



Counterfeit Vaccines for COVID-19 Pose Risk to Public Health

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Abstract

The COVID-19 global pandemic saw an upsurge in cases of infection from 2019 to 2020 that progressively increased and spanned across the globe. Drug companies like Pfizer and Moderna have begun producing vaccines against the SARS-CoV-2-virus. However, with improvements in vaccine distribution comes the opportunity for criminal activity involving fraudulent vaccines that do not provide the same benefits compared to legitimate vaccines. The risks of fake vaccines include, but are not limited to, hazardous reactions towards unknown substances, danger to public health, and contribution to crime waves. Multiple world organizations have urged the public about safety and alertness towards the possibility of scam vaccinations to ensure widespread safety. By following guidelines set by these organizations, the amount of improperly administered fraudulent vaccines can be significantly reduced.





As the SARS-CoV-2 coronavirus spreads rapidly throughout the world, efforts in producing and distributing vaccines have increased at a heightened rate. Multiple COVID-19 vaccines have been developed in efforts to limit the surge of COVID-19 cases and protect the general public against infection. However, the pandemic has surged in an unpredictable nature, as mutations led to persistent variants including the Delta and Omicron variants. Although SARS-CoV-2 and its variants are not completely avoidable with vaccines, they do give a large advantage to individuals by preventing serious illness or hospitalization if infected.¹

The International Criminal Police Organization (INTERPOL) Secretary General Jürgen Stock explained that with the rapid progression of COVID-19, “criminals have preyed on people’s fears to make fast cash.”² Currently, the only authorized vaccines for COVID-19 in the world are by Pfizer/BioNTech, Novavax, Serum Institute of India, Johnson & Johnson, Moderna, and Oxford/AstraZeneca.³ Extensive efforts are being made for vaccinations to be distributed globally, but not all patients have received them fairly.⁴ According to the COVID-19 Global Tracker, developed countries have a larger percentage of vaccinated individuals than developing countries.⁴ In addition, countries with limited resources to manufacture, distribute, and administer vaccines tend to prioritize certain groups of citizens over others.⁴ Consequently, criminals use this disparity to their advantage by tricking citizens and making profits off of counterfeit vaccines with false promises of completely curing or preventing SARS-CoV-2.

Components of Fraudulent Vaccines

Authentic and approved vaccines usually contain the main ingredients of Nucleoside-modified mRNA, lipids, salts, sugar, acids, and acid stabilizers.⁵ Other specific ingredients can be publicly accessed on the Center of Disease Control and Prevention’s (CDC) website. COVID-19 vaccines do not contain eggs, gelatin, latex, or preservatives, and approved vaccines are free from metals such as “iron, nickel, cobalt, lithium, rare earth alloys, or any manufactured products such as microelectronics, electrodes, carbon nanotubes, or nanowire semiconductors”.⁶ It is advised that an individual either checks a government website or speaks with a healthcare professional to confirm a vaccine’s authenticity.⁶

Various reasons have led to illicit vaccines becoming critically harmful to a person’s health. They could contain too little, too much, or none of the active ingredients that make approved vaccines effective, even possibly containing chemicals such as “mercury, arsenic, rat poison, or cement.”⁷ Fake vaccines claim to have side effects or properties that approved vaccines do not.⁷ Other unapproved vaccines may have a different shape, size, or color than approved ones.⁷ On some occasions, fraudulent vaccines could be easily identifiable; they may be mislabelled or expired, lack information or storage details, have poor packaging with grammar or spelling errors, etc.⁷ Such traits can assist in determining the legitimacy and safety of any vaccine.⁷ Despite these conditions, approved vaccinations are also considered falsified if they were stolen, stored improperly, or expired.⁷ This makes them “ineffective or





contaminated” and illegal to sell.⁷ Therefore, research is important beforehand to ensure the legitimacy of the vaccine in question.

Risks of Illicit Vaccines

Fraudulent vaccines pose large risks to patients’ health, public safety, and international crime waves. INTERPOL and HSI (Homeland Security Investigations) have been urging alertness towards possible scams and hoaxes advertised to be effective or even real COVID-19 vaccines.²

The most predictable risk of purchasing counterfeit COVID-19 vaccines is the intake of harmful material into a patient’s system.² Fake COVID-19 vaccines pose a “serious health hazard if ingested or injected” since these “products are not tested, regulated or safety-checked.”²

Moreover, widespread reception of fake COVID-19 vaccines could entail increased circulation of the virus due to a large loss of protection that legitimate vaccinations provide.⁸ Head of Investigations and Counter-Fraud GAVI (non-profit vaccine alliance), the Vaccine Alliance expressed that counterfeit COVID-19 vaccines “give people a false sense of security” regarding their protection against the virus and that they may be at a “heightened risk of getting and spreading” COVID-19.⁸ Administrations of fake vaccines may initially be unknown, increasing the chances of spreading COVID-19 by an asymptomatic person.⁸ A side effect of fraudulent vaccines is the false beliefs of its inefficacy, resulting in distrust towards authentic vaccinations and healthcare systems/organizations, which may ultimately lengthen the duration of the pandemic.⁸

Another aspect of turmoil caused by fraudulent COVID-19 vaccines is its furtherance of the international crime wave. Fraudulent COVID-19 vaccines create opportunities for scams in other COVID-19 products, such as falsified documents for proof of immunization.⁹ Beyond health risks, fraudulent vaccines are an outlet for scamming victims of their money.² The market for scam vaccines is largely online through cybercriminals, in which felonious websites present themselves as authentic health or world organizations advertising COVID-19 vaccines.² The general secretary of INTERPOL Jurgen Stock explains that the victims of this crime could be individual buyers to government agencies of developing countries that “lack the healthcare infrastructure to distribute vaccines securely”.⁹ Fake websites used to market fake vaccines can also dupe victims into giving money under the pretense of charitable donations or could even lead to identity theft.²

Prevalent Areas for Fraudulent Vaccines

While authorities attempt to properly register and license the right vaccines for human use, fraudulent vaccines can “easily bypass their scrutiny due to complex and fragmented supply chains,” according to Jarett et al., who researched global traceability standards of vaccine counterfeiting.¹⁰ As more research and development is made towards COVID-19 vaccines, counterfeit vaccines are being globally marketed more and more.¹⁰ Even though unapproved vaccines are present throughout the world, statistically, fraudulent vaccines are more prevalent in developing





countries than in developed countries or countries with a larger population.¹⁰ COVID-19 counterfeit vaccines were first identified by the World Health Organization (WHO) in 2020 in Russia and Ecuador.¹⁰ INTERPOL also recognized a dangerous counterfeit vaccine being sold in South America before any vaccine was approved at the start of the pandemic.¹⁰ The trend identified is that the larger the population of a country or the less developed it is, the more likely there is a supply of unapproved, harmful vaccines being distributed to its citizens.¹⁰

Notable Cases Of International Fraudulent COVID-19 Vaccines

Pfizer Inc. identified its first confirmed instance of fake COVID-19 vaccinations in Mexico and Poland, in which the vials originating from Poland were identified to be antiwrinkle treatment.¹¹ Polish authorities reported that no patient was vaccinated with the fake vaccine.¹¹ Furthermore, the vials found in Mexico, were found to contain different lot numbers compared to those sent to the state as well as inaccurate expiration dates according to Nuevo León state's health secretary Dr. Manuel de la O Cavazos; the vaccinations were "found in beach-style beer coolers."¹¹

Similarly, fake vaccinations containing saline were found in multiple countries. In India, citizens of Mumbai that paid for and attended fraudulent "vaccination camps" were given fake shots containing saline according to the senior official of the Mumbai police department, Vishal Thakur.¹² Thakur further revealed that medical professionals and workers were "using a

hospital which was producing the fake certificates, vials, and syringes."¹²

Protection and Prevention Against Fraudulent Vaccines

While tracking down and stopping the trade and distribution of fake vaccines is near impossible, there are methods individuals can use to protect themselves from scams. INTERPOL provides guidelines for avoiding illicit medicines by following the "six Ps": place, prescriptions, promises, prices, privacy, and product.² These can be applied to getting vaccines for SARS-CoV-2.² When obtaining a COVID-19 vaccine, customers must be certain the place from which the vaccine is coming from is a known, licensed, and authentic supplier, whether it's a website or physical location.² If unsure about the credentials of the supplier, check the local health regulatory body.² Purchasing medicine should only be done with a prescription from a doctor or other healthcare professional unless it is an over-the-counter drug.² If a prescription is not needed, a licensed pharmacist should be contactable on the website or at the place of selling.² "Too good to be true" promises should also make a consumer wary.² For example, if the medications are advertised as "cures all types," "no risk," or "limited supply-buy in advance" it is likely that these are false promises to sell unauthentic products.²

Price is another factor to consider when getting a vaccine.² Most countries in North America and Europe are administering vaccines to patients at no cost to them directly.⁷ In fact, the U.S. Immigration and Customs Enforcement explained that "legitimate vaccines are not for sale. They are





strictly administered and distributed by national healthcare regulators.”⁷ However, in other countries, the price depends on the vaccine.⁷ Usually, the significantly cheaper vaccine is more likely to be fraudulent.⁷ It is beneficial to compare and contrast medicines with their more reputable sellers.⁷ Additionally, privacy can be violated by criminals in the illegal trade of vaccines by credit card fraud or identity theft.⁷ Again, confirming the credentials of the provider is vital before giving any financial information to avoid fraud or theft.⁷ Lastly, the medical product can be judged to be fake if it contains suspicious amounts of ingredients, has different than usual side effects, or has an unusual shape, size, or color.⁷ If it is incorrectly labeled, is expired, does not have instructions about the storage, or has spelling/grammatical errors, it is most likely fraudulent.⁷ Following these guidelines is essential to lower the risks of getting scammed into getting an illicit vaccine.⁷

The FDA (The United States Food and Drug Administration) provides some tips to avoid coronavirus fraud by sellers claiming to prevent, treat, or cure COVID-19.¹³ One tip is to avoid buying products that claim to treat a wide range of diseases.¹³ Personal testimonials are not evidence of efficacy.¹³ Scientific results must be presented for a drug to be approved.¹³ Medically, there are few diseases or conditions that can be quickly cured so individuals should be cautious about medicine advertised as a “quick fix” or “miracle cure.”¹³ These drugs are probably a hoax.¹³ Following the advice given by INTERPOL and FDA decreases the chance of people being tricked into receiving fake

vaccines which may do more harm than good.¹³

Conclusion

Fraudulent COVID-19 vaccines pose a serious threat to public safety, health, and general control of the pandemic.² Legitimate vaccines were developed by drug companies with the intention of public protection; they have been extensively tested for safety and efficacy as well as strictly distributed by national healthcare regulators.² In comparison, counterfeit vaccines were created with the intention of profit and fraud; such vaccines contain potentially harmful materials and provide little to no protection against the virus.² The risks of illicit vaccines include but are not limited to precarious health hazards, the continued transmission of COVID-19, as well as a potential contribution to criminal activity.² Criminals’ exploitation of fear over the COVID-19 pandemic is an international issue. Issues of false vaccines are especially prevalent in third-world countries due to the vulnerability stemming from financial and possibly civil insecurity.⁸ Therefore, INTERPOL and WHO have urged vigilance against possible scams and the sale of fraudulent vaccines. It is crucial for public safety that citizens around the world follow the guidelines set by these organizations so we can safely administer the approved vaccines.





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