportion is very similar across conditions (χ^2(1,N=1,414)=0.999, p=0.318), suggesting that individuals in the CONSENSUS condition were not more likely to avoid providing verifiable information (Supplementary Table 14). Further, assessment of the typed text by independent raters suggests that, conditional on their having the certificate, more than 94% of respondents actually looked at the certificate when responding to our detailed questions. Importantly, this rate is again very similar across conditions (χ^2(1,N=1,364)=0.473, p=0.492), suggesting that individuals in the CONSENSUS condition were not more likely to misreport their vaccination status. Finally, we show that the effect of the CONSENSUS condition on vaccine take-up is driven by greater prevalence of participants whose possession of the certificate we verify (Supplementary Table 15).

5. Discussion

Our results shed light on the role that misperceptions of the distribution of expert views play in vaccine hesitancy, and also show how this barrier can be lifted by providing accurate information. We provide evidence that (i) the vast majority of Czech medical doctors trust the approved Covid-19 vaccines, (ii) the vast majority of respondents in a nationally-representative survey substantially underestimate the percentage of doctors with positive views of the vaccine, and (iii) correcting these misperceptions has lasting positive impacts on vaccine take-up. While existing experiments have made progress in identifying low-cost strategies to increase vaccination intentions (Milkman et al. 2021; Ashworth et al. 2021; Loomba et al. 2021; Alsan and Eichmeyer 2021) and take-up (Dai et al. 2021) measured shortly after the intervention, this paper integrates the experiment in longitudinal online data collection and contributes by identifying a low-cost, scalable treatment that has lasting effects on behavior.

Scientists, and the medical community as a whole, have invested enormous efforts to develop and deliver Covid-19 vaccines. However, much less collective effort has been directed at informing the public of the high levels of trust in the vaccine across the broad medical community. Here, we show that professional medical associations can serve as aggregators of individual doctors' views, by facilitating opinion polls among doctors. Resulting data can be employed in campaigns to tackle vaccine hesitancy, and also as input for media reports. Although we cannot empirically pin down the sources of the misperceptions observed in our study, we suspect that they originate, at least in part, in a journalistic norm in which balance is often considered a mark of objective and impartial reporting, and a way to attract the attention of news consumers (Dunwoody 1999). Our results strengthen the case for supplementing contrasting views on controversial issues with information about how prevalent such views are(Schmid, Schwarzer, and Betsch 2020).

A natural open question is how broadly applicable these findings are beyond the context studied. First, we estimate the effects of a one-time intervention, among a sample in which most people likely paid attention to the information. Understanding whether the efficiency of the intervention can be fostered by repeated provision of information and which modes of delivery, such as media ads or informational mail flyers from government and insurance companies can best attract sufficient level of attention is an important next step for future research. Second, in theory, this type of intervention should have larger effects (i) the greater trust in medical doctors in a given country is and (ii) the greater the prevalence of misperceptions about the views of doctors towards a vaccine is. We studied this intervention in a country with an approximately median level of trust in doctors (Blendon, Benson, and Hero 2014), which provides some confidence that our findings from the Czech Republic may extend to other settings. At the same time, because this is the first paper to provide direct evidence of the prevalence and size of misperceptions about doctors' views on Covid-19 vaccines, we can only speculate how widespread such misperceptions are in other settings. Given that the likely sources of the misperceptions – false-balance reporting and echo chambers - are not specific to the Czech Republic, and given that misperceptions about scientific consensus have been documented in other countries in other domains, including health and climate change (Bursztyn and Young 2021; S. L. D. Van Linden et al. 2015), we suspect that this bias in beliefs about Covid-19 vaccines is relatively widespread. We hope to see more research on this front.

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Data availability. The dataset generated and analyzed for the main experiment, together with replication files, will be made available in the Harvard Dataverse repository (https://doi.org/10.7910/DVN/RH0T6R) when the paper is accepted for publication. The availability of the dataset from the Supplementary survey with medical doctors is subject to the approval of the Czech Medical Chamber.

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Additional information. Supplementary Information is available for this paper. It contains supplementary figures and tables, background information about the Covid-19 pandemic and vaccination in the Czech Republic, and more details about data collections designed to verify vaccination status.

The research study was approved by the Commission for Ethics in Research of the Faculty of Social Sciences of Charles University. Participation was voluntary and all respondents provided their consent to participate in the survey.

Figures

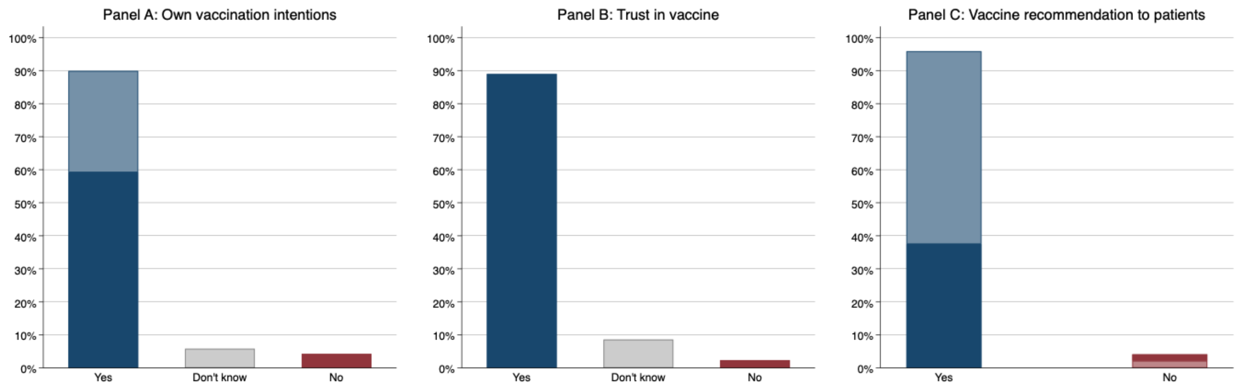


Figure 1. Doctors' views on Covid-19 vaccines (Supplementary Study, N=9,650). In **a**, we report the distribution of responses to the question "Will you personally be interested in getting vaccinated, voluntarily and free of charge, with an approved vaccine against Covid-19?". Among participants who answered yes, the dark (light) blue refers to those who reported already being vaccinated (plan to get vaccinated). In **b**, we report responses to the question "Do you trust Covid-19 vaccines that have been approved by the European Medicines Agency (EMA) approval process?". In **c**, we report responses to the question "Will you recommend Covid-19 vaccination to your healthy patients to whom you would recommend other commonly-used vaccines?" Among participants who answered yes, the dark (light) blue refers to those who will recommend the vaccines even without being asked (only when asked). In Supplementary Table 2, we show that the distribution of views is similar across various demographic groups and level of seniority.

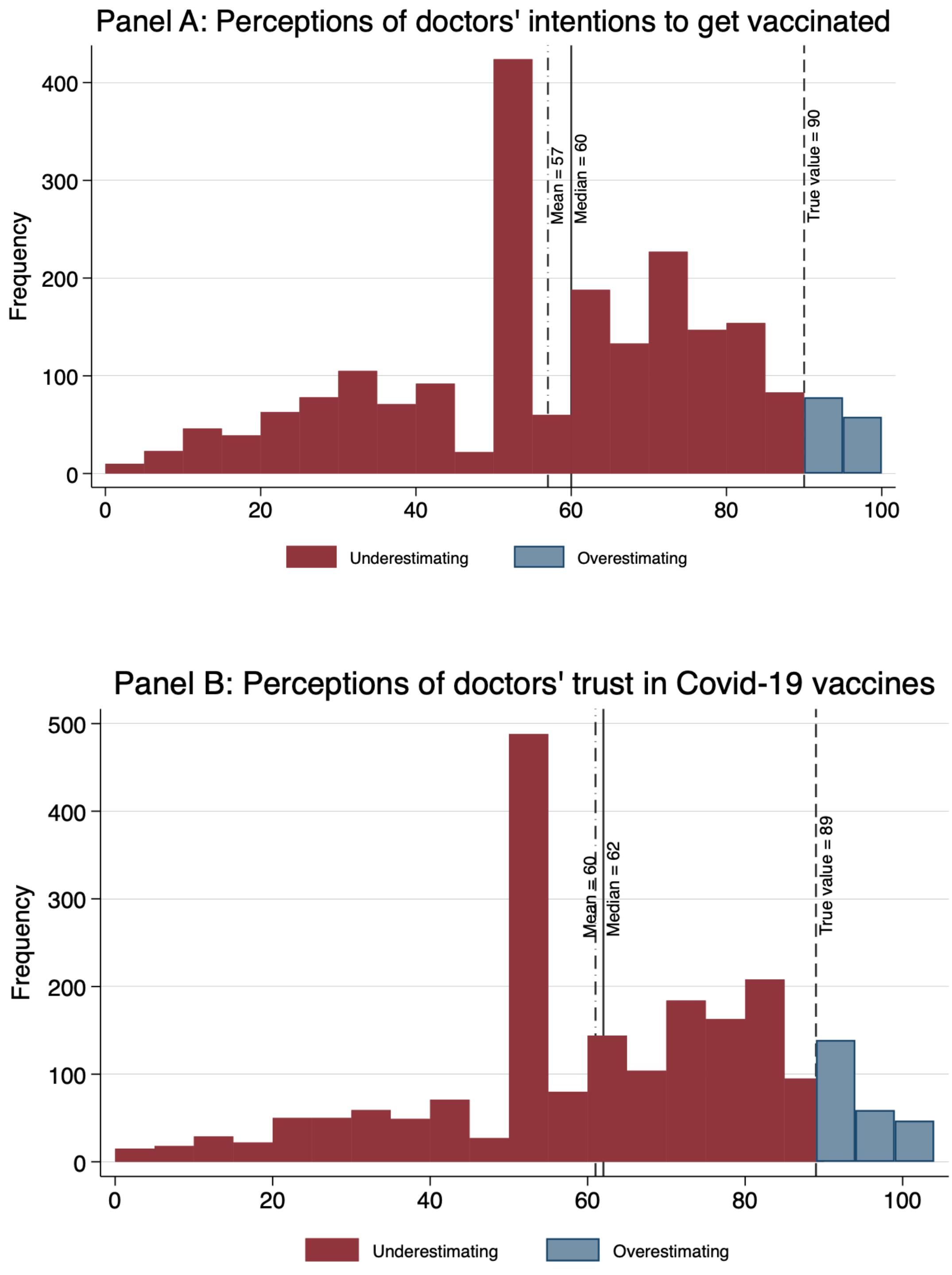


Figure 2. Perceptions of doctors' views on Covid-19 vaccines (Main Experiment, N=2,101). In **a**, we report the distributions of respondents' prior beliefs about what percentage of doctors would like to get vaccinated. In **b**, we report the distributions of respondents' beliefs about what percentage of doctors trust approved Covid-19 vaccines. The dashed line shows the true value, based on responses of doctors in the Supplementary study. The red (blue) color illuminates the percentage of those who underestimate (overestimate) doctors' own vaccination intentions (panel a) and trust in the Covid-19 vaccines (panel b).

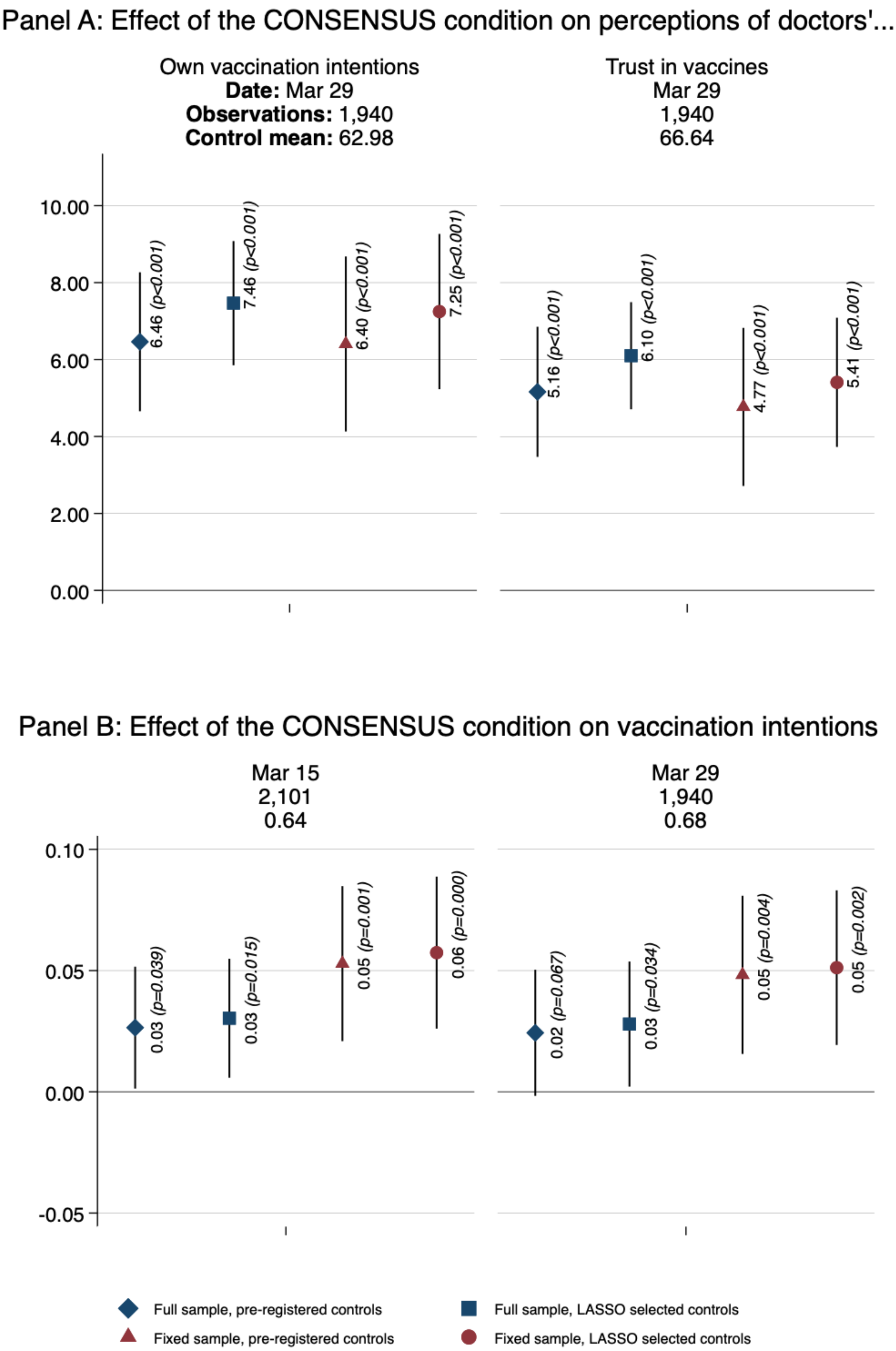

Panel A: Effect of the CONSENSUS condition on perceptions of doctors'...
Own vaccination intentions
Date: Mar 29
Observations: 1,940
Control mean: 62.98
Trust in vaccines
Mar 29
1,940
66.64
10.00
8.00
6.00
4.00
2.00
0.00
6.46 (p<0.001)
7.46 (p<0.001)
6.40 (p<0.001)
7.25 (p<0.001)
5.16 (p<0.001)
6.10 (p<0.001)
4.77 (p<0.001)
5.41 (p<0.001)
Panel B: Effect of the CONSENSUS condition on vaccination intentions
Mar 15
2,101
0.64
Mar 29
1,940
0.68
0.10
0.05
0.00
-0.05
0.03 (p=0.039)
0.03 (p=0.015)
0.05 (p=0.001)
0.06 (p=0.000)
0.02 (p=0.067)
0.03 (p=0.034)
0.05 (p=0.004)
0.05 (p=0.002)
Full sample, pre-registered controls
Full sample, LASSO selected controls
Fixed sample, pre-registered controls
Fixed sample, LASSO selected controls

Figure 3. Effects of the CONSENSUS condition on posterior beliefs about doctors' views and vaccination intentions (Main Experiment). In **a**, we plot the estimated effects of CONSENSUS on beliefs about the percentage of medical doctors who plan to get vaccinated (left panel) and on beliefs about the percentage of doctors who trust approved Covid-19 vaccines (right panel), measured in Wave1 (March 29). In **b,** the dependent variable is an indicator for an intention to be vaccinated with a vaccine against Covid-19, measured in Wave0 (March 15) and Wave1. We report the results of two specifications: (i) a linear probability regression controlling for pre-registered covariates: gender, age category (6 categories), household size, number of children, region (14 regions), town size (7 categories), education (4 categories), economic status (7 categories), household income (11 categories), and baseline vaccination intentions, and (ii) a double-selection LASSO linear regression selecting from a wider set of controls in Supplementary Table 3, including prior vaccine take-up and beliefs about the views of doctors. The whiskers denote the 95%-confidence interval based on Huber-White robust standard errors. We report estimates for (i) all observations, full sample (diamond and square) and (ii) for a sub-sample of participants who took part in all 12 waves, fixed sample (triangle and circle). In the upper part of the Figure, we report the timing, the total number of observations, and CONTROL mean for each wave. See Supplementary Information section 3.5 for further specification details. Supplementary Tables 7 and 8 show the regression results for **a** and **b** in detail, respectively.

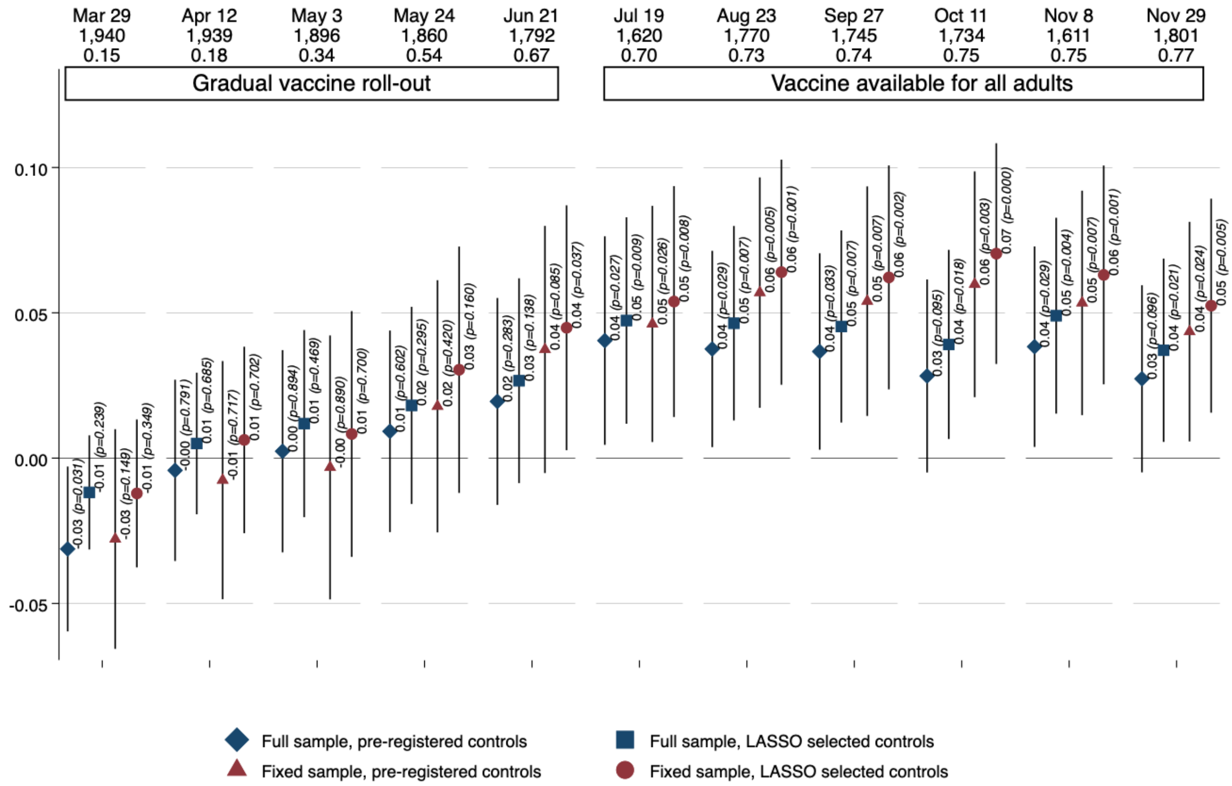


Figure 4. Effects of the CONSENSUS condition on vaccination take-up (Main Experiment). This figure plots the estimated effects of CONSENSUS by survey wave on getting at least one dose of a vaccine against Covid-19. We report the same four specifications as in Figure 3 (linear probability model with pre-registered controls using full (diamond) and fixed (triangle) samples, and double-selection LASSO linear regression selecting from controls in Supplementary Table 3 using full (square) and fixed (circle) samples). The whiskers denote the 95%-confidence interval based on Huber-White robust standard errors. In the upper part of the Figure, we report the timing, the total number of observations, and CONTROL mean for each wave. Supplementary Table 9 shows the regression results in detail.

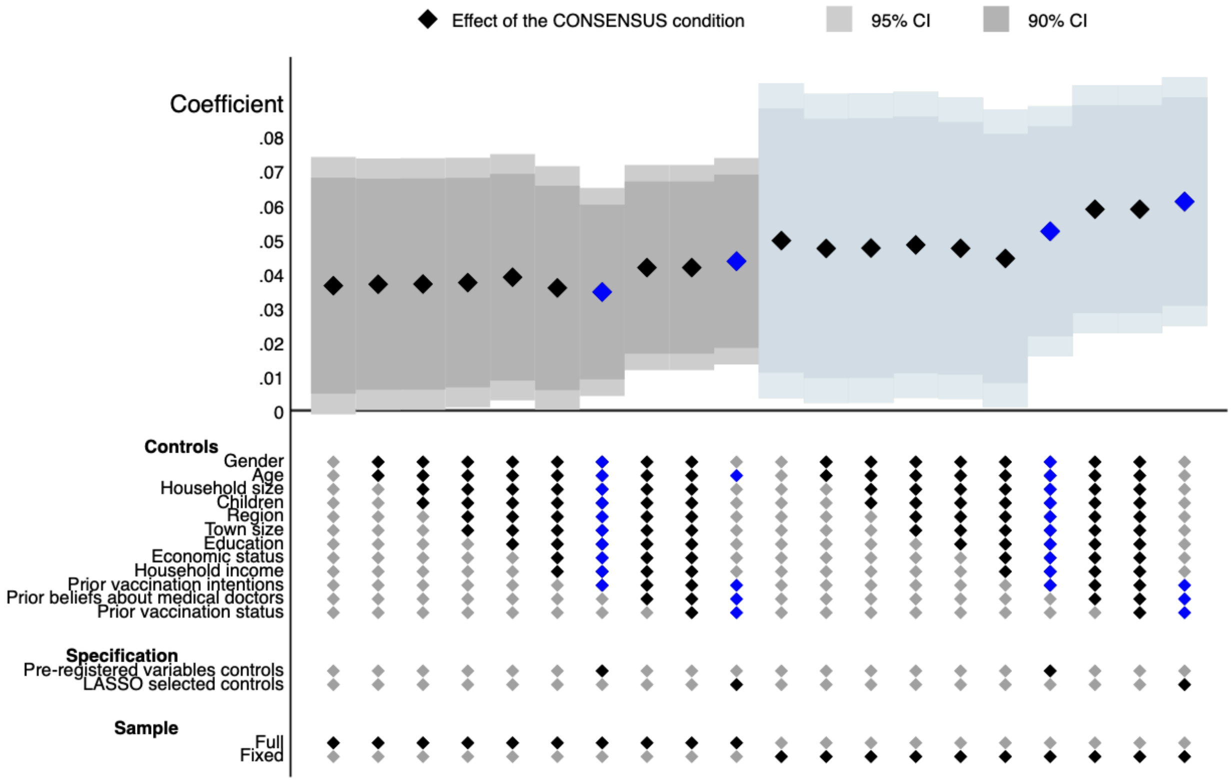
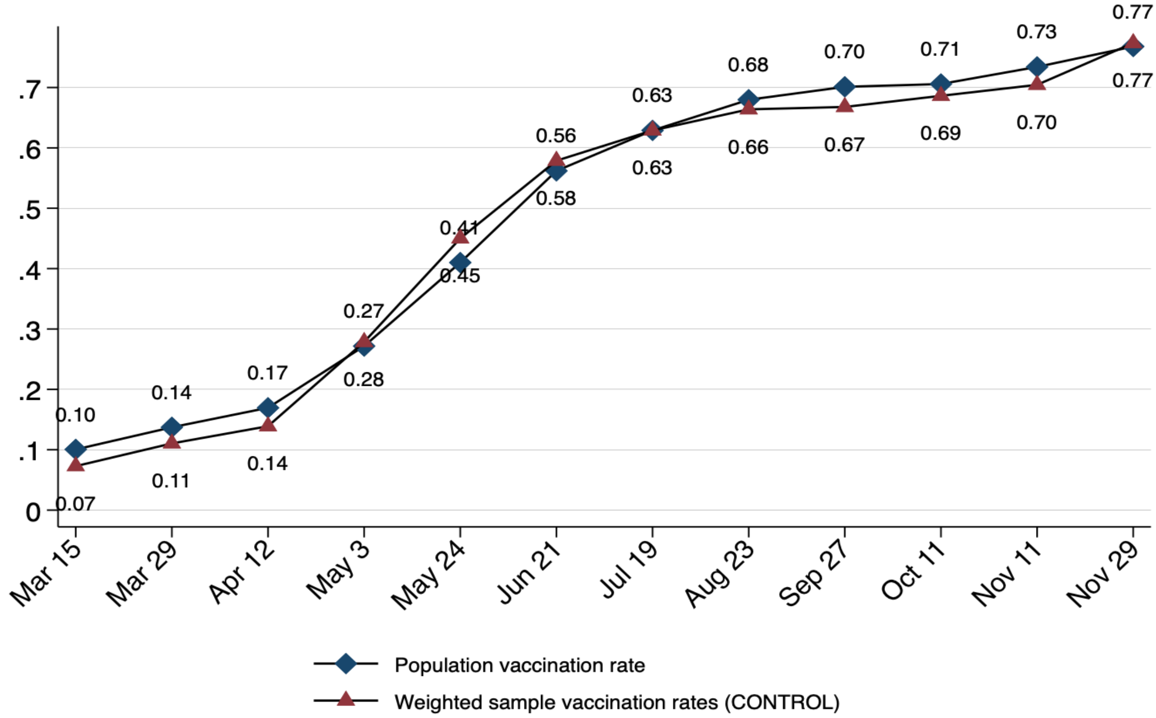


Figure 5. Effects of the CONSENSUS condition on vaccine take-up: Robustness (Main Experiment). This specification chart plots the estimated effects of CONSENSUS on the likelihood of vaccine take-up for a pooled sample across Waves 6 to 11 (when the vaccine was available for all adults). All specifications include wave fixed effects. The darker (lighter) whiskers denote the 95% (90%)-confidence interval based on standard errors clustered at the respondent level. We report a range of specifications by sequentially adding sets of control variables in Supplementary Table 3. The main specifications are marked by blue diamonds. We report all specifications for both the full (left-hand side) and the fixed samples (right-hand side). Supplementary Table 10 shows the regression results in detail.

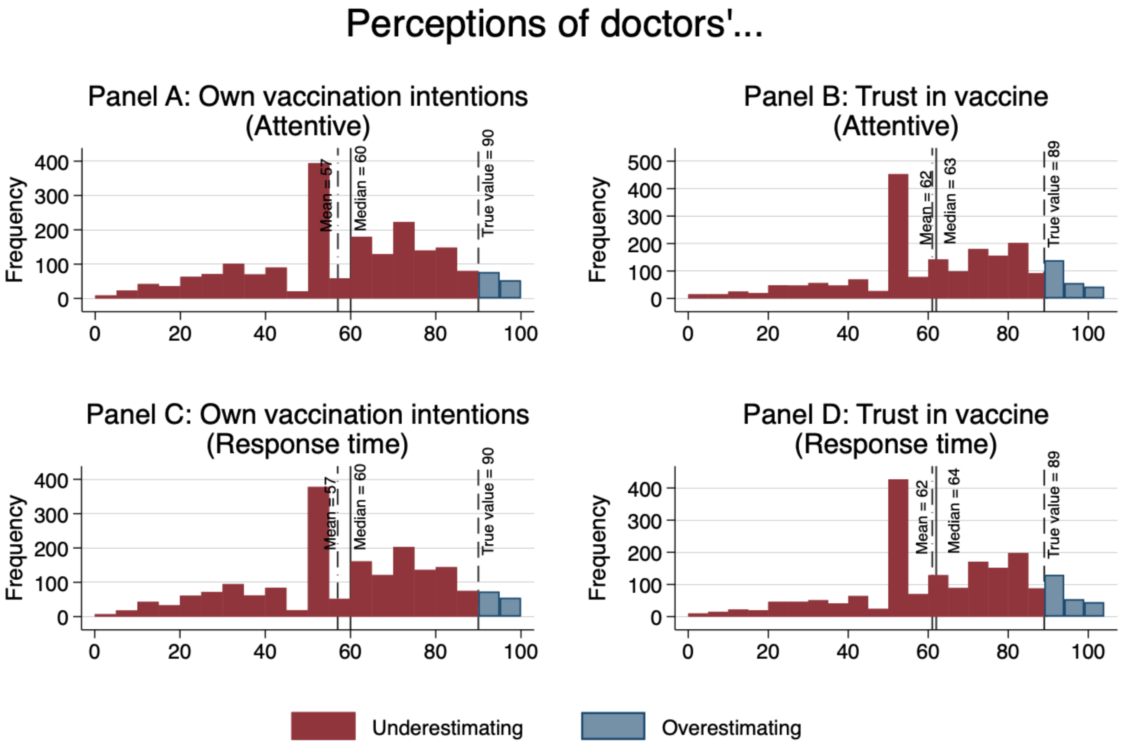
Supplementary Information

Contents

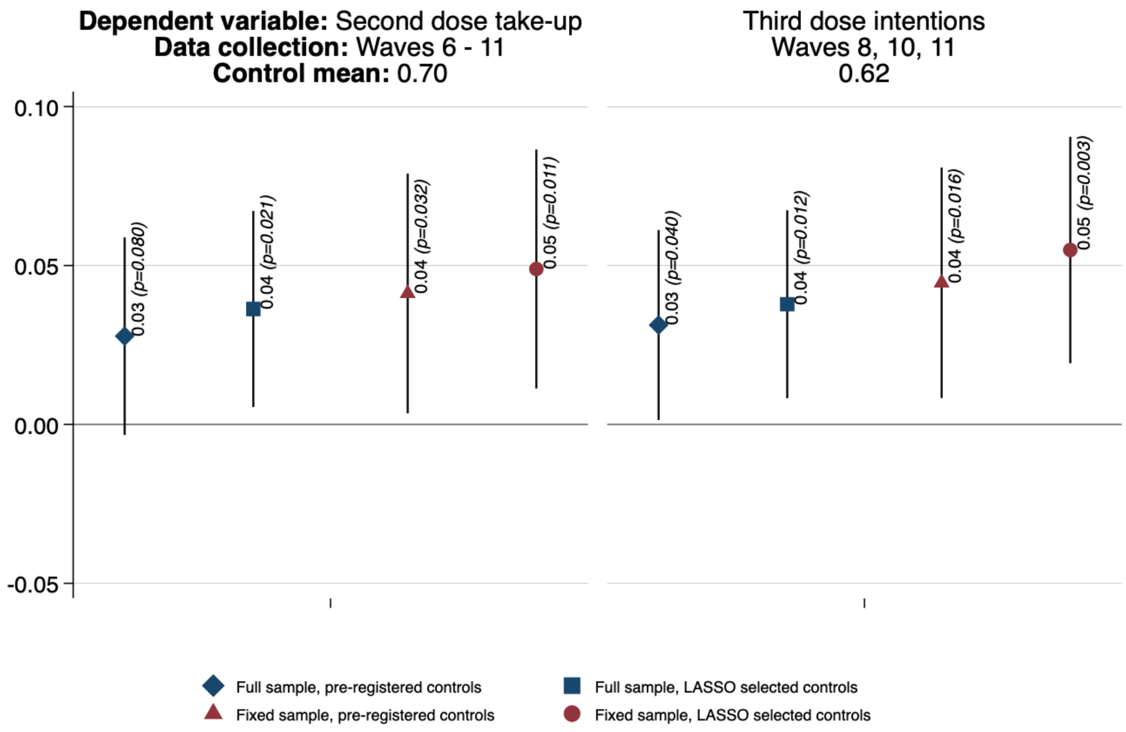
1 Supplementary Figures



Supplementary Figure 1. Comparison of development of vaccination rate in the CONTROL group and the Czech adult population. The horizontal axis represents a timeline. Population data means are for a Tuesday following the start of the data collection (Mondays) at a respective wave denoted by diamonds. The weighted CONTROL group means are denoted by triangles. Source of population data: Opendatalab, a website set up by the Faculty of Information Technologies at the Czech Technical University in Prague using open data from the Czech Ministry of Health (https://ockovani.opendatalab.cz/statistiky), ISSN 2787-9925 - http://aleph.techlib.cz/F/?func=direct&doc_number=000017426&local_base=STK02 (accessed on January 12, 2022)[1].



Supplementary Figure 2. Perceptions of views of doctors about the Covid-19 vaccines, excluding inattentive participants (Main Experiment). In **a** and **c**, we report the distributions of respondents' beliefs about what percentage of doctors would like to get vaccinated. In **b** and **d**, we report the distributions of respondents' beliefs about what percentage of doctors trust the approved Covid-19 vaccines. In **a** and **b**, we use data for respondents who passed all attention checks (N=1,901), in **c** and **d**, we exclude data for respondents in the first decile of response time fixed at Wave0 (N=1,879). The dashed line shows the true value, based on the responses of doctors in the Supplementary study. The red (blue) color illuminates the fraction of those who underestimate (overestimate) doctors' own vaccination intentions (in **a** and **c**) and trust in the Covid-19 vaccines (in **b** and **d**).



Supplementary Figure 3. Effects of the CONSENSUS condition on the second dose take-up and on intentions to take-up a third (booster) dose (Main Experiment). This figure plots estimated treatment effects on 1) the second dose take-up (two doses were designed as a complete vaccination cycle for the most commonly used vaccines), and on 2) intentions to take-up a third (booster) dose. The whiskers denote the 95%-confidence interval based on standard errors clustered at the individual level. Diamonds and triangles report estimates from a linear probability regression that controls for the pre-registered set of control variables. Squares and circles report estimates from a double-selection LASSO linear regression (dsregress command in Stata 17) selecting from a set of covariates in Supplementary Table 3. All regressions include wave fixed effects. In the upper part of the Figure we report the timing and control mean. We report estimates for the full sample (diamonds and squares) and for a restricted sample of respondents participating in all 11 waves (triangles and circles).

2 Supplementary Tables

Supplementary Table 1. Comparison of characteristics of the doctors in the Czech Medical Chamber survey (Supplementary Survey) and of all doctors in the Czech Republic.

	(1) Sample mean	(2) SD	(3) Czech Medical Chamber	(4) UZIS administrative data	(5) Difference (3)-(1) (p-value)	(6) Difference (4)-(1) (p-value)
Female	0.636	0.481	0.598	0.584	-0.038 (<0.001)	-0.052 (<0.001)
Age category						
age cat 18-24	0.001	0.023	0.001	0.001	0.000 (0.038)	0.000 (0.038)
age cat 25-34	0.144	0.352	0.193	0.229	0.049 (<0.001)	0.085 (<0.001)
age cat 35-44	0.200	0.400	0.187	0.217	-0.013 (0.002)	0.017 (<0.001)
age cat 45-54	0.233	0.422	0.183	0.199	-0.050 (<0.001)	-0.034 (<0.001)
age cat 55-64	0.239	0.426	0.169	0.172	-0.070 (<0.001)	-0.067 (<0.001)
age cat 65+	0.184	0.388	0.267	0.182	0.083 (<0.001)	-0.002 (0.587)
Sector						
State	0.357	0.479		0.578		0.221 (<0.001)
Private	0.643	0.479		0.596		-0.047 (<0.001)
Seniority						
1-10 years	0.196	0.397		0.254		0.058 (<0.001)
11-20 years	0.182	0.385		0.190		0.008 (0.031)
20+ years	0.622	0.485		0.516		-0.106 (<0.001)
Town size						
Below 999	0.009	0.093		0.010		0.001 (0.171)
1,000-1,999	0.021	0.145		0.022		0.001 (0.710)
2,000-4,999	0.047	0.212		0.047		0.000 (0.906)
5,000-19,999	0.179	0.383		0.234		0.055 (<0.001)
20,000-99,999	0.317	0.465		0.427		0.110 (<0.001)
Above 100,000	0.427	0.495		0.229		-0.198 (<0.001)
Region						
Prague	0.227	0.419	0.230	0.241	0.003 (0.489)	0.014 (0.001)
Central Bohemia	0.087	0.282	0.081	0.100	-0.006 (0.035)	0.013 (<0.001)
South Bohemia	0.044	0.205	0.053	0.056	0.009 (<0.001)	0.012 (<0.001)
Plzeň	0.046	0.210	0.058	0.059	0.012 (<0.001)	0.013 (<0.001)
Karlovy Vary	0.025	0.155	0.022	0.025	-0.003 (0.092)	0.000 (0.831)
Ústí	0.048	0.214	0.056	0.061	0.008 (<0.001)	0.013 (<0.001)
Liberec	0.038	0.192	0.032	0.036	-0.006 (0.002)	-0.002 (0.274)
Hradec Králové	0.052	0.221	0.054	0.055	0.002 (0.310)	0.003 (0.145)
Pardubice	0.043	0.204	0.037	0.044	-0.006 (0.002)	0.001 (0.780)
Vysočina	0.048	0.214	0.037	0.041	-0.011 (<0.001)	-0.007 (0.001)
South Moravia	0.138	0.345	0.130	0.130	-0.008 (0.029)	-0.008 (0.028)
Olomouc	0.091	0.287	0.065	0.070	-0.026 (<0.001)	-0.021 (<0.001)

Zlín	0.041	0.197	0.044	0.050	0.003 (0.083)	0.009 (<0.001)
Moravia-Silesia	0.073	0.260	0.101	0.114	0.028 (<0.001)	0.041 (<0.001)
Observations	9,650		57,386	51,638		

Notes: Sample means in column 1. Standard deviations in column 2. Column 3 reports means for the entire population of Czech medical doctors from the database of the Czech Medical Chamber. Column 4 reports means for the entire population of Czech medical doctors from the database of the Institute of Health Information and Statistics (UZIS). Column 5 presents a difference between columns 3 and 1 and a t-test p-value comparing the sample mean to the population mean (CMC). Column 6 presents a difference between columns 4 and 1 and a t-test p-value comparing the sample mean to the population mean (UZIS).

Supplementary Table 2. Share of positive responses of Czech medical doctors to three questions on trust in vaccines, own intentions to get vaccinated, and willingness to recommend the vaccines to their healthy patients (Supplementary Survey).

	(1)	(2)	(3)	(4)
		Sample means		
	Intention	Trust	Recommend	Observations
Male	0.907	0.899	0.954	3,511
Female	0.894	0.885	0.961	6,139
Age category				
age cat 18-24	1.000	0.800	1.000	5
age cat 25-34	0.929	0.912	0.972	1,394
age cat 35-44	0.886	0.881	0.949	1,928
age cat 45-54	0.880	0.871	0.948	2,244
age cat 55-64	0.891	0.886	0.964	2,302
age cat 65+	0.924	0.913	0.965	1,777
Sector				
State	0.916	0.901	0.958	3,445
Private	0.890	0.884	0.959	6,205
Seniority				
1-10 years	0.916	0.898	0.965	1,894
11-20 years	0.885	0.880	0.949	1,752
20+ years	0.898	0.891	0.959	6,004
Town size				
Below 999	0.869	0.893	0.976	84
1,000-1,999	0.879	0.865	0.957	207
2,000-4,999	0.888	0.901	0.965	456
5,000-19,999	0.891	0.878	0.957	1,726
20,000-99,999	0.898	0.887	0.956	3,057
Above 100,000	0.906	0.897	0.960	4,120
Region				
Prague	0.913	0.900	0.959	2,191
Central Bohemia	0.920	0.907	0.967	840
South Bohemia	0.900	0.893	0.955	422
Plzeň	0.897	0.886	0.966	447
Karlovy Vary	0.857	0.840	0.945	238
Ústí	0.890	0.886	0.963	464
Liberec	0.913	0.897	0.965	368
Hradec Králové	0.920	0.886	0.950	499
Pardubice	0.876	0.885	0.947	419
Vysočina	0.908	0.905	0.959	465
South Moravia	0.893	0.896	0.959	1,329
Olomouc	0.866	0.866	0.953	876

Zlín	0.903	0.880	0.957	391
Moravia-Silesia	0.884	0.876	0.960	701

Notes: Means in columns 1 to 3. Column 1 reports the share responding “Yes” or “I’m already vaccinated” to the question “Will you personally be interested in getting vaccinated, voluntarily and free of charge, with an approved vaccine against Covid-19?”. Column 2 reports the share responding “Yes” to “Do you trust Covid-19 vaccines that have been approved by the European Medicines Agency (EMA) approval process?”. Column 3 reports the share responding, “I will actively recommend vaccinations to them, even if they do not ask for my recommendation.” or “I will recommend vaccinations to them, if they ask for my recommendation.” to the question “Will you recommend Covid-19 vaccination to your healthy patients to whom you would recommend other commonly-used vaccines?” We also estimated weighted means of the same variables, using analytic weights calculated separately for each group of characteristics (in bold) using the population data from UZIS (Column 4 of Supplementary Table 1). All estimates rounded to three digits are identical to those reported in the table.

Supplementary Table 3. Demographic characteristics: summary statistics and randomization check for the full sample (Main Experiment).

	(1) Full sample	(2) CONTROL	(3) CONSENSUS	(4) P-value
Female	0.501	0.490	0.511	0.326
Age category				
age cat 18-24	0.043	0.049	0.037	0.198
age cat 25-34	0.114	0.114	0.113	0.951
age cat 35-44	0.160	0.159	0.161	0.898
age cat 45-54	0.187	0.182	0.192	0.531
age cat 55-64	0.183	0.186	0.180	0.743
age cat 65+	0.314	0.311	0.316	0.803
Household size	2.335	2.310	2.360	0.281
Number of children	0.428	0.424	0.432	0.813
Children missing	0.068	0.069	0.067	0.538
Region				
Prague	0.289	0.294	0.285	0.640
Central Bohemia	0.087	0.074	0.099	0.043
South Bohemia	0.038	0.043	0.033	0.256
Plzeň	0.046	0.049	0.043	0.534
Karlovy Vary	0.018	0.018	0.018	0.998
Ústí	0.067	0.066	0.068	0.857
Liberec	0.038	0.036	0.039	0.728
Hradec Králové	0.042	0.039	0.045	0.511
Pardubice	0.041	0.040	0.042	0.822
Vysočina	0.034	0.030	0.038	0.335
South Moravia	0.097	0.107	0.088	0.143
Olomouc	0.049	0.046	0.051	0.539
Zlín	0.045	0.050	0.040	0.250
Moravia-Silesia	0.110	0.108	0.111	0.828
Town size				
Below 999	0.065	0.052	0.077	0.021
1,000-1,999	0.035	0.031	0.038	0.402
2,000-4,999	0.059	0.059	0.059	0.996
5,000-19,999	0.111	0.107	0.116	0.483
20,000-49,999	0.072	0.063	0.081	0.107
50,000-99,999	0.171	0.182	0.160	0.186
Above 100,000	0.487	0.506	0.469	0.085
Education				
primary	0.046	0.039	0.052	0.142
lower secondary	0.277	0.260	0.293	0.085
upper secondary	0.363	0.387	0.339	0.022

university	0.315	0.314	0.315	0.951
Economic status				
Employee	0.480	0.479	0.482	0.879
Entrepreneur	0.046	0.042	0.050	0.401
Student	0.035	0.038	0.032	0.480
Parental leave	0.039	0.041	0.036	0.574
Retired	0.348	0.349	0.348	0.940
Unemployed	0.036	0.034	0.038	0.637
Other	0.016	0.017	0.014	0.601
Household income				
Up to 10,000 CZK	0.014	0.017	0.011	0.271
10,001 - 15,000 CZK	0.065	0.066	0.065	0.934
15,001 - 20,000 CZK	0.095	0.081	0.109	0.030
20,001 - 25,000 CZK	0.075	0.077	0.072	0.683
25,001 - 30,000 CZK	0.108	0.108	0.107	0.894
30,001 - 35,000 CZK	0.123	0.122	0.124	0.888
35,001 - 40,000 CZK	0.109	0.123	0.096	0.051
40,001 - 50,000 CZK	0.122	0.126	0.118	0.599
50,001 - 60,000 CZK	0.090	0.076	0.104	0.027
Over 60,000 CZK	0.085	0.081	0.089	0.526
I don't know / Don't want to say	0.115	0.124	0.106	0.196
Vaccine intention (Wave -1)	0.642	0.642	0.641	0.951
Vaccinated	0.082	0.091	0.072	0.113
Beliefs about doctors'[+]				
Intentions to get vaccinated	57.163	58.146	56.180	0.053
Trust in Covid-19 vaccines	61.495	62.278	60.712	0.059
Observations	2,101	1,051	1,050	
Omnibus randomization test of joint significance for all variables above				
P-value				0.342

Notes: Means in columns 1, 2, and 3. Column 4 reports p-values of a Wilcoxon rank-sum test for equality between the CONTROL and CONSENSUS conditions for non-binary variables (Household size, Number of children, Beliefs about doctors' intentions and Beliefs about doctors' trust), whereas for all remaining categorical variables we use Pearson's chi-squared test. Full sample used. The omnibus randomization test of joint significance presents a p-value of an F-test for an OLS regression with CONSENSUS as a dependent variable and the set of covariates reported in the table as independent variables for the Wave0 sample.

[+] We did not elicit beliefs about the third type of information provided to respondents in the CONSENSUS condition (the willingness of doctors to recommend Covid-19 vaccines to patients), to economize on time, since we expected this type of belief to be highly correlated with the other two about doctors' views (indeed, the pairwise correlation coefficient between Wave0 beliefs about doctors' trust and vaccination intentions is $r(2,099)=0.60$, $p<0.01$).

Supplementary Table 4. Demographic characteristics: summary statistics and randomization check for the fixed sample (Main Experiment).

	(1) Fixed sample	(2) CONTROL	(3) CONSENSUS	(4) P-value
Female	0.493	0.493	0.493	0.995
Age category				
age cat 18-24	0.026	0.03	0.021	0.325
age cat 25-34	0.09	0.089	0.091	0.875
age cat 35-44	0.134	0.139	0.13	0.664
age cat 45-54	0.179	0.176	0.182	0.757
age cat 55-64	0.21	0.216	0.204	0.604
age cat 65+	0.361	0.351	0.371	0.465
Household size	2.224	2.182	2.264	0.177
Number of children	0.38	0.375	0.384	0.482
Children missing	0.034	0.037	0.031	0.574
Region				
Prague	0.306	0.323	0.29	0.215
Central Bohemia	0.087	0.072	0.103	0.059
South Bohemia	0.037	0.038	0.036	0.809
Plzeň	0.041	0.042	0.041	0.924
Karlovy Vary	0.02	0.022	0.018	0.633
Ústí	0.066	0.067	0.065	0.903
Liberec	0.044	0.043	0.044	0.966
Hradec Králové	0.04	0.038	0.042	0.731
Pardubice	0.038	0.038	0.037	0.927
Vysočina	0.033	0.025	0.041	0.128
South Moravia	0.092	0.097	0.088	0.587
Olomouc	0.052	0.043	0.06	0.188
Zlín	0.036	0.04	0.033	0.482
Moravia-Silesia	0.106	0.11	0.103	0.661
Town size				
Below 999	0.061	0.043	0.078	0.012
1,000-1,999	0.029	0.023	0.034	0.262
2,000-4,999	0.05	0.052	0.049	0.812
5,000-19,999	0.106	0.107	0.106	0.948
20,000-49,999	0.073	0.06	0.085	0.100
50,000-99,999	0.18	0.187	0.173	0.507
Above 100,000	0.501	0.527	0.476	0.075
Education				
primary	0.033	0.028	0.037	0.379
lower secondary	0.257	0.244	0.269	0.327
upper secondary	0.379	0.403	0.355	0.085

university	0.332	0.324	0.339	0.596
Economic status				
Employee	0.453	0.453	0.453	0.989
Entrepreneur	0.046	0.042	0.05	0.472
Student	0.023	0.025	0.021	0.650
Parental leave	0.029	0.027	0.031	0.663
Retired	0.406	0.406	0.406	0.977
Unemployed	0.03	0.028	0.031	0.796
Other	0.013	0.018	0.008	0.118
Household income				
Up to 10,000 CZK	0.008	0.01	0.007	0.498
10,001 - 15,000 CZK	0.077	0.08	0.073	0.648
15,001 - 20,000 CZK	0.095	0.08	0.109	0.087
20,001 - 25,000 CZK	0.074	0.079	0.07	0.570
25,001 - 30,000 CZK	0.104	0.104	0.104	0.975
30,001 - 35,000 CZK	0.13	0.13	0.13	0.994
35,001 - 40,000 CZK	0.116	0.129	0.103	0.154
40,001 - 50,000 CZK	0.114	0.125	0.103	0.211
50,001 - 60,000 CZK	0.092	0.072	0.112	0.015
Over 60,000 CZK	0.079	0.065	0.093	0.075
I don't know / Don't want to say	0.111	0.125	0.096	0.104
Vaccine intention (Wave -1)	0.675	0.679	0.671	0.769
Vaccinated	0.087	0.097	0.078	0.246
Beliefs about doctors'				
Intentions to get vaccinated	57.135	58.564	55.744	0.044
Trust in Covid-19 vaccines	63.114	64.022	62.23	0.102
Observations	1,212	598	614	
Omnibus randomization test of joint significance for all variables above				
P-value				0.313

Notes: Same as Supplementary Table 3 but for the Fixed sample of participants responding to all Waves 0-11.

Supplementary Table 5. Timeline of the Main Experiment.

Panel A: Timing and observations													
Data collection start	Mar 1	Mar 15	Mar 29	Apr 12	May 03	May 24	Jun 21	Jul 19	Aug 23	Sep 27	Oct 11	Nov 8	Nov 29
Wave #	-1	0	1	2	3	4	5	6	7	8	9	10	11
Observations	1,970	2,101	1,940	1,939	1,896	1,860	1,792	1,620	1,770	1,745	1,734	1,611	1,851
Panel B: Data collected													
Beliefs (trust / take-up)		x	X										
CONSENSUS treatment		**x**											
Vaccinated	x	x	X	x	x	x	x	x	x	x	x	x	x
Vaccination intentions (if not vaccinated)	x	x	X	x	x	x	x	x	x	x	x	x	x
Booster dose intentions										x		x	x
Vaccination certificate verification													x
Third party verification (two weeks after Wave11)													x
Panel C: Vaccine registration eligibility	70+				55+	35+	16+	12+	12+	12+	12+	12+	12+
	medical workers		severely	social care workers									
	school employees		chronically ill	chronically ill	academic								

Notes: In Panel A, we report dates, wave order indicators, and numbers of participants. In Panel B, we report when the CONSENSUS treatment was implemented and which outcome variables were collected in each wave. See Supplementary Information for exact wording of questions and of the CONSENSUS treatment. In Panel C, we report the vaccination eligibility status of groups using the information from a government run website (https://covid.gov.cz/situace/registrace-na-ockovani/casova-osa-ockovani). We report eligibility status at the start of the data collection for a respective wave. Once a group becomes eligible, it remains eligible in subsequent waves. The only group for which the eligibility was withdrawn were school employees, on March 28, 2021. More details about the development of vaccine eligibility is in the Background section of the Supplementary Information.

Supplementary Table 6. Predictors of beliefs about doctors' intentions of getting a Covid-19 vaccine and about doctors' trust in the Covid-19 vaccine (Main Experiment).

	(1)	(2)
Dependent variable	Beliefs about doctors' […] Covid-19 vaccine	
	[intentions of getting a]	[trust in]
Female	0.855	0.443
	(0.997)	(0.921)
Age category		
age cat 25-34	-2.328	2.404
	(3.711)	(3.767)
age cat 35-44	-3.205	2.088
	(3.843)	(3.851)
age cat 45-54	-3.039	0.410
	(3.802)	(3.842)
age cat 55-64	-4.560	-0.240
	(3.918)	(3.895)
age cat 65+	-4.511	0.337
	(4.140)	(4.095)
Household size	-0.974	-1.165*
	(0.711)	(0.614)
Number of children	1.045	0.470
	(0.905)	(0.796)
Children missing	2.890	-1.863
	(2.050)	(1.948)
Region		
Central Bohemia	0.482	-0.387
	(2.333)	(2.090)
South Bohemia	-0.029	-3.919
	(2.642)	(2.596)
Plzeň	-0.379	-3.087
	(2.355)	(2.355)
Karlovy Vary	5.177	3.617
	(3.640)	(3.347)
Ústí	-3.653	-3.032
	(2.489)	(2.317)
Liberec	-0.754	-4.357*
	(2.721)	(2.484)
Hradec Králové	-3.980	-3.518
	(2.854)	(2.634)

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	(1)	(2)
Dependent variable	Beliefs about doctors' […] Covid-19 vaccine	
	[intentions of getting a]	[trust in]
[Table continues here]		
Pardubice	-0.717	-0.574
	(2.681)	(2.531)
Vysočina	-3.567	-4.288
	(3.052)	(2.614)
South Moravia	-2.054	-2.747
	(1.873)	(1.738)
Olomouc	-1.389	1.051
	(2.670)	(2.271)
Zlín	-1.682	-4.971*
	(2.750)	(2.671)
Moravia-Silesia	-2.162	-3.088*
	(1.834)	(1.634)
Town size		
1,000-1,999	-1.589	-0.500
	(3.081)	(2.839)
2,000-4,999	0.076	-0.213
	(2.650)	(2.332)
5,000-19,999	-1.518	-1.365
	(2.223)	(2.114)
20,000-49,999	-1.643	-0.183
	(2.559)	(2.368)
50,000-99,999	-1.459	-1.080
	(2.223)	(2.067)
Above 100,000	1.190	0.608
	(2.369)	(2.110)
Education		
lower secondary	-3.088	-0.935
	(2.410)	(2.420)
upper secondary	-2.739	1.888
	(2.356)	(2.335)
university	-2.013	3.766
	(2.458)	(2.394)

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	(1)	(2)
Dependent variable	Beliefs about doctors' […] Covid-19 vaccine	
	[intentions of getting a]	[trust in]
[Table continues here]		
Economic status		
Entrepreneur	4.385*	3.191
	(2.272)	(2.055)
Student	1.149	5.375
	(3.894)	(4.108)
Parental leave	-1.530	-2.402
	(2.563)	(2.283)
Retired	3.472**	4.344***
	(1.742)	(1.643)
Unemployed	-1.526	-1.614
	(2.827)	(2.646)
Other	-0.869	5.376
	(3.022)	(3.475)
Household income		
10,001 - 15,000 CZK	-2.108	1.522
	(5.469)	(4.333)
15,001 - 20,000 CZK	-1.455	0.891
	(5.356)	(4.093)
20,001 - 25,000 CZK	2.474	1.788
	(5.466)	(4.264)
25,001 - 30,000 CZK	3.061	5.214
	(5.348)	(4.102)
30,001 - 35,000 CZK	4.825	5.407
	(5.364)	(4.080)
35,001 - 40,000 CZK	4.450	8.227**
	(5.383)	(4.103)
40,001 - 50,000 CZK	3.929	8.783**
	(5.431)	(4.123)
50,001 - 60,000 CZK	6.049	9.984**
	(5.519)	(4.192)
Over 60,000 CZK	7.862	11.219***
	(5.564)	(4.275)
I don't know / Don't want to say	2.684	3.847
	(5.387)	(4.138)

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	(1)	(2)
Dependent variable	Beliefs about doctors' […] Covid-19 vaccine	
	[intentions of getting a]	[trust in]
[Table continues here]		
Vaccine intention (Wave -1)	10.626***	16.648***
	(1.074)	(1.018)
Vaccine intention (Wave -1) missing	0.962	9.438**
	(4.730)	(4.244)
Vaccinated	3.912**	4.872***
	(1.698)	(1.354)
Constant	53.719***	44.640***
	(7.099)	(6.013)
Observations	2,101	2,101
R-squared	0.105	0.243

Notes: OLS coefficients. Huber-White robust standard errors in parentheses. The dependent variable in Column 1 is the respondent's elicited belief about the percentage of doctors who would like to get vaccinated. The dependent variable in Column 2 is the respondent's elicited belief about the percentage of doctors who trust the approved Covid-19 vaccines. Both dependent variables range between 0 and 100. Wave0 full sample used. In both columns, the set of controls is the same as in Figure 3 except for the Wave0 belief measures, which are excluded. *p<0.10; **p<0.05; ***p<0.01.

Supplementary Table 7. Effect of the CONSENSUS condition on respondents' beliefs about doctors' intentions of getting a Covid-19 vaccine and about doctors' trust in the Covid-19 vaccine.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sample	Full	Fixed	Attentive	Underestimating	Overestimating	Prior intention: Not to get vaccinated	Prior intention: To get vaccinated
Panel A: Dependent variable Beliefs about doctors' trust in Covid-19 vaccines							
Linear probability model with pre-registered set of controls							
CONSENSUS	5.160***	4.768***	5.185***	5.840***	-1.707	7.572***	3.655***
	(0.862)	(1.048)	(0.871)	(0.915)	(1.613)	(1.741)	(0.958)
Observations	1,940	1,212	1,901	1,714	226	673	1,267
CONTROL mean	66.643	67.219	66.626	63.676	88.704	53.601	73.492
R-squared	0.233	0.250	0.236	0.218	0.292	0.132	0.080
Comparison chi-sq (p-value)				20.06 (0.000)		4.16 (0.041)	
Double-selection LASSO linear regression							
CONSENSUS	6.099***	5.407***	6.004***	6.955***	-1.043	8.464***	4.895***
	(0.710)	(0.857)	(0.716)	(0.775)	(1.536)	(1.417)	(0.776)
Comparison chi-sq (p-value)				21.83 (0.000)		4.90 (0.027)	
Panel B: Dependent variable Beliefs about doctors' intentions to get vaccinated against Covid-19							
Linear probability model with pre-registered set of controls							
CONSENSUS	6.461***	6.404***	6.432***	6.926***	0.559	7.801***	5.689***
	(0.921)	(1.159)	(0.930)	(0.947)	(2.996)	(1.706)	(1.103)
Observations	1,940	1,212	1,901	1,814	126	673	1,267
CONTROL mean	62.980	62.801	63.022	61.378	74.889	54.740	67.307
R-squared	0.138	0.142	0.141	0.148	0.415	0.117	0.091
Comparison chi-sq (p-value)				6.44 (0.011)		1.15 (0.283)	
Double-selection LASSO linear regression							
CONSENSUS	7.465***	7.247***	7.353***	7.324***	6.545**	8.480***	6.833***
	(0.824)	(1.029)	(0.830)	(0.881)	(2.618)	(1.447)	(1.008)
Comparison chi-sq (p-value)				6.72 (0.010)		0.88 (0.349)	

Notes: OLS coefficients. Huber-White robust standard errors in parentheses. The dependent variable in all columns of Panel A is the respondent's guess about the percentage of doctors who would like to get vaccinated. The dependent variable in all columns of Panel B is the respondent's guess about the percentage of doctors' who trust the approved Covid-19 vaccines. Both dependent variables range between 0 and 100 and were measured in Wave1. Column 1 uses the full sample. Column 2 uses a sample of respondents participating in all 11 waves. Column 3 restricts the full sample to respondents who passed all attention checks embedded in the survey. Columns 4 and 5 restrict the sample to respondents who underestimate or overestimate trust in the Covid-19 vaccines (Panel A) and doctors' intentions to get vaccinated (Panel B). Columns 6 and 7 restrict the sample to respondents without and with intentions to get vaccinated prior to Wave0, respectively. In all columns we use the pre-registered set of controls. Estimated coefficients from a double-selection LASSO linear regression (dsregress command in Stata 17), selected from a set of covariates in Supplementary Table 3, are reported at the bottom of each panel. Rows titled "Comparison" in each panel report a chi-square statistic and a p-value for a test of equivalence of coefficients across two respective models estimated using seemingly unrelated regressions (suest command in Stata 17). For LASSO selected controls, we use OLS models with controls selected by LASSO. *p<0.10; **p<0.05; ***p<0.01.

Supplementary Table 8. Effect of the CONSENSUS condition on respondents' vaccination intentions.

	(1)	(2)	(3)
Dependent variable		Vaccination intentions	
Sample	Full	Fixed	Attentive
Panel A: Wave 0			
Linear probability model with pre-registered set of controls			
CONSENSUS	0.026**	0.053***	0.029**
	(0.013)	(0.016)	(0.013)
Observations	2,101	1,212	2,009
CONTROL mean	0.642	0.657	0.646
R-squared	0.640	0.650	0.655
Double-selection LASSO linear regression			
	0.030**	0.057***	0.031**
	(0.013)	(0.016)	(0.013)
Panel B: Wave 1			
Linear probability model with pre-registered set of controls			
CONSENSUS	0.024*	0.048***	0.027**
	(0.013)	(0.017)	(0.013)
Observations	1,940	1,212	1,901
CONTROL mean	0.684	0.684	0.693
R-squared	0.615	0.618	0.619
Double-selection LASSO linear regression			
	0.028**	0.051***	0.028**
	(0.013)	(0.016)	(0.013)

Notes: OLS coefficients. Huber-White robust standard errors in parentheses. The dependent variable in all columns is an indicator for vaccination intentions, equal to 1 if the respondent reported already being vaccinated or registered for the vaccine, or being willing to get vaccinated. Column 1 uses the full sample. Column 2 uses a sample of respondents participating in all 11 waves. Column 3 restricts the full sample to respondents who passed all attention checks embedded in the survey. Panel A reports results for Wave0 responses. Panel B reports results for Wave1 responses. In all columns we use the pre-registered set of controls. Estimated coefficients from a double-selection LASSO linear regression (dsregress command in Stata 17) selecting from a set of covariates in Supplementary Table 3 are reported in the bottom parts of each panel. *p<0.10; **p<0.05; ***p<0.01.

Supplementary Table 9. Effect of the CONSENSUS condition on respondents' vaccination take-up.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dependent variable						Vaccinated					
Wave	1	2	3	4	5	6	7	8	9	10	11
Panel A: Full sample											
Linear probability model with pre-registered set of controls											
CONSENSUS	-0.031**	-0.004	0.002	0.009	0.019	0.040**	0.038**	0.037**	0.028*	0.038**	0.027*
	(0.014)	(0.016)	(0.018)	(0.018)	(0.018)	(0.018)	(0.017)	(0.017)	(0.017)	(0.018)	(0.016)
	[0.033]	[0.784]	[0.904]	[0.623]	[0.291]	[0.029]	[0.033]	[0.033]	[0.093]	[0.023]	[0.088]
Observations	1,940	1,939	1,896	1,860	1,792	1,620	1,771	1,745	1,734	1,611	1,801
CONTROL mean	0.152	0.178	0.339	0.539	0.667	0.700	0.727	0.736	0.747	0.754	0.771
R-squared	0.168	0.194	0.371	0.447	0.355	0.354	0.333	0.334	0.350	0.330	0.316
Double-selection LASSO linear regression											
	-0.012	0.005	0.012	0.018	0.027	0.047***	0.046***	0.045***	0.039**	0.049***	0.037**
	(0.010)	(0.012)	(0.016)	(0.017)	(0.018)	(0.018)	(0.017)	(0.017)	(0.017)	(0.017)	(0.016)
Panel B: Fixed sample											
Linear probability model with pre-registered set of controls											
CONSENSUS	-0.028	-0.008	-0.003	0.018	0.037*	0.046**	0.057***	0.054***	0.060***	0.053***	0.044**
	(0.019)	(0.021)	(0.023)	(0.022)	(0.022)	(0.021)	(0.020)	(0.020)	(0.020)	(0.020)	(0.019)
	[0.149]	[0.687]	[0.889]	[0.424]	[0.092]	[0.032]	[0.010]	[0.003]	[0.002]	[0.006]	[0.018]
Observations	1,212	1,212	1,212	1,212	1,212	1,212	1,212	1,212	1,212	1,212	1,212
CONTROL mean	0.157	0.189	0.362	0.557	0.677	0.714	0.731	0.741	0.741	0.754	0.776
R-squared	0.166	0.197	0.352	0.439	0.375	0.378	0.372	0.359	0.370	0.363	0.354
Double-selection LASSO linear regression											
	-0.012	0.006	0.008	0.030	0.045**	0.054***	0.064***	0.062***	0.070***	0.063***	0.052***
	(0.013)	(0.016)	(0.022)	(0.022)	(0.021)	(0.020)	(0.020)	(0.020)	(0.019)	(0.019)	(0.019)

Notes: OLS coefficients. Huber-White robust standard errors in parentheses. Randomization inference p-values in square brackets (ritest command in Stata). The dependent variable in all columns is an indicator for vaccination take-up, equal to 1 if the respondent reported having obtained at least one dose of a vaccine against Covid-19. Panel A uses the full sample. Panel B uses a sample of respondents participating in all 11 waves. Columns report results for each wave separately (Wave1 in Column 1 to Wave11 in Column 11). In all columns we use the pre-registered set of controls. Estimated coefficients from a double-selection LASSO linear regression (dsregress command in Stata 17) selecting from a set of covariates in Supplementary Table 3 are reported in the bottom parts of each panel. *p<0.10; **p<0.05; ***p<0.01.

Supplementary Table 10. Effect of the CONSENSUS condition on respondents' vaccination take-up: Robustness.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable						Vaccinated				
Waves 6-11										
Panel A: Full sample										
CONSENSUS	0.036*	0.037**	0.037**	0.037**	0.039**	0.036**	0.035**	0.042***	0.042***	0.044***
	(0.019)	(0.019)	(0.019)	(0.019)	(0.018)	(0.018)	(0.015)	(0.015)	(0.015)	(0.015)
Observations	10,282	10,282	10,282	10,282	10,282	10,282	10,282	10,282	10,282	10,282
CONTROL mean	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740	0.740
R-squared	0.004	0.050	0.052	0.074	0.092	0.115	0.333	0.356	0.356	
Panel B: Fixed sample										
CONSENSUS	0.050**	0.047**	0.047**	0.048**	0.047**	0.044**	0.052***	0.059***	0.059***	0.061***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.022)	(0.022)	(0.019)	(0.018)	(0.018)	(0.018)
Observations	7,272	7,272	7,272	7,272	7,272	7,272	7,272	7,272	7,272	7,272
CONTROL mean	0.743	0.743	0.743	0.743	0.743	0.743	0.743	0.743	0.743	0.743
R-squared	0.006	0.043	0.047	0.081	0.103	0.129	0.364	0.388	0.388	
Specification										
Pre-registered set of controls	No	No	No	No	No	No	YES	No	No	No
Double-selection LASSO linear regression	No	No	No	No	No	No	No	No	No	YES
Controls										LASSO selected:
Wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Gender	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Age	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes^{+}
Household size	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Children	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Region	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Town size	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No
Education	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No
Economic status	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Household income	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Prior vaccination intentions	No	No	No	No	No	No	Yes	Yes	Yes	Yes
Prior beliefs about doctors	No	No	No	No	No	No	No	Yes	Yes	Yes
Prior vaccination status	No	No	No	No	No	No	No	No	Yes	Yes

Notes: OLS coefficients. Standard errors clustered at the respondent level in parentheses. The dependent variable in all columns is an indicator for vaccination take-up, equal to 1 if the respondent reported having obtained at least one dose of a vaccine against Covid-19. Panel A uses the full sample. Panel B uses a sample of respondents participating in all 11 waves. We use data on the take up from Waves 6-11 when vaccines were available for all adults. Columns 1-9 report results from regressions by adding sets of controls as indicated in the bottom part of the table. The categories correspond to controls as presented in Supplementary Table A3. Column 7 uses the pre-registered set of controls. Column 10 reports results from a double-selection LASSO linear regression model (dsregress command in Stata 17) selecting from a set of covariates in Supplementary Table 3, reported in the bottom parts of each panel. The categories from which LASSO selected controls are indicated by "Yes". $^{+}$LASSO selected age to be included among control variables for the estimates for the full sample (but not for the fixed sample). All columns include wave fixed effects. *p<0.10; **p<0.05; ***p<0.01.

Supplementary Table 11. Effect of the CONSENSUS condition on respondents' vaccination take-up: difference-in-differences estimation.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Vaccinated					
Sample	Full	Full	Full	Fixed	Fixed	Fixed
Waves 0, and 6-11						
CONSENSUS x Wave 6-11	0.056***	0.054***	0.055***	0.069***	0.070***	0.070***
	(0.021)	(0.021)	(0.021)	(0.025)	(0.023)	(0.023)
Wave 6-11	0.648***	0.639***	0.639***	0.651***	0.629***	0.631***
	(0.015)	(0.015)	(0.015)	(0.018)	(0.017)	(0.017)
CONSENSUS	-0.019	-0.020	-0.009	-0.019	-0.019	-0.008
	(0.012)	(0.014)	(0.011)	(0.012)	(0.014)	(0.011)
Controls	No	Pre-registered	LASSO	No	Pre-registered	LASSO
Observations	12,383	12,383	12,383	9,373	9,373	9,373
R-squared	0.282	0.482		0.347	0.533	

Notes: OLS coefficients. Standard errors clustered at the respondent level in parentheses. The dependent variable in all columns is an indicator for vaccination take-up, equal to 1 if the respondent reported having obtained at least one dose of a vaccine against Covid-19. Wave 6-11 is an indicator equal to 1 if the observation is from Wave 6 - 11. CONSENSUS x Wave 6-11 is an interaction term of interest in the difference in differences specification. Columns 1-3 use the full sample. Columns 4-6 use a sample of respondents participating in all 11 waves. We use data on take up from Waves 6-11 when vaccines were available for all adults and the baseline data on take up is from Wave 0. Columns 1 and 4 use no additional controls. Columns 2 and 5 use the pre-registered set of controls. Columns 3 and 6 report coefficients from a double-selection LASSO linear regression (dsregress command in Stata 17) selecting from a set of covariates in Supplementary Table 3. *p<0.10; **p<0.05; ***p<0.01.

Supplementary Table 12. Effect of the CONSENSUS condition on respondents' vaccination take-up: additional results.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Dependent variable	Vaccinated										
Sample	Full	Fixed	Imputation from below	Imputation from above	Attentive	Underestimating trust	Overestimating trust	Underestimating take-up	Overestimating take-up	Prior intention: Not to get vaccinated	Prior intention: To get vaccinated
Waves 6-11											
Linear probability model with pre-registered set of controls											
CONSENSUS	0.035**	0.052***	0.028*	0.030*	0.035**	0.037**	0.018	0.040**	-0.027	0.077**	0.016
	(0.015)	(0.019)	(0.015)	(0.015)	(0.015)	(0.017)	(0.020)	(0.016)	(0.039)	(0.038)	(0.013)
	[0.006]	[0.009]	[0.082]	[0.060]	[0.030]	[0.044]	[0.427]	[0.016]	[0.594]	[0.050]	[0.013]
Wave FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,282	7,272	12,606	11,361	9,900	9,061	1,221	9,598	684	3,506	6,776
CONTROL mean	0.740	0.743	0.688	0.740	0.743	0.708	0.971	0.724	0.948	0.393	0.920
R-squared	0.333	0.364	0.347	0.327	0.341	0.321	0.430	0.338	0.471	0.074	0.078
Comparison chi-sq (p-value)						0.55 (0.458)		2.67 (0.102)		11.37 (0.001)	
Double-selection LASSO linear regression											
CONSENSUS	0.044***	0.061***	0.038**	0.040***	0.044***	0.048***	0.007	0.048***	-0.068	0.090**	0.020
	(0.015)	(0.018)	(0.015)	(0.015)	(0.015)	(0.017)	(0.020)	(0.016)	(0.046)	(0.036)	(0.014)
Comparison chi-sq (p-value)						2.37 (0.124)		5.66 (0.017)		3.32 (0.069)	

Notes: OLS coefficients. Standard errors clustered at the respondent level in parentheses. Randomization inference p-values in square brackets (ritest command in Stata). The dependent variable in all columns is an indicator for vaccination take-up, equal to 1 if the respondent reported having obtained at least one dose of a vaccine against Covid-19. Wave 6-11 sample used. Column 1 uses the full sample. Column 2 uses a sample of respondents participating in all 11 waves. Column 3 imputes missing vaccination take-up data by using the latest vaccination status in an earlier wave for each missing wave. Column 4 imputes missing vaccination take-up data by using the first reported vaccination status in a non-missing subsequent wave. Column 5 restricts the full sample to respondents who passed all attention checks embedded in the survey. Columns 6 and 7 restrict the sample to respondents underestimating and overestimating trust in the Covid-19 vaccines, respectively. Columns 8 and 9 restrict the sample to respondents underestimating and overestimating doctors' intentions to get vaccinated, respectively. Columns 10 and 11 restrict the sample to respondents without and with intentions to get vaccinated prior to Wave0, respectively. In all columns we use the pre-registered set of controls. All columns include wave fixed effects. Estimated coefficients from a double-selection LASSO linear regression (dsregress command in Stata 17) selecting from a set of covariates in Supplementary Table 3 are reported in the bottom part of the panel. Rows titled "Comparison" in each panel report a chi-square statistic and a p-value for a test of equivalence of coefficients across two respective models estimated using seemingly unrelated regressions (suest command in Stata 17). For LASSO selected controls, we use OLS models with controls selected by LASSO. *p<0.10; **p<0.05; ***p<0.01.

Supplementary Table 13. Respondent attrition by round.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dependent variable					Participation in wave…							
	1	2	3	4	5	6	7	8	9	10	11	1-11
CONSENSUS	0.001	-0.006	0.003	0.010	0.007	-0.005	0.003	-0.010	0.005	0.011	0.008	0.014
	(0.012)	(0.012)	(0.013)	(0.014)	(0.015)	(0.018)	(0.016)	(0.016)	(0.017)	(0.018)	(0.014)	(0.022)
Observations	2,101	2,101	2,101	2,101	2,101	2,101	2,101	2,101	2,101	2,101	2,101	2,101
CONTROL mean	0.923	0.926	0.901	0.880	0.850	0.774	0.841	0.835	0.823	0.761	0.877	0.574
R-squared	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Omnibus test for a joint effect of interaction terms of CONSENSUS with pre-specified set of controls												
P-value	0.629	0.958	0.332	0.734	0.521	0.804	0.159	0.326	0.113	0.174	0.811	0.851

Notes: OLS coefficients. Huber-White robust standard errors in parentheses. The dependent variable is an indicator for whether a respondent participated in a respective wave (Wave1 in Column 1 to Wave11 in Column 11, participation in all waves in Column 12). The omnibus randomization test of joint significance presents a p-value of an F-test for joint significance of a sum of coefficients for the CONSENSUS condition and of all interactions of pre-specified controls with CONSENSUS in an OLS regression, with participation in a respective wave as a dependent variable and CONSENSUS, pre-specified set of controls, and interaction terms of CONSENSUS and pre-specified set of controls as independent variables. *p<0.10; **p<0.05; ***p<0.01.

Supplementary Table 14. Third party and certificate verification.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Observations	Response rate relative to Wave11 sample			Verification rate for self-reported vaccinated			Verification rate for self-reported unvaccinated		
		CONSENSUS	CONTROL	chi-sq (p-value)	CONSENSUS	CONTROL	chi-sq (p-value)	CONSENSUS	CONTROL	chi-sq (p-value)
Panel A: Third party verification	1672	0.938	0.923	1.52 (0.218)	0.999	0.998	0.002 (0.967)	0.964	0.935	1.52 (0.218)
Panel B: Certificate verification	1364	0.960	0.970	0.99 (0.318)	0.941	0.949	0.473 (0.492)			

Notes: Column 1 reports observations for those who participated in wave 11 and [Panel A: participated in the third party verification, Panel B: reported being vaccinated with at least one dose of a vaccine against Covid-19]. Sample means in columns 2, 3, 5, 6, 8, 9. Columns 4, 7, and 10 report Pearson's chi-squared test F-statistic and a corresponding p-value in parentheses. Supplementary Information Section 3.4 describes both verification methods.

Supplementary Table 15. Effects of the CONSENSUS condition on take-up: More detailed analysis, based on whether vaccination status verified (ordered and multinomial logit).

	(1)	(2)	(3)	(4)	(5)	(6)
Specification		Ordered logit			Multinomial logit	
Verification	Third party verification	Certificate verification	Third party OR certificate verification	Third party verification	Certificate verification	Third party OR certificate verification
Dependent variable			Vaccinated			
Waves 6-11, Effects of CONSENSUS on the prevalence of the following categories						
Vaccinated, verified	0.048***	0.034**	0.038**	0.038**	0.030*	0.038**
	(0.017)	(0.017)	(0.016)	(0.016)	(0.018)	(0.016)
	[0.004]	[0.045]	[0.016]	[0.019]	[0.093]	[0.019]
Vaccinated, not verified	-0.005***	-0.005**	-0.002**	-0.000	0.008	-0.000
	(0.002)	(0.002)	(0.001)	(0.007)	(0.012)	(0.007)
	[0.006]	[0.047]	[0.021]	[0.993]	[0.520]	[0.993]
Not vaccinated	-0.043***	-0.030**	-0.036**	-0.038**	-0.038**	-0.038**
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
	[0.004]	[0.045]	[0.016]	[0.014]	[0.014]	[0.014]

Notes: Marginal effects for ordered logit (Columns 1-3) and multinomial logit (Columns 4-6) estimates. Delta-method standard errors in parentheses. P-values in square brackets. The dependent variable in all columns is a variable for vaccination take-up. The variable equals to 2 if the respondent reported having obtained at least one dose of a vaccine against Covid-19 and the self-report has been verified with either of the verification methods (See Supplementary Information Section 3.4 for more details on verification). It equals to 1 if the respondent reported having obtained at least one dose of a vaccine against Covid-19 but this has not been verified. It equals to 0 if the respondent reported not having obtained any vaccine against Covid-19. Full sample used. In all columns we use the pre-registered set of controls. All columns include wave fixed effects. Standard errors are clustered at an individual level. *p<0.10; **p<0.05; ***p<0.01.

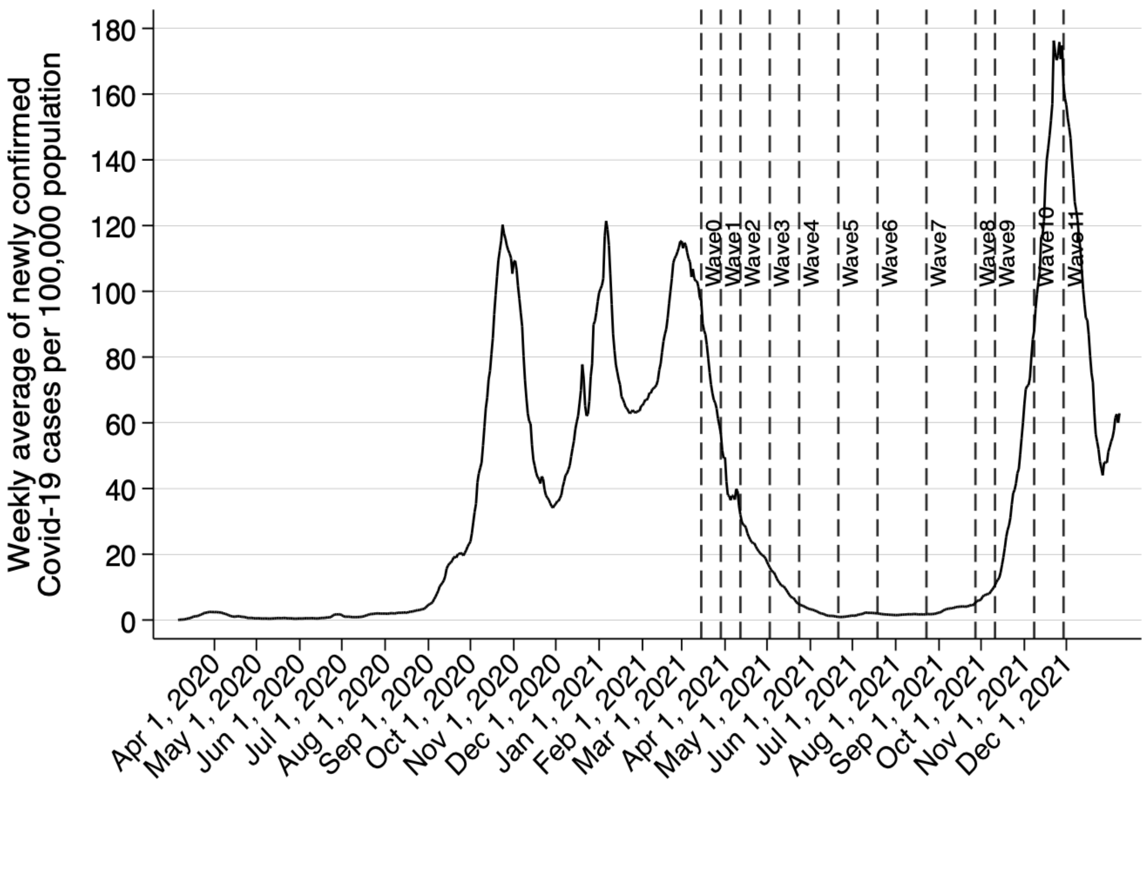
3 Supplementary Methods

3.1 Background: The Covid-19 pandemic in the Czech Republic

The Czech Republic is a landlocked country in Central Europe, bordering Germany, Austria, Slovakia, and Poland. The population is around 10.7 million. The Czech Republic is a parliamentary democracy and it joined the EU in 2004. The 2018 GDP per capita (PPP) was around USD 40,000 (or 90.6% of the EU average).

The population of the Czech Republic was strongly impacted by the Covid-19 pandemic. Up to December 2021, there were four major waves of the disease, during which 21% of the population has been officially confirmed to have been infected with Covid-19, with many more undetected cases likely. More than 33 thousand people (approximately 0.3% of the total population) have died of Covid-19, resulting in the Czech Republic's ranking among the ten worst countries in the world as measured by deaths per 100,000 population (Johns Hopkins University, Coronavirus Resource Center).

We use data from twelve waves of longitudinal data collection. The information intervention was implemented in Wave 0, which took place in mid-March 2021, shortly after the peak of the third wave of Covid-19. The situation then gradually improved during Waves 2-5 (March-June 2021), and became relatively calm during Waves 6-9 (July-October 2021). The last two Waves 10-11 took place during the fourth wave of Covid-19 (November 2021). Supplementary Figure 4 displays the development of the Covid-19 situation measured by the number of newly confirmed cases and the timing of the twelve waves of data collection.



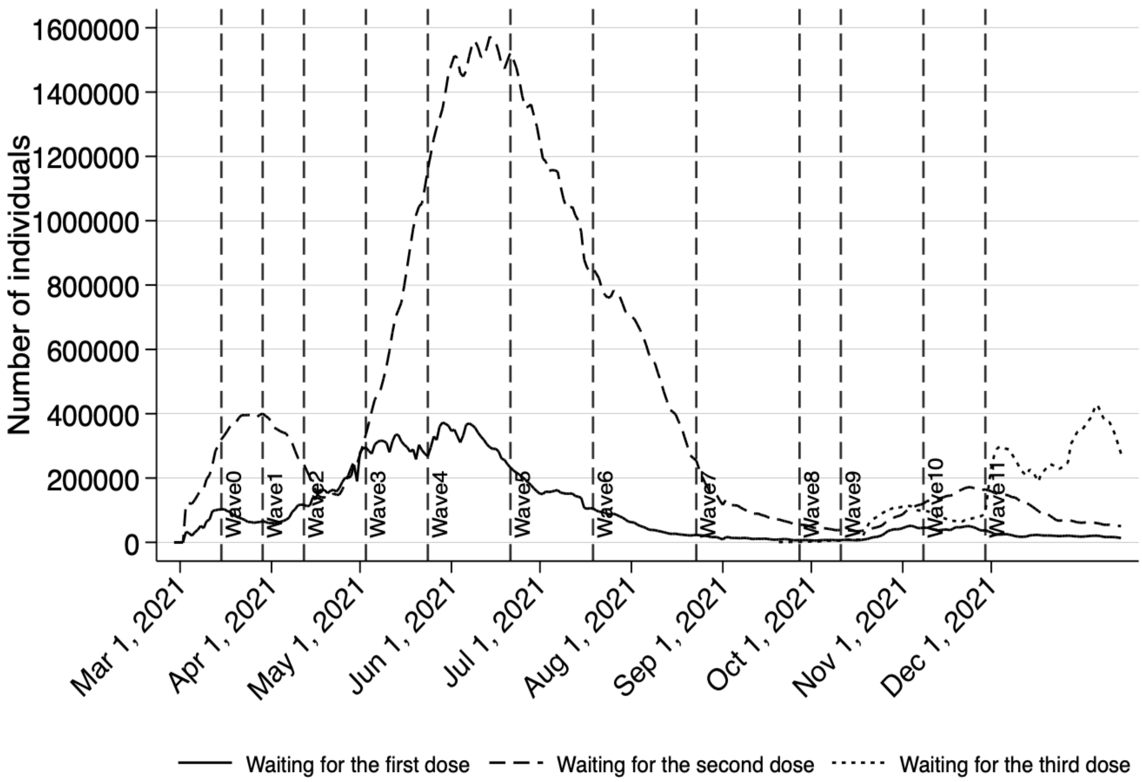
Supplementary Figure 4. Weekly average of newly confirmed Covid-19 cases per 100,000 population. Case data source: The Czech Ministry of Health (https://onemocneni-aktualne.mzcr.cz/api/v2/covid-19/osoby.csv, Accessed on January 12, 2022). Population data source: The Czech Statistical Office (https://www.czso.cz/csu/czso/obyvatelstvo-podle-petiletych-vekovych-skupin-a-pohlavi-v-krajich-a-okresech, Accessed on January 12, 2022).[1]

Vaccination. The Covid-19 vaccine rollout in the Czech Republic was launched in January 2021. It began with those considered the most vulnerable and later expanded by age and other groups. Specific groups could register in the reservation system on:

- January 15, 2021: persons 80 and older
- January 26, 2021: healthcare professionals
- February 27, 2021: school staff
- March 1, 2021: persons 70 and older
- March 24, 2021: persons with severe chronic diseases
- March 29, 2021: critical infrastructure staff
- April 7, 2021: social services staff
- April 12, 2021: persons with less severe chronic diseases
- April 14, 2021: persons 65 and older
- April 23, 2021: persons 60 and older
- April 28, 2021: persons 55 and older
- May 3, 2021: university academic staff and people caring for a dependent person
- May 5, 2021: persons 50 and older
- May 11, 2021: persons 45 and older
- May 17, 2021: persons 40 and older
- May 24, 2021: persons 35 and older
- May 26, 2021: persons 30 and older
- June 4, 2021: persons 16 and older
- July 1, 2021: persons 12 and older
- December 13, 2021: persons 5 and older

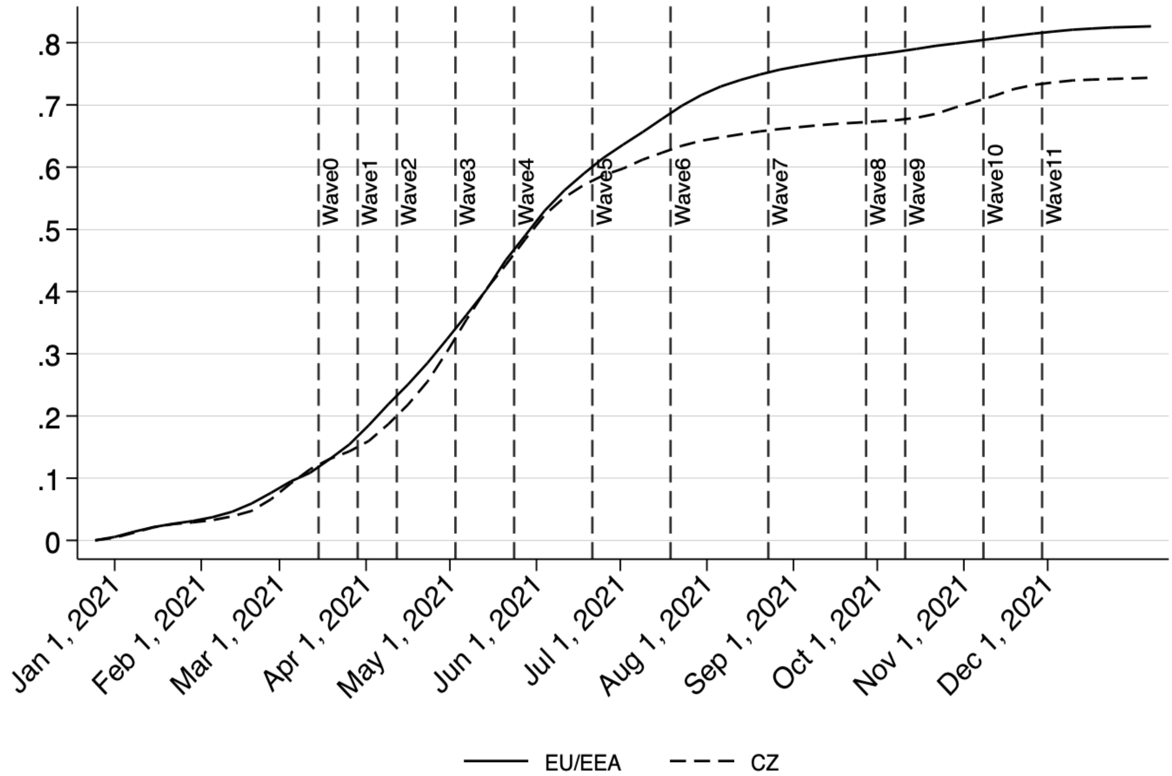
In early stages of vaccination, accessing a vaccine was rather difficult because supplies were limited and demand was high. Registered persons typically had to wait several weeks for a vaccination. The situation gradually improved, and during the summer it became relatively easy to get vaccinated. Supplementary Figure 5 displays a timeline of the numbers of people waiting for their first and second doses.

In our analysis, we report as the main results the estimates of the effect of the CONSENSUS condition on vaccine take-up in Waves 6-11, i.e. in the period July-November 2021. During this period, as described above, the vaccine was easily available for the whole adult population. We do not include Wave 5 into these estimates, which was launched on June 21, 2021, i.e. 17 days after the registration for vaccination was open for all adults. It is unlikely that everyone interested in vaccination could get the first dose of the vaccine since there was still a significant waiting time to obtain the vaccine at that time.



Supplementary Figure 5. Timeline of the numbers of people waiting for their first, second and third doses. The solid, dashed and dotted lines represent the number of Czechs waiting for their first, second and third dose, respectively. Source: open data from the Czech Ministry of Health (https://ockovani.opendatalab.cz/statistiky#queue_graph, Accessed on January 12, 2022)[1] and https://ockovani.opendatalab.cz/, ISSN 2787-9925 - http://aleph.techlib.cz/F/?func=direct&doc_number=000017426&local_base=STK02 (Accessed on January 12, 2022).

As compared to other countries in Europe, at the beginning of December 2021, at 73.8.7%, the adult uptake rate of at least the first dose in the Czech Republic was somewhat lower that the average adult uptake in the 30 countries of the European Economic Area (83.2%). The development of vaccination rates over time has also been somewhat slower in the Czech Republic than in the EEA overall (Supplementary Figure 6).



Supplementary Figure 6. Cumulative fraction of adult (18+) EU/EEA and Czech population receiving at least one dose of Covid-19 vaccines by reporting week. Data source: European Centre for Disease Prevention and Control (https://www.ecdc.europa.eu/en/publications-data/data-covid-19-vaccination-eu-eea, Accessed on January 12, 2022).

3.2 Survey among Czech medical doctors: Additional information

Together with the Czech Medical Chamber (CMC), we administered a survey via email to all members of the CMC who communicate with the organization electronically (70%). All medical doctors are obliged to be members of the CMC by the Czech law. Data collection took place between February 11 and 24, 2021. The median duration of the survey was 4 minutes. We used the online Qualtrics platform for data collection.

The survey link was opened by 11,655 respondents. Of these, 1,164 answered that they do not currently work in healthcare, 83 workers in healthcare answered that they are not medical doctors, and 92 answered that they do not work in the Czech Republic. We excluded these respondents from the analysis. 666 respondents did not complete the survey. In the analysis, we work with a sample of 9,650 medical doctors, which is 24% of the doctors surveyed.

The wording of the survey module is as follows (translated from original Czech):

Introduction and informed consent: Hello, we would like to ask you for 4 minutes of your time to fill out a short online survey. The survey focuses on the attitudes of Czech medical doctors on the topic of anti-epidemic measures against the spread of SARS-CoV-2 and Covid-19, specifically on vaccination. The questionnaire was created in cooperation with the “Doctors Help the Czech Republic” initiative, the "Snow" initiative, and the Faculty of Economics at the University of Munich (Ludwig-Maximilians-Universität München). The survey is sponsored by the Czech Medical Chamber (CMC).
All information provided in the survey is completely anonymous. The results will be presented only in aggregate (i.e. it will not be possible to identify you as an individual). We therefore ask for your honest answers. You can close the survey at any time by closing the browser window so that your data is not recorded. By pressing the "Continue" button, you confirm that you have read this text and agree to your participation in the survey. Thank you very much for your time. [Continue]

1. Do you currently work in healthcare? (If you are on maternity or parental leave and have a healthcare contract, answer Yes. [Yes / No]
   Skip To: End of Survey if [No]
2. Gender [Male / Female / Other]
3. What age category do you belong to? [18–24 / 25–34 / 35–44 / 45-54 / 55–64 / 65 or more]
4. Are you a…? [doctor / nurse / brother / another healthcare worker]
5. Do you work mainly in a … health facility? [state / non-state]
6. Medical field [General Practice / Dentistry / Internal Medicine / Other]
7. How many years have you worked in healthcare? [1-5 years / 6-10 years / 11-20 years / More than 20 years]
8. The size of the municipality in which your workplace is located [Less than 999 inhabitants / 1,000–1,999 inhabitants / 2,000-4,999 inhabitants / 5,000–19,999 inhabitants / 20,000-49,999 inhabitants / 50,000-99,999 inhabitants / Over 100,000 inhabitants]
9. The region in which your workplace is located [Prague / Central Bohemian Region / South Bohemian Region / Pilsen / Karlovy Vary / Ústí nad Labem / Liberec / Hradec Králové / Pardubice Region / Vysočina Region / South Moravian Region / Olomouc / Moravskoslezký / Zlínský / I work outside the Czech Republic]

We would now like to ask you a few questions on anti-epidemiological measures against the spread of SARS-CoV-2 and Covid-19, specifically on vaccination.

10. Have you contracted Covid-19? [Yes, multiple times / Yes, once / Ne / I'm not sure]
11. Is application of vaccines a part of your job? [Yes / No]
12. How well do you feel informed about the Covid-19 vaccines that have undergone the European Medicines Agency (EMA) approval process? [I am actively searching for information, or I have searched for it, I have enough information / I am actively searching for information, or I have searched for it, but I do not have enough of it / I am not actively searching for information, nor have I searched for it]
13. Will you personally be interested in getting vaccinated, voluntarily, and free of charge, with an approved vaccine against Covid-19? [Yes / No / I'm not sure / I have already been vaccinated]
14. *Display if response to previous question [No / I'm not sure]:* Why will you not get vaccinated against Covid-19, or why do you hesitate? [*Select multiple*: I am worried about side effects / I am not afraid of coronavirus infection / In general, I do not trust vaccination / I do not believe in meaningfulness if the vaccination is not widespread / I wouldn't want to see a doctor because of that / I trust the ability of the immune system to fight Covid-19 / I am concerned because of the information from the media, social networks, etc. / Other reason]
15. Do you trust Covid-19 vaccines that have been approved by the European Medicines Agency (EMA) approval process? [Yes, at least one of the vaccines / No / I'm not sure.]
16. Display if response to previous question [No / I'm not sure]: Why don't you trust EMA-approved vaccines? [Select multiple: Vaccine development was too fast / The vaccine approval process was too fast / I am worried about side effects / In general, I do not trust vaccination / Covid-19 is not such a serious disease that people need to be vaccinated against it / Covid-19 does not actually exist / I trust the ability of the immune system to fight Covid-19 / I am concerned because of the information from the media, social networks, etc. / Other reason]
17. Will you recommend Covid-19 vaccination to your healthy patients to whom you would recommend other commonly used vaccines? [I will actively recommend it even without being asked / I will recommend it when asked / I will not recommend it when asked / I will actively not recommend it even without being asked]
18. Do you think it is right to vaccinate as many people as possible against Covid-19? [Yes / No / I'm not sure]
19. If response to question "Is application of vaccines a part of your job?" [Yes]: You have indicated that vaccination is part of your job. If a Covid-19 vaccine is available in your practice, will you be actively involved in this vaccination? [Yes / No / I'm not sure]
20. *If response to previous question [No / I'm not sure]:* You stated that: In your practice you are vaccinating and at the same time that you are not convinced whether you would be involved in the vaccination campaign against Covid-19. Can you briefly describe your reasons for this attitude? [Open text]
21. How effective do you think the Pfizer / BioNTech vaccine currently used in the Czech Republic is? (In percent) *[Hint: 0% will not protect anyone who is vaccinated 100% will protect everyone who is vaccinated]*
22. And the last question: What do you think will be the side effects of the Pfizer / BioNTech vaccine? [Milder than commonly used vaccines / Similar to commonly used vaccines / More severe than commonly used vaccines / Much more serious than commonly used vaccines / I'm not sure]

3.3 Main experiment: CONSENSUS treatment wording

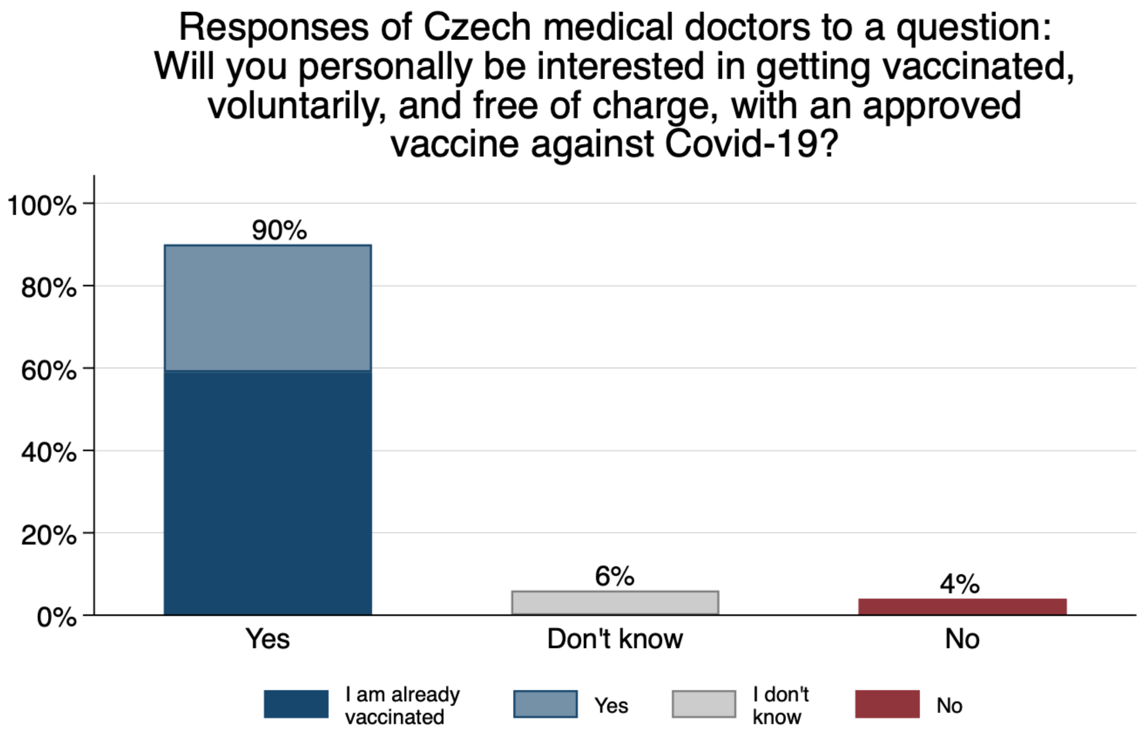
The wording of the CONSENSUS treatment is as follows:

Treatment group: 4 slides with text (restriction to minimum of 5 seconds on each page)

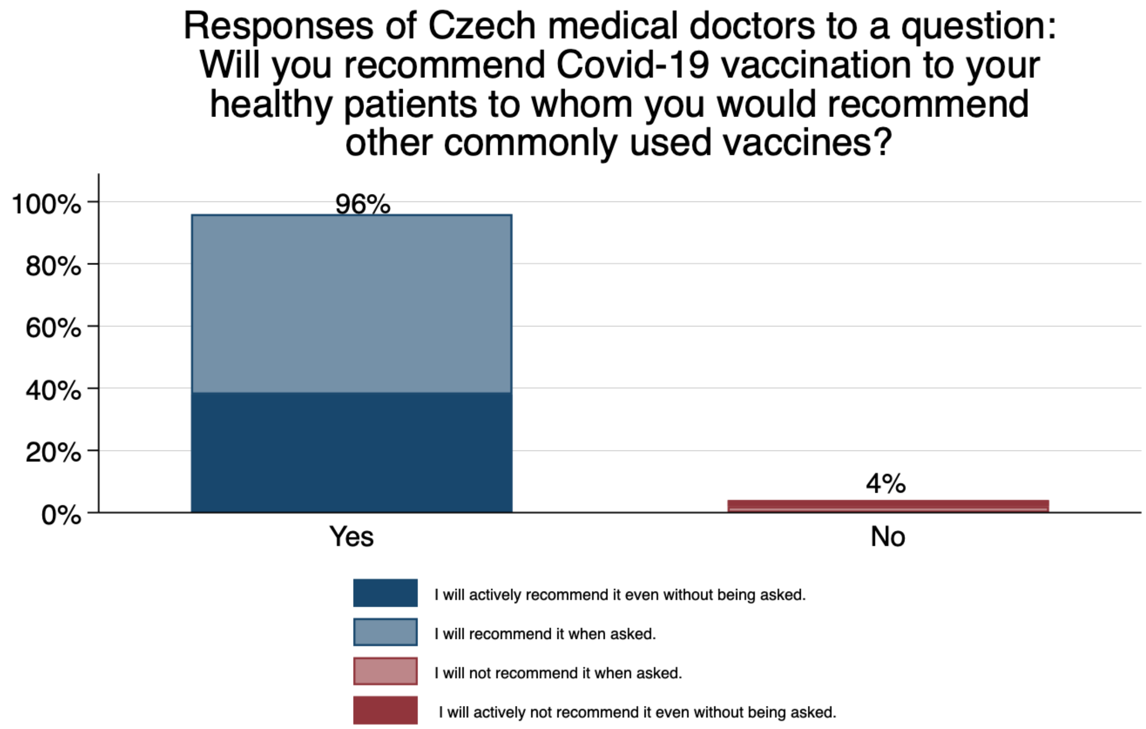
Translation to English from the original Czech version

Slide 1: In recent weeks, the Czech Medical Chamber conducted a survey among all medical doctors in the Czech Republic regarding vaccination. Almost 10,000 medical doctors from all parts of the country, from small and large municipalities, and from all age categories responded to the survey. We would like to share the results with you. The results do not differ across different groups of physicians.

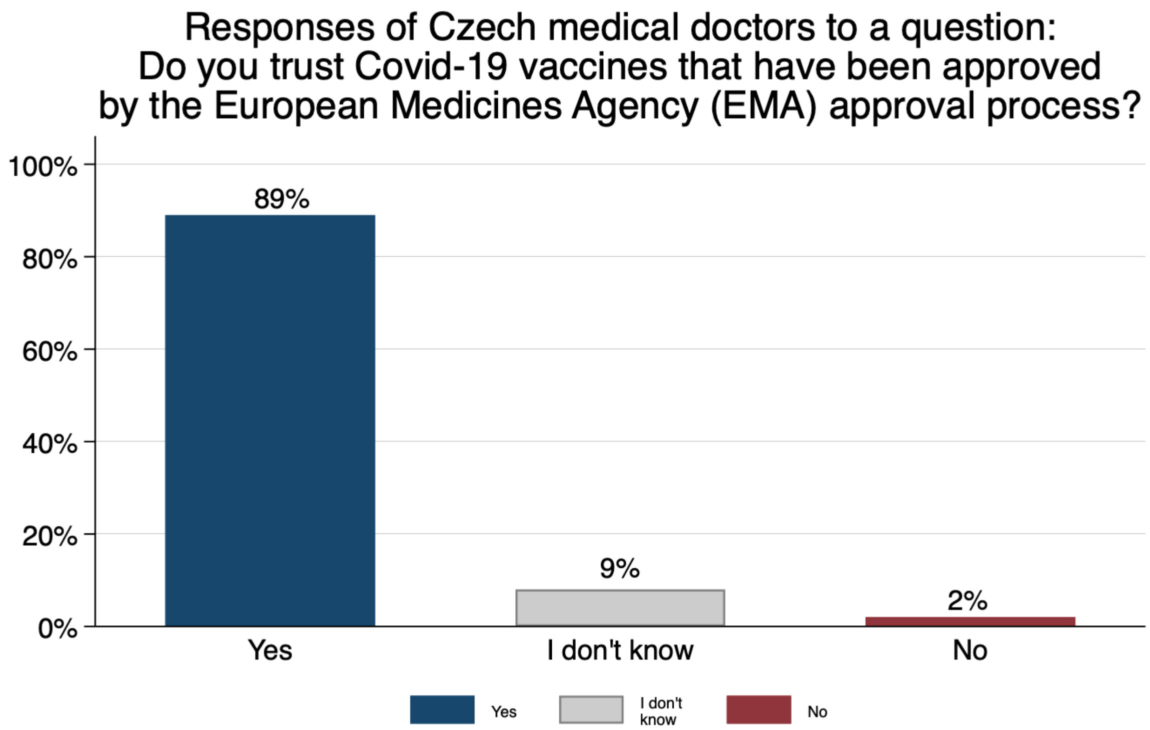
Slide 2: The interest of Czech medical doctors in vaccination against Covid-19 is large. 90% of medical doctors are already vaccinated or are interested in getting vaccinated. Only 4% of doctors would not get vaccinated.



Slide 3: Most Czech medical doctors would recommend vaccination against Covid-19 to their healthy patients. 96% of physicians would recommend vaccination to their healthy patients either on their own initiative or if their patients ask for their opinion.



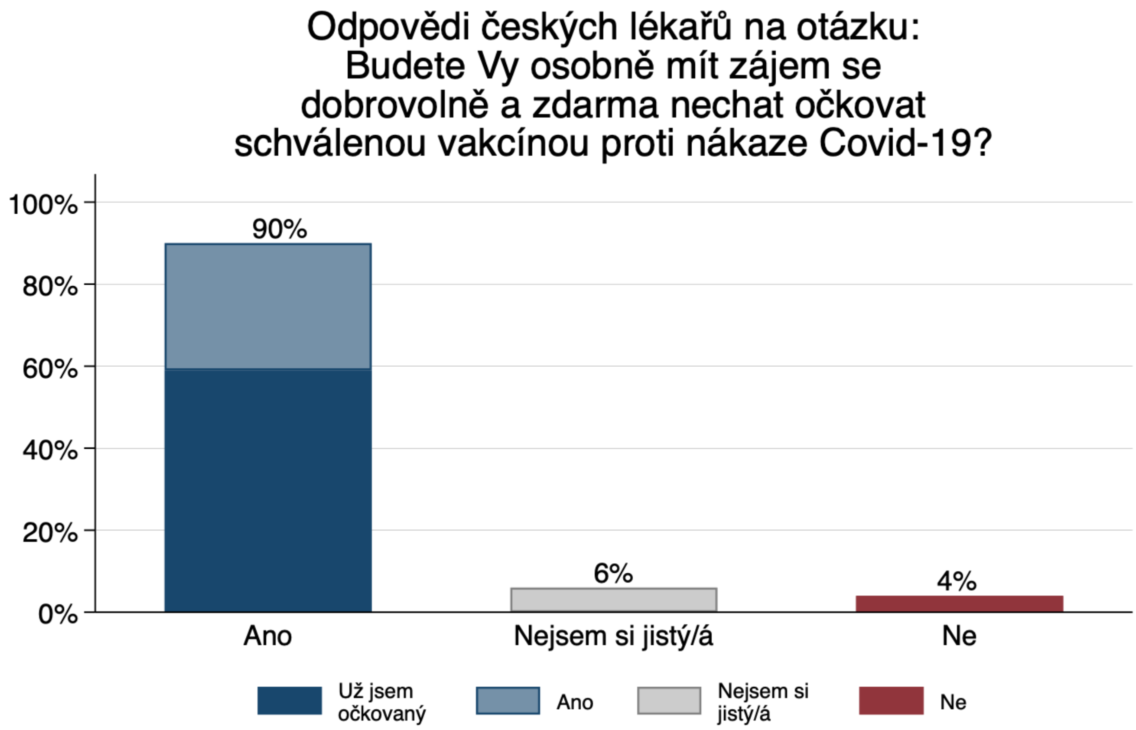
Slide 4: Czech medical doctors' trust in Covid-19 vaccines is strong. 89% of doctors trust vaccines approved by the European Medicines Agency. Only 2% of doctors do not trust them.



Original Czech version

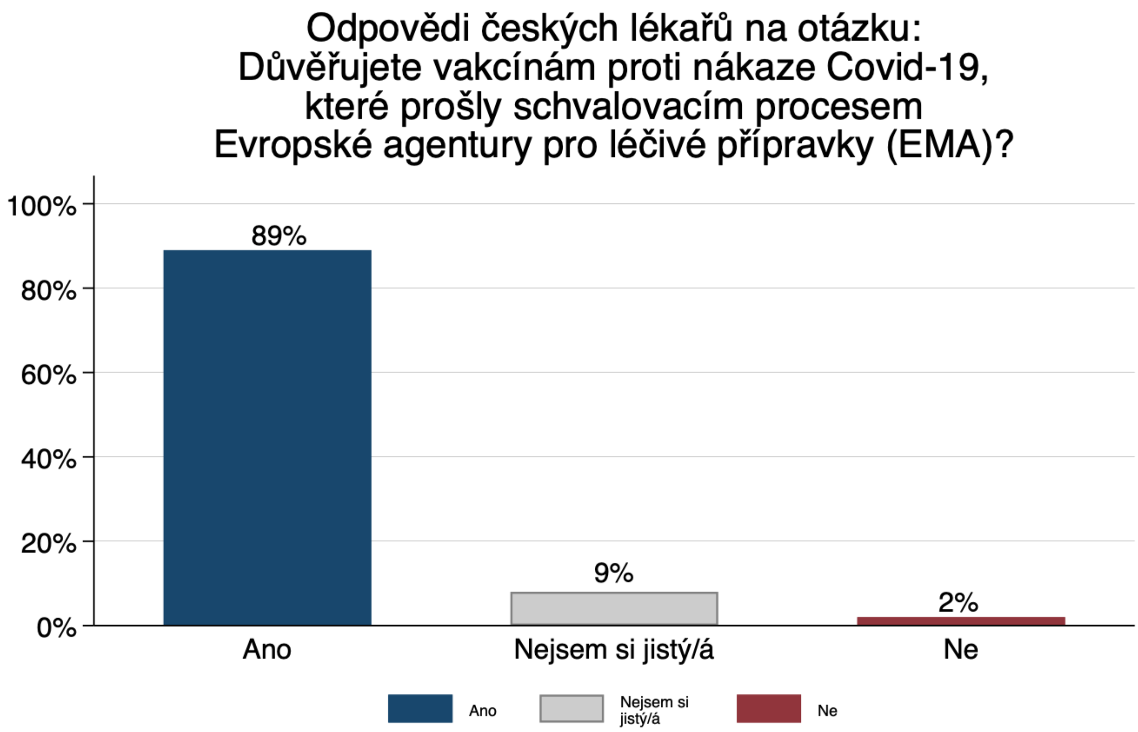
Slide 1: Česká lékařská komora provedla v minulých týdnech průzkum mezi všemi lékaři a lékařkami v ČR ohledně očkování. Na průzkum odpovědělo téměř 10 tisíc lékařů a lékařek ze všech částí republiky, z malých i velkých obcí, ze všech věkových kategorií. Rádi bychom vás seznámili s výsledky. Výsledky se nijak neliší napříč různými skupinami lékařů.

Slide 2: Zájem českých lékařů o očkování proti nemoci Covid-19 je velký. 90 % lékařů je již očkovaných a nebo má zájem se nechat očkovat. Pouze 4 % lékařů by se očkovat nenechalo.



Slide 3: Většina českých lékařů by očkování proti nemoci Covid-19 svým zdravým pacientům doporučila. 96 % lékařů by očkování svým zdravým pacientům doporučila buď z vlastní iniciativy nebo pokud se jich jejich pacienti na názor sami zeptají.

Slide 4: Důvěra českých lékařů ve vakcíny proti nemoci Covid-19 je silná. 89 % lékařů vakcínám schváleným Evropskou agenturou pro léčivé příspěvky důvěřuje. Pouze 2 % lékařů jim nedůvěřují.



3.4 Verification of vaccination status: Methods and results

The information about vaccination status of the respondents we use in the main analysis is self-reported. In this section, we address a concern that the estimated effect on vaccination take-up may have been affected by experimenter demand effects. Specifically, the concern is that reading about positive views of the medical community about the Covid-19 vaccine might have created a motivation, perhaps to please the survey organizers, to misreport, i.e. to report that a person is vaccinated although s/he is not. Such a pattern of misreporting would lead to an overestimate of the effect of the CONSENSUS condition on genuine vaccine take-up.

We start by noting that the dynamics observed of the effect of the CONSENSUS condition and its persistence are consistent with this explanation only under very specific and rather unlikely assumptions. In general, experimenter demand effects are typically thought to affect survey responses only shortly after the information intervention. This implies that the effect of the CONSENSUS condition should appear already in Wave0 and dissipate over time in later waves. In principle, the effect could persist and show up not only in Wave0 but also later on if participants who misreported their vaccination status in Wave0 remembered their misreports and decided to stick with them in later waves in order to provide consistent answers. However, in contrast, we observe that the effect of the CONSENSUS condition on vaccine take-up does not emerge immediately in Wave0 but emerges only gradually, as more and more people became eligible for the vaccine, and it becomes statistically significant only several months after the information intervention. This pattern could be reconciled with experimenter demand effects only if the respondents remembered feeling compelled to report being vaccinated by the treatment in Wave0, but started strategically misreporting that they got the vaccine only several months later, taking into account changes in the eligibility rules. Furthermore, we show that the treatment increases self-reported intentions to get a booster dose nine months after it was implemented. Although we cannot fully rule out such a persistence of demand effects and high level of sophistication in misreporting, we consider them highly unlikely.

To probe further, we collected additional data in order to empirically verify the vaccination status reported by the respondents in the main survey. We use two different verification methods: (i) Third party verification, and (ii) Certificate verification.

3.4.1. Third-party verification (TPV)

The aim of the Third-party verification survey was to collect comparable data on the vaccination status among the same sample of respondents by another entity, independently from our main data collection. The idea is that when asked by an independent third-party nine-months after the CONSENSUS condition was implemented in a different survey, the experimenter demand effects are unlikely to affect responses.

We took several steps in order to ensure that the respondents perceived TPV as completely unrelated to our main data collection. First, we partnered with a different survey agency (STEM/MARK), which had access to the same panel of respondents. We asked them to incorporate questions on vaccination in one of the surveys sent to respondents on their behalf. Thus, the respondents were approached by a different survey agency, which is seen by the public as a competitor to the one we collaborated with in the main data collection (NMS). Second, the topic of the survey was different. While the topic in our main data collection was life during the pandemic from many perspectives (including changes in employment, financial situation, mental health), the Third-party verification survey focused specifically on preventive health behavior (including smoking, exercising, preventive visits to the dentist and other specialists, as well as vaccination). Third, the timing of the TPV did not overlap with our main data collection. The Third-party verification survey was launched on December 14, 2021, while the last wave of our main data collection (Wave11) was launched on November 29, 2021 and completed in the first week of December. Finally, the graphical layouts of the survey and the invitation email were also different, reflecting the standards of STEM/MARK.

Sample. Out of the sample of respondents who participated in Wave11 of the main data collection (N = 1,801), 1,672 (92.8%) participated in the TPV. The response rate is similar in the CONTROL condition (92.3%) and in the CONSENSUS condition (93.8%). We matched the data and compared individual reports of vaccination status in Wave11 of the main data collection and in the TPV.

Verification rate. In the TPV, respondents were asked whether they had got at least one dose of Covid-19 vaccine. For those who reported being vaccinated in Wave11 of the main data collection (N = 1,318), we test whether they also reported being vaccinated in the TPV. While 1,316 respondents reported consistently that they were vaccinated in both surveys, only 2 respondents reported being vaccinated in Wave11 of the main data collection and at the same time not being vaccinated in the TPV. Thus, the verification rate of reporting being vaccinated in the main survey is 99.8%. Importantly, the verification rate is not lower in the CONSENSUS condition (99.9%) than in the CONTROL condition (99.8%).[1]

Note that we are unable to verify responses for the whole sample because some people did not participate in Wave11 of the main data collection or in the Third-party verification survey (N = 429; 19.5%). In Section 3.4.3, we show that the effect of the CONSENSUS condition is driven by treated individuals whose reports we can verify in the TPV rather than those whose reports we are unable to verify in the TPV.

3.4.2. Certificate verification (CV)

The second verification aims to link reports of being vaccinated with a proof of vaccination issued by the Ministry of Health of the Czech Republic. It is guided by the idea that people who misreport being vaccinated should not be willing or able to provide information from their administrative records about their vaccination. Thus, in the last wave of the main data collection (Wave11), we aimed to verify the vaccination status of the respondents who reported being vaccinated by asking them to provide information from the official document proving vaccination – the EU Digital COVID certificate. We take advantage of the fact that all vaccinated people in the country receive such a certificate and should have it readily available, typically in a mobile app, because there is a legal requirement to screen the certificate in restaurants and other public places.

Sample. We collected the data on vaccination certificates among respondents from our full sample who (i) participated in Wave11 and (ii) reported to have at least one dose of the Covid-19 vaccine in Wave11 (N = 1,414).

[1] Out of those who reported not being vaccinated in Wave11 of the main data collection (N = 354), 336 also reported not being vaccinated in the Third-party verification survey. 18 respondents reported being vaccinated in the TPV. Note that such inconsistency does not necessarily imply misreporting since the TPV took place two weeks after Wave11 of the main data collection and the respondents could have been vaccinated in the meantime.

Verification rates. In the CV, the respondents were asked whether they had their vaccination certificate with them. 1,364 respondents (96.5%) reported to having it and 50 reported not having it readily available. The likelihood of a positive response is very similar across the CONSENSUS (96%) and the CONTROL conditions (97%).

To verify that those who reported to having the vaccination certificate readily available actually had it and did not misreport, we further asked them to copy or type to our survey the text written in two specific text fields in their certificate (Vaccine/Prophylaxis and Vaccine medicinal product). We asked them for this type of information because (i) it does not reveal any personal information, and (ii) the answer is not widely known and it does not include straightforward options, and thus is difficult to guess without seeing the certificate. For example, the text in these parts of the certificate says: SARS-CoV-2 mRNA vaccine, Comirnaty, Spikevax, Vaxzevria, Biontech Manufacturing GmbH. Because there are several types of vaccines and their official names have changed over time, the list of correct answers is not perfectly defined. Further, since participants had to type the answers, a number of them made typos. Thus, in order to evaluate whether each of the respondents most likely had the vaccination certificate or not, we hired two research assistants and asked them to independently evaluate the answers of the respondents, without having access to information about the assignment of respondents to the CONSENSUS or CONTROL condition. They rated each text field by 1 if they were convinced that the respondent saw the certificate when answering the question and by 0 if they thought the respondent did not see the certificate. Since there were two text fields rated by two research assistants, each respondent got four ratings in total. Reassuringly, the ratings of individual raters are highly correlated (for Vaccine/Prophylaxis the raters provided identical ratings in 1331 out of 1364 cases; for the Vaccine medicinal product in 1318 out of 1364 cases). We consider the reports of being vaccinated verified for those respondents who received at least two positive ratings from the research assistants (N = 1,289) and not verified for those who received less than two positive ratings (N = 75) and those who reported not having the certificate with them (N = 50).

The verification rate is 94.4%, conditional on reporting having the certificate. We consider this as relatively high number, given that not being verified does not necessarily imply misreporting, because the respondents might have been vaccinated but did not have the certificate with them, or they had it but did not want to take time to type the text in the survey or they could not read the text in the certificate on their mobile phone screen since it was too small, as some explained in their answers. Thus, for respondents whose vaccination status was not verified, the risk of misreporting might be higher but we cannot precisely estimate the extent of misreporting. That said, importantly, the verification rate is again similar across the CONSENSUS (94.1%) and CONTROL (94.9%) conditions, and thus these findings are not consistent with the concern that the treatment increased misreporting.

In principle, it could still be argued that respondents who chose to misreport their vaccination status could make the effort and find the required pieces of information on the Internet (instead of opting for the simple option of saying that they did not have the certificate with them). To test this rather unlikely possibility, we searched for examples of a certificate ourselves and identified the three first pictures returned by Google search (the search outcomes were the same for different users). All three examples report the same information. Specifically, in the field "Vaccine medical product", the text says "Comirnaty" and in the field "Vaccine/Prophylaxis", the text in internet examples says: "mRNA vakcína proti onemocnění Covid-19. Covid-19 mRNA Vaccine, Severe acute respiratory syndrome coronavirus 2 mRNA only vaccine product (SNOMED CT 1119349007)". As a next step, we identify respondents who provided as their first answer the word "Comirnaty" and as their second answer at least one of the following four pieces of the text available in the example of a certificate: (i) mRNA vakcína proti onemocnění Covid-19, (ii) Covid-19 mRNA Vaccine, (iii) Severe acute respiratory syndrome coronavirus 2 mRNA only vaccine product, (iv) SNOMED CT 1119349007). Note that these types of answers are expected to be provided by respondents who actually had this type of vaccine and also, potentially, by those who did not have the certificate and found the answer on the Internet. Thus, the prevalence of these types of responses is not informative about the level of misreporting per se. We are again primarily interested in whether it differs across conditions.

Specifically, because there is no reason why the type of vaccine received by the respondents should differ across conditions, greater prevalence of reporting information that matches information in the examples on the Internet in CONSENSUS than in CONTROL could be indicative of greater misreporting of certificate possession. However, this is not what we observe. The prevalence of reporting "Comirnaty" for the first text field is 54.6% in the CONSENSUS condition and 56.3% in the CONTROL condition, the difference not being statistically significant (p-value = 0.541). Similarly, the prevalence of reporting a part of the text field that appears in the example of a certificate for the second question does not significantly differ across conditions - it is 7.1% in the CONSENSUS condition and 7.9% in the CONTROL condition (p-value = 0.561). We conclude that the likelihood of respondents searching for correct answers on the Internet is not higher in the CONSENSUS than in the CONTROL condition and thus, to compare the likelihood of misreporting vaccination status we can rely on comparison of the verification rates based on the raters' assessments reported above.

To summarize, we find that subjects in CONSENSUS, as compared to CONTROL, are (i) not less likely to report having a proof of vaccination readily available, (ii) not less likely to provide specific verifiable information from the certificate, and (iii) not more likely to search for these information on the Internet rather than using their own certificate. Thus, all these results speak against the possibility that subjects in CONSENSUS may be more prone to misreport their vaccination status than those in CONTROL.

In the next sub-section, we show that the effect of the CONSENSUS condition on vaccination status is driven by treated individuals whose vaccination status we can verify based on information provided about their certificate.

3.4.3. Is the effect of the CONSENSUS condition driven by participants whose vaccination status is verified?

As a final step, we explore whether the observed effect of the CONSENSUS condition on vaccine take-up is driven by respondents for whom we can be relatively certain that they were truly vaccinated, rather than mainly by participants for whom we are unable to verify their vaccination status. To do so, we distinguish three categories of answers about vaccination status and estimate the effect of the CONSENSUS condition using the ordered logit analysis (and multinomial logit in a robustness test). In each wave, we classify three types of respondents based on their vaccination status. The first category includes those who reported not being vaccinated and thus could not misreport being vaccinated. We label this category "Not vaccinated" and assign it the lowest value (0), since it is very likely that the respondents were not vaccinated. Next, we classify two categories of respondents who reported being vaccinated. The category "Vaccinated and verified" indicates that the respondent reported being vaccinated and at the same time her/his vaccination status was verified in the TPV/CV.

We assign the highest value to this category (2) since for these respondents it is very likely that they did not misreport their vaccination status and were truly vaccinated. Finally, the category "Vaccinated and not verified" indicates that the respondents reported being vaccinated but their vaccination status was not verified in the TPV/CV, either because their answers in the TPV/CV were evaluated as non-verified or because they did not participate in the TPV/CV. We assign the intermediate value to this category (1) since we are less certain whether they were truly vaccinated.

We use three approaches to use the verification results in the ordered logit analysis. First, we classify the categories based on the results of the TPV. Second, we classify them based on the results of the CV. Third, we classify them using a combination of both verification methods, i.e. we consider as verified those respondents whose reports were verified either by the TPV or by the CV. Further, we provide all these results using two sets of control variables, mimicking the main analysis. First, we control for the pre-specified set of control variables. Second, we control for the variables selected by the LASSO procedure. Since a LASSO command is not available for ordered logit and multinomial logit, we manually add controls selected by the LASSO procedure when analyzing the binary dependent variable (vaccinated vs. not vaccinated).

The results provide a clear pattern. The estimated effect of the CONSENSUS condition on vaccine take-up is almost entirely driven by an increase in the probability of being in the "Vaccinated and verified" group, and not by an effect on the probability of being in the "Vaccinated and not verified" group. We arrive at similar conclusions using both ordered logit and multinomial logit.

Summary

To summarize, we find that large shares of respondents participated in the Third-party verification as well as in the Certificate verification data collections. The rates of verification of the vaccination status among participants are high (91.2-99.8%), suggesting that misreporting is low in general. Importantly, the verification rates are similar in the CONSENSUS condition and in the CONTROL condition for both verification methods, suggesting that misreporting, if any, is not a greater issue in the CONSENSUS condition. Finally, we find that the effect of the CONSENSUS condition on higher vaccine take-up is almost entirely driven by individuals whose reports we can verify. Together, these results boost our confidence in the accuracy of reporting of the vaccination status and attenuate concerns that the effect of the CONSENSUS condition on vaccine take-up could be explained by experimenter demand effects and associated misreporting.

3.5 Regression specification

This section describes the empirical strategy used for the regression analysis.

In our main specifications (Figure 4, Supplementary Table 9), we test the effect of the CONSENSUS condition on vaccination take-up in a given wave (1-11) using two main specifications: (i) a linear probability model (LPM) with a pre-registered set of covariates and (ii) a double-selection LASSO linear regression choosing from a broader set of covariates.

The pre-registered linear probability regression model has the following specification:

$$Y_i = \alpha + \beta CONSENSUS_i + \gamma X_i + \varepsilon_i \quad (1)$$

where Y_i is an indicator equal to 1 if the participant i received at least one dose of a Covid-19 vaccine (Vaccinated; primary outcome, binary).

X_i is a set of individual-specific characteristics and controls. The pre-registered control variables are: gender, age category (6 categories), household size, number of children, region (14 regions), town size (7 categories), education (4 categories), economic status (7 categories), household income (11 categories), and pre-treatment vaccination demand.

The specification of the double-selection LASSO linear regression is equivalent to equation (1). We chose this method on top of the pre-registered LPM because it allows us to identify which covariates have sufficient empirical support for inclusion in the analysis, while tying our hands in the covariate selection process. On top of the pre-registered controls, we let the model select from the following non-specified variables: variable for being vaccinated prior the intervention and prior beliefs about the views of doctors.

A full definition of all variables is provided in Supplementary Information section 3.7. In all models we use Huber-White robust standard errors.

We estimate the models on the full sample of 2,101 respondents who participated in Wave0 (1,940 in Wave1, 1,939 in Wave2, 1,896 in Wave3, 1,860 in Wave4, 1,792 in Wave5, 1,620 in Wave6, 1,770 in Wave7, 1,745 in Wave8, 1,734 in Wave9, 1,611 in Wave10, and 1,851 in Wave11), and the fixed sample of 1,212 respondents who participated across all 12 waves (including Wave-19 on March 1).

In Figure 5 and Supplementary Table 10, we pool data for waves 6-11 when vaccines against Covid-19 were available for all adults and we use either a LPM with a pre-registered set of controls or a double-selection LASSO linear regression. We use the same specification as in equation (1) and add wave fixed effects. We cluster standard errors at the respondent level.

Randomization inference. Beyond standard inference, in Supplementary Tables 9 and 12, we use randomization inference based on permutation tests to construct p-values to test the exact null of no treatment effect[2,3]. We use the Stata package *ritest*[4]. The p-values are computed using 1000 random draws. For pooled regressions, we cluster at the respondent level.

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3.6 Definitions of variables

Treatment variable

- $\text{CONSENSUS}_i = 1$ if the respondent was randomly assigned to the CONSENSUS condition.

Baseline control variables

- Gender: Female (binary)
- Age category: 18-24 (binary, omitted in regression models to avoid perfect multicollinearity) / 25-34 (binary) / 35-44 (binary) / 45-54 (binary) / 55-64 (binary) / 65+ (binary)
- Household size: “How many members are there in your household?” (integer)
- Number of children: “How many children under 18 or students are there in your household?” (integer)
- Region: Prague (binary, omitted) / Central Bohemia (binary) / South Bohemia (binary) / Plzeň (binary) / Karlovy Vary (binary) / Ústí (binary) / Liberec (binary) / Hradec Králové (binary) / Pardubice (binary) / Vysočina (binary) / South Moravia (binary) / Olomouc (binary) / Zlín (binary) / Moravia-Silesia (binary)
- Town size: Below 999 (binary, omitted) / 1,000-1,999 (binary) / 2,000-4,999 (binary) / 5,000-19,999 (binary) / 20,000-49,999 (binary) / 50,000-99,999 (binary) / 100,000 and above (binary)
- Education: Primary (binary, omitted) / Lower secondary (binary) / Upper secondary (binary) / University (binary)
- Economic status: Answered “What is your economic status?” with: Employee (binary, omitted) / Entrepreneur (binary) / Unemployed (binary) / Retired (binary) / Student (binary) / Parental leave (binary) / Other (binary)
- Household income: Monthly net household income as provided by the Czech National Panel (pre-crisis levels): Up to 10,000 CZK (binary, omitted) / 10,001 – 15,000 CZK (binary) / 15,001 – 20,000 CZK (binary) / 20,001 – 25,000 CZK (binary) / 25,001 – 30,000 CZK (binary) / 30,001 – 35,000 CZK (binary) / 40,001 – 50,000 CZK (binary) / 50,001 – 60,000 CZK (binary) / More than 60,000 CZK (binary) / I don’t know (binary) / Missing income data (binary)
- Prior vaccination demand is an indicator variable equal to one if the value for Vaccination demand (see the definition for outcome variables) = 1 in the latest of the six waves of data collection (data collection starting on September 30, 2020, December 8, 2020, January 5, 2021, January 26, 2021, February 16, 2021) for which we have data for a given respondent. In other word, it is the latest pre-treatment indication of vaccination demand for the given respondent (binary).
- Prior vaccination demand missing is an indicator equal to one if we have no record for the previous variable. This was the case for 14 respondents of the full sample of respondents participating in Wave0. In this case of missing data, variable “prior vaccination demand” is coded as 0 (binary).
- Vaccinated at Wave0 is an indicator for whether the respondent received at least one dose of a Covid-19 vaccine by Wave0 (binary).

- Wave0 Beliefs about what percentage of medical doctors plan to get vaccinated (numeric)
- Wave0 Beliefs about what percentage of doctors trust approved Covid-19 vaccines (numeric)

Variables used for sub-sample analyses

In Supplementary Tables 17 and 18, we conduct the analysis using the model specified in Equation (1) with baseline control variables (defined above) for the following subsamples of respondents i:

- Age: 18-34
- Age: 35-54
- Age: 55+
- Gender: Men
- Gender: Women
- Income: Above median
- Income: Below median
- Town size: Cities
- Town size: Villages/towns
- Education: University
- Education: Completed secondary
- Education: Primary / Not completed secondary
- Demand for information: = 0 if responding [No] to "When it is published, would you like to get a link to a study with the results of a large survey by the Czech Medical Chamber among Czech medical doctors about their attitude to vaccination against Covid-19, which has just been conducted?"
- No demand for information =1 if responding [Yes] to the question above.

4 Populated pre-analysis plan

In the analysis presented above, we closely follow a pre-analysis plan registered at the AEA RCT registry (AEARCTR-0007396; https://www.socialscienceregistry.org/trials/7396).

We only deviate from the pre-analysis plan in the following respects:

- Since the process and requirement of vaccine registrations was changing over time and the vaccine roll-out was in the end faster than expected at the time of pre-registration (March 2021), we decided not to focus on this variable as an outcome of interest. The interpretation of the effects of CONSENSUS on registrations would differ substantially across waves.
- We managed to secure funding for extra survey waves. For this reason, we include eleven waves instead of the pre-registered three, noting that the pre-registration had planned for such a contingency.
- The pre-analysis plan did not plan for the verification methods introduced in Supplementary Information section 3.4.

Next, we present the remaining registered analysis that was not presented in the main text or the supplementary figures and tables. First, we present the results of a survival analysis. Second, we present the heterogeneity of the results by other pre-registered variables, including age, gender, income, town size, education, and demand for information about a full study presenting the results of the Survey among Czech medical doctors.

Supplementary Table 16. Cox proportional hazard model of vaccine take-up by the CONSENSUS condition (Main Experiment)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable	Vaccinated									
Sample	Full	Full	Fixed	Attentive	Underestimating trust	Overestimating trust	Underestimating take-up	Overestimating take-up	No prior vaccination intentions	Prior vaccination intentions
CONSENSUS	0.068	0.079*	0.099	0.066	0.091*	-0.218*	0.098*	-0.598**	0.250**	-0.001
	(0.049)	(0.048)	(0.060)	(0.050)	(0.053)	(0.127)	(0.051)	(0.233)	(0.109)	(0.055)
Pre-registered Controls	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,125	10,125	6,430	9,740	9,350	775	9,633	492	5,392	4,733

Notes: Cox proportional hazard model coefficients. Lin and Wei robust standard errors in parentheses. We estimate the hazard of vaccination take-up by the CONSENSUS condition versus the CONTROL condition. Vaccination take-up is an indicator equal to 1 if the respondent reported having obtained at least one dose of a vaccine against Covid-19. Columns 1 and 2 use the full sample. Column 3 uses a sample of respondents participating in all 12 waves. Column 4 restricts the full sample to respondents who passed all attention checks embedded in the survey. Columns 5, 6, 7, and 8 restrict the sample to respondents underestimating doctors' trust in vaccines, overestimating doctors' trust in vaccines, underestimating doctors' intentions to get vaccinated, and overestimating doctors' intentions to get vaccinated, respectively. Columns 9 and 10 restrict the sample to respondents without and with intentions to get vaccinated prior to Wave0, respectively. In Columns 1, and 3-10, we use the pre-registered set of controls. No controls are used in Column 2. *p<0.10; **p<0.05; ***p<0.01.

Supplementary Table 17. Effect of the CONSENSUS condition on respondents' vaccination take-up: heterogeneity.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Vaccinated					
Sample	Full sample			Fixed sample		
Panel A: Age	18-34	35-54	55+	18-34	35-54	55+
CONSENSUS	-0.027	0.037	0.039**	-0.038	0.063*	0.052**
	(0.050)	(0.028)	(0.019)	(0.065)	(0.035)	(0.022)
Observations	1,362	3,419	5,501	840	2,280	4,152
CONTROL mean	0.615	0.685	0.804	0.678	0.672	0.795
R-squared	0.352	0.373	0.317	0.456	0.436	0.365
Comparison chi-sq	1.26	0.01	1.57	1.94	0.07	1.80
(p-value)	(0.261)	(0.940)	(0.210)	(0.164)	(0.796)	(0.179)
Panel B: Gender	Female	Male		Female	Male	
CONSENSUS	0.033	0.026		0.035	0.061**	
	(0.023)	(0.021)		(0.029)	(0.024)	
Observations	5,161	5,121		3,588	3,684	
CONTROL mean	0.691	0.787		0.695	0.789	
R-squared	0.339	0.340		0.362	0.407	
Comparison chi-sq	0.05			0.49		
(p-value)	(0.823)			(0.485)		
Panel C: Income	Below median	Above median		Below median	Above median	
CONSENSUS	0.034	0.026		0.043	0.036	
	(0.029)	(0.019)		(0.034)	(0.024)	
Observations	3,690	5,441		2,604	3,864	
CONTROL mean	0.700	0.782		0.712	0.791	
R-squared	0.309	0.367		0.355	0.384	
Comparison chi-sq	0.04			0.03		
(p-value)	(0.838)			(0.859)		
Panel D: Town size	0 - 99,999	100,000+		0 - 99,999	100,000+	
CONSENSUS	0.029	0.051**		0.042	0.071***	
	(0.023)	(0.021)		(0.029)	(0.024)	
Observations	5,248	5,034		3,630	3,642	
CONTROL mean	0.694	0.783		0.690	0.790	
R-squared	0.323	0.353		0.361	0.373	
Comparison chi-sq	0.53			0.62		
(p-value)	(0.468)			(0.430)		
Panel E: Education	At most lower secondary	High school	University	At most lower secondary	High school	University
CONSENSUS	-0.002	0.094***	0.016	0.013	0.129***	0.014
	(0.033)	(0.025)	(0.024)	(0.043)	(0.030)	(0.028)
Observations	3,183	3,778	3,321	2,106	2,754	2,412
CONTROL mean	0.683	0.704	0.832	0.689	0.687	0.857
R-squared	0.278	0.410	0.353	0.321	0.466	0.346
Comparison chi-sq	5.54	5.23	0.19	4.94	7.83	0.00
(p-value)	(0.019)	(0.022)	(0.659)	(0.026)	(0.005)	(0.976)
Panel F: Demand for information						
	No	Yes		No	Yes	
CONSENSUS	0.046	0.035**		0.085*	0.049**	
	(0.043)	(0.017)		(0.048)	(0.020)	
Observations	1,773	8,509		1,170	6,102	

CONTROL mean	0.690	0.749		0.717	0.748
R-squared	0.352	0.345		0.432	0.380
Comparison chi-sq	0.06			0.50	
(p-value)	(0.808)			(0.481)	

Notes: OLS coefficients. Standard errors clustered at the respondent level in parentheses. The dependent variable in all columns is an indicator for vaccination take-up, equal to 1 if the respondent reported having obtained at least one dose of a vaccine against Covid-19. Wave 6-11 sample used. Columns 1-3 use the full sample. Columns 4-6 use a sample of respondents participating in all 12 waves. In all columns we use the pre-registered set of controls. All columns include wave fixed effects. Panel A presents results split by respondent's age groups. Panel B presents results split by respondent's gender. Panel C presents results split by respondent's income. Panel D presents results split by respondent's town size. Panel E presents results split by respondent's education level. Panel F presents results split by whether the respondent indicated willingness to get information about the survey among medical doctors. Rows titled "Comparison" in report a chi-square statistic and a p-value for a test of equivalence of coefficients across two respective models estimated using seemingly unrelated regressions (suest command in Stata 17). In case of three categories (age and education), we report comparisons for Columns 1 and 2 (4 and 5), Columns 2 and 3 (5 and 6), and Columns 1 and 3 (4 and 6), respectively for full (fixed) samples. *p<0.10; **p<0.05; ***p<0.01.