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The Right to Health and Resource Allocation. Who Gets What and Why in the COVID-19 Pandemic

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Abstract: The COVID-19 outbreak has led to a worldwide, substantial increase in the demand for pharmaceuticals, hospital beds, ventilators, and medical supplies. When needs suddenly exceed demand worldwide, resources may quickly become scarce in relation to potential demand, so that strict rationing is the only viable response. Against this backdrop, this paper scrutinizes the rationales for prioritization of scarce resources, and it questions the actual role and reach of the market with regard to resources that are essential to deliver health care, especially in times of severe shortage, such as during a global pandemic.

Keywords: COVID-19, resource allocation, right to health

1 Shortage in Times of COVID-19

The COVID-19 pandemic is one of the most severe health crises in the history of mankind and its impact on society is largely unprecedented. The legal issues arising from its outbreak are similarly heretofore unexperienced, with several fields of law involved – from human rights to market regulation – all with consequences that need to be further scrutinized.[1]

Above all, this crisis raises fundamental questions on the functioning of health systems around the globe, and on the effective protection of the right to health, i.e. "the right of everyone to the enjoyment of the highest attainable standard of

1 For a comparative analysis of the normative response to the COVID-19 pandemic, see Ugo Mattei, Liu Guanghua, Emanuele Ariano, *The Chinese Advantage in Emergency Law*, GLOBAL JURIST, 2020, forthcoming; Tom Ginsburg, Mila Versteeg, *States of Emergencies (Part I&II)*, HARV. L. 55 REV. BLOG, 17–20 April 2020, available at https://blog.harvardlawreview.org/states-of-emergencies. See also European Journal of Risks Regulation, Special Issue, *Taming the COVID-19 by Regulation*, edited by Alberto Alemanno, available at https://www.cambridge.org/core/journals/european-journal-of-risk-regulation/taming-covid-19-by-regulation-ejrr-special-issue.

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physical and mental health".[2] The full realization of the right to health requires, inter alia, that "health and healthcare facilities, goods and services, as well as programmes, have to be *available in sufficient quantity*"; that these resources are "*accessible to everyone* without discrimination (…) especially the most vulnerable or marginalized sections of the population", and that they are "*affordable for all*". Further, it entails "the creation of conditions which would *assure to all* medical service and medical attention in the event of sickness".[3] Consequently, a rights-based approach to the pandemic is particularly suitable in order to reconsider how resources that are essential to deliver health care are allocated and used, especially in times of severe shortage, such as during a global pandemic.[4]

The current pandemic has led to a worldwide, substantial increase in the demand for pharmaceuticals, hospital beds, ventilators, and medical supplies, with the global need for these resources outstripping production. As the magnitude of this surge considerably exceeds the capacity of national health systems, most countries across the world are facing difficulties in ensuring the availability and accessibility of pandemic-related essential supplies to patients and health workers. Medical resources and personal protective equipment have become extremely difficult to find and exceedingly expensive, with prices hastily raised. As a result, many people are left without proper assistance and health care workers without equipment, or with equipment that is not fit for purpose.[5] Disparities in

2 See Art. 12, Int'l Covenant on Econ., Soc. & Cultural Rts., G.A. Res. 2200, U.N. GAOR, 21st Sess., Supp. No. 16, at 49, U.N. Doc A/6316 (1966), 993 U.N.T.S. 3 (adopted Dec. 16, 1966). See also General Comment 14: The Right to the Highest Attainable Standard of Health, U.N. Comm. on Econ., Soc. & Cultural Rts., 20th Sess., 12, U.N. Doc. E/C.12/2000/4 (2000); Limburg Principles on the Implementation of the International Covenant on Economic, Social and Cultural Rights, U.N. Doc. E/CN. 4/ 1987/17, Annex, reprinted in 9 HUM. RTS. Q. 122, 125 (1987). On the right to health, see generally George J. Annas, Michael A. Grodin, Sofia Gruskin, Jonathan M. Mann (eds.), Health and Human Rights: A Reader (1999). For a human rights-guided policy and law for the post-COVID-19 recovery, see Katharine Young, *The Idea of a Human Rights-Based Economic Recovery after COVID-19*, Boston College Law School Legal Studies Research Paper No. 538, August, 24, 2020, available at https://ssrn.com/abstract=3680094.

3 General Comment 14: The Right to the Highest Attainable Standard of Health, U.N. Comm. on Econ., Soc. & Cultural Rts., 20th Sess., 12, U.N. Doc. E/C.12/2000/4 (2000).

4 For a rights-based approach to the pandemic see, inter alia, World Health Organisation, *Addressing human rights as key to the COVID-19 response*, April 21, 2020, Ref. WHO/2019-nCoV/SRH/Rights/2020.1, available at https://www.who.int/publications/i/item/addressing-human-rights-as-key-to-the-covid-19-response. See also Dainius Pūras, Judith Bueno de Mesquita, Luisa Cabal, Allan A. Maleche, Benjamin Mason Meier, *The Right to Health Must Guide Responses to COVID-19*, THE LANCET, May 29, 2020, available at SSRN: https://ssrn.com/abstract=3615097.

5 See, e.g., Denis Campbell, Matta Busby, *'Not fit for purpose': UK medics condemn COVID-19 protection*, THE GUARDIAN, March 16, 2020, available at https://www.theguardian.com/society/2020/mar/16/not-fit-for-purpose-uk-medics-condemn-covid-19-protection.

income and wealth affect access to pandemic-related essentials, despite the universal need for these resources, with the pandemic that is exacerbating poverty and injustices, and it is uncovering inequalities in the right of every individual to access healthcare.[6] And the problem goes well beyond the COVID-19, as scarcity potentially not only affects patients who got the virus, but also those who may need medical treatment and resources that are scarce due to this pandemic.[7]

A first, critical rights-based response to this scarcity is undoubtedly a massive increase of funds devoted to health care and recovery. Even so, scarcity remains an urgent and pressing issue, and the problem of making crucial resources accessible in order to promote the right to health needs to be adequately addressed. This is especially true in times of absolute shortage. When needs suddenly exceed demand worldwide, as with COVID-19, resources may quickly become scarce in relation to potential demand, so that strict rationing is the only viable response.[8]

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6 On the distributional effects of the pandemic, see, e.g., Faheem Ahmed, Na'eem Ahmed, Christopher Pissarides, Joseph Stiglitz, Why Inequality Could Spread COVID-19, The Lancet, May 2020, available at https://www.thelancet.com/pdfs/journals/lanpub/PIIS2468-2667(20)30085-2.pdf. See also Andrew Glover, Jonathan Heathcote, Dirk Krueger, Jose-Victor Rios-Rull, H*ealth versus Wealth: On the Distributional Effects of Controlling a Pandemic*, Centre for Economic Policy Research, April 2020, available at https://cepr.org/active/publications/discussion_papers/dp.php?dpno=14606.

7 Paul N. Newton, Katherine C. Bond, *COVID-19 and risks to the supply and quality of tests, drugs, and vaccines*, THE LANCET. GLOBAL HEALTH, 8(6), e754–e755, available at https://doi.org/10.1016/S2214-109X(20)30136-4.

8 Several articles have been published on resource allocation since the outbreak of the pandemic. See, e.g., Ezekiel J. Emanuel, Govind Persad, Ross Upshur, Beatriz Thome, Michael Parker, Aaron Glickman, Cathy Zhang, Connor Boyle, Maxwell Smith, James P. Phillips, *Fair Allocation of Scarce Medical Resources in the Time of COVID-19*, NEW ENGLAND JOURNAL OF MEDICINE, March 23, 2020, available at https://www.nejm.org/doi/full/10.1056/NEJMsb2005114; Thomas Leclerc, Nicolas Donat, Alexis Donat, Pierre Pasquier, Nicolas Libert, Elodie Schaeffer, Erwan D'Aranda, Jean Cotte, Bruno Fontaine, Pierre-Francois Perrigault, Fabrice Michel, Laurent Muller, Eric Meaudre, Benoit Veber, *Prioritisation of ICU treatments for critically ill patients in a COVID-19 pandemic with scarce resources*, ANAESTHESIA CRITICAL CARE & PAIN MEDICINE, May 17, 2020, available at https://doi.org/10.1016/j.accpm.2020.05.008; Marco Vergano, Guido Bertolini, Alberto Giannini, Giuseppe R. Gristina, Sergio Livigni, Giovanni Mistraletti, Luigi Riccioni, Flavia Petrini, *Clinical Ethics Recommendations for the Allocation of Intensive Care Treatments in Exceptional, Resource-Limited Circumstances: the Italian perspective during the COVID-19 epidemic*, CRIT. CARE, 24, 165, 2020, available at https://doi.org/10.1186/s13054-020-02891-w; Ryan C. Maves, James Downar, Jeffrey R. Dichter, John L. Hick, Asha Devereaux, James A. Geiling, Niranjan Kissoon, Nathaniel Hupert, Alexander S. Niven, Mary A. King, Lewis L. Rubinson, Dan Hanfling, James G. Hodge Jr, Chiara Mannelli, *Whose life to save? Scarce resources allocation in the COVID-19 outbreak*, J MED ETHICS 2020; 46:364, available at doi:10.1136/medethics-2020-106227; Mary Faith Marshall, Katherine Fischkoff, Laura E. Evans, Mark R. Tonelli, Randy S. Wax, Gilbert Seda, John S. Parrish, Robert D. Truog, Charles L. Sprung, Michael D. Christian, *Triage of Scarce Critical Care Resources in COVID-19. An Implementation Guide for Regional Allocation. An Expert Panel Report of the Task Force for Mass Critical Care and the American College of Chest Physicians*, CHEST JOURNAL, April 23,

Under these circumstances, severe scarcity may have a lasting impact. Supply limitations constrain the prompt production of several medicines, as pharmaceuticals routinely undergo long clinical trials and experimental treatments need different stages of study. The same holds true for the most crucial of these resources: the COVID-19 vaccine. Once developed, the vaccine must prove to be both safe and effective, and a scaled up supply takes considerable time be produced, distributed and administered worldwide. Given that its development is expensive and time-consuming, and the need is global, a supply shortage is to be expected, also considering that the current global manufacturing capacity is far from being enough to supply a timely, comprehensive, and global vaccination program.

Against this backdrop, this paper surveys the rationales for prioritization of scarce resources. It reflects on the fundamental normative question on how these scarce resources can be fairly allocated, and ponders on a feasible strategy to realize this allocation.

2 Defining Criteria for Scarce Resources

When resources are not enough to allow access to treatment for everyone, someone is left without. For life-saving resources this means that those who do not have access may not survive. In such cases, allocation strategies are the only way to avoid arbitrary decisions and unwarranted casualties, with criteria that must be clear and consistently applied to determine who to prioritize.

Not surprisingly, there is considerable disagreement about the ethics of resource allocation. The most common solutions, incorporated in a number of protocols and ethical guidance documents, converge on some fundamental values and underlying ethical principles: treating people equally, maximizing the benefits, respect for people and their dignity, giving priority to the worst off, rewarding some instrumental value. As none of these criteria captures all relevant values, these principles are commonly integrated in a multi-value ethical framework, and variously pondered in accordance with the chosen approach: utilitarian (providing

2020, available at https://journal.chestnet.org/article/S0012-3692(20)30691-7/fulltext; Kathleen Liddell, Jaffrey M. Skopek, Stephanie Palmer, Stevie Martin, Jennifer Anderson, Andrew Sagar, *Who Gets the Ventilator? Important Legal Rights in a Pandemic*, JOURNAL OF MEDICAL ETHICS, May 2020, available at https://ssrn.com/abstract=3580872.; Douglas B. White, *A Framework for Rationing Ventilators and Critical Care Beds During the COVID-19 Pandemic*, JAMA, March 27, 2020, available at 10.1001/jama.2020.5046; Lisa Rosenbaum, *Facing COVID-19 in Italy — Ethics, Logistics, and Therapeutics on the Epidemic's Front Line*, THE NEW ENGLAND JOURNAL OF MEDICINE, May 14, 2020, available at https://www.nejm.org/doi/pdf/10.1056/NEJMp2005492?articleTools=true.

the greatest good to the greatest number of people); egalitarian (allocation based upon need); libertarian (protection of individual liberty and personal choice); communitarian (respect for different cultural priorities), and so on. Furthermore, when translated into policies, each of these criteria are operationalized in various ways.

The first, and most prominent of these principles is "No discrimination". Scarce resources need to be allocated without discrimination on grounds of age, sex, nationality, geographical origin, social status, economic situation or disability. This means that membership of a class defined by characteristics, such as those mentioned above, should never determine per se whether a person receives health care. Allocation based on grounds of sole membership is deemed as both unfair, since membership is beyond the individual's control, and potentially discriminatory, as it might easily conceal implicit biases and other social inequalities. In order to avoid biased resource allocation strategies that disadvantage a specific category of people, a single factor cannot be used for resource allocation whenever it determines the categorical exclusion of a group of people; nor it can be employed if it has a disproportionate effect on that group. As an example, strategies that disproportionately disfavor older adults, such as categorical exclusions based only on advanced age, may run afoul of antidiscrimination laws; the same holds true for similar allocation schemes referring to a single criterion alone.[9]

A second, often employed principle is "Save the most lives", which allows priority allocation of scarce resources to those with the highest probability of benefiting from them. This is perhaps the most accepted and intuitively appealing ground for departing from the egalitarian idea that everyone should count for one and nobody for more than one. It is not only consistent with utilitarian ethical perspectives that emphasize population outcomes in accordance to a benefit-maximizing allocation scheme ("doing the greatest good for the greatest number"), but also with

9 See Timothy W. Farrell, Lauren E. Ferrante, Teneille Brown, Leslie Francis, Eric Widera, Ramona Rhodes, Tony Rosen, Ula Hwang, Leah J. Witt, Niranjan Thothala, Shan W. Liu, Caroline A. Vitale, Ursula K. Braun, Caroline Stephens, Debra Saliba, *AGS Position Statement: Resource Allocation Strategies and Age-Related Considerations in the COVID-19 Era and Beyond*, JOURNAL OF THE AMERICAN GERIATRICS SOCIETY, 68:6, June 2020, available at https://doi.org/10.1111/jgs.16537; Kevin F. Boreskie, Patrick E. Boreskie, Don Melady, *Age is just a number – and so is frailty: Strategies to inform resource allocation during the COVID-19 pandemic*, CANADIAN JOURNAL OF EMERGENCY MEDICINE, April 1, 2020, available at https://doi.org/10.1017/cem.2020.358.

nonutilitarian views that stress the supreme value of each human life. For these reasons, saving more lives is a consensus value across expert reports.[10] Yet its application is far from simple and plain. While simplified, illustrative cases of the principle can be reassuring about its viability[11], converting it into a real-life policy is far more complicated, both for ethical and legal analysis.[12] As an example, prioritizing patients who are more likely to improve swiftly, and giving assistance to patients who are expected to make faster recoveries, may imply that some individuals will have critical care interventions withdrawn if they fail to progress. Further, considering the type and severity of the disease, comorbidity, and the potential for recovery puts those who have pre-existing health conditions at disadvantage. Such an outcome may have a disproportionate impact on the most vulnerable segment of the population, and be at odds with equality, since poor health is often affected by, inter alia, age, disability, and socio-economic conditions.

As an alternative, maximization of benefits is sometimes understood as "Save the most life years", based on predictions about how long the patient is likely to live if treated. This principle gives priority to patients likely to survive longest after treatment, by incorporating patients' expected duration of survival after treatment, rather than simply on whether treatment will prevent death. The rationale of this principle is giving individuals equal opportunity to pass through the stages of life, with fair innings or years of life saved. This principle faces fundamental objections too. As an example, under these allocation schemes, children and pregnant women may receive special priority, as might younger patients, even with severe illness, but the elderly may be deprioritized even if they are expected to make a fast recovery.

Another frequently referred criterion is granting priority access to critical resources to key groups considered to have special value, or to be more deserving. This principle requires the identification of groups that are either perceived as risking their own safety for the public's benefit or who have a special role in medical response. This category may include those who have essential responsibilities in saving lives, such as front-line healthcare workers and exposed caregivers who care for ill patients and who keep critical infrastructure operating; workers who face a high risk of infection and whose training makes them difficult to replace, and

10 See, e.g., Lee Daugherty Biddison, Kenneth A. Berkowitz, Brooke Courtney, Col Marla J De Jong, Asha V. Devereaux, Niranjan Kissoon, Beth E. Roxland, Charles L. Sprung, Jeffrey R. Dichter, Michael D. Christian, Tia Powell, *Ethical considerations: care of the critically ill and injured during pandemics and disasters: CHEST consensus statement*, CHEST, 2014;146(4 Suppl):e145S–55S, available at doi:10.1378/chest.14-0742.

11 Cf. John M. Taurek, *Should the numbers count?* (1977) 6 PHILOSOPHY AND PUBLIC AFFAIRS, 1977, 293.

12 On this regard, see Dominic Wilkinson, *ICU triage in an impending crisis: uncertainty, preemption and preparation*, JOURNAL OF MEDICAL ETHICS, 2020;46:287, available at https://doi.org/10.1136/medethics-2020-106226; Liddell et al., *supra* note 4.

research volunteers. Usually, the rationale for this prioritization is not based on these individuals being intrinsically worthier, but on instrumentalist grounds: because of their instrumental value, these groups are deemed as essential in saving others, helping to maximize the number of lives saved (in some cases a key category may be justified on the opportunity to reward those who have saved others in the past). The adaptation of this principle into policies may be similarly problematic, especially regarding strict definitions of who is included in these key groups.

Procedural criteria are equally important. A fair procedure in resource allocation is crucial to achieve public trust and cooperation in making sensitive choices. Reasonableness, transparency, clarity, inclusiveness, responsiveness, and accountability are the most common criteria in this regard. Resource allocation processes must be fair, based on objective criteria and evidence, and transparent in their decision-making, with the rationale for allocation clearly communicated, especially to those who are affected by these decisions. Finally, allocation policies should be consistent and uniformly applied, and they should be duly adjusted over time. In this regard, procedures must be flexible and responsive to the specific resource and context, and subject to accountability and to external monitoring, with independent review and appropriate remedies in order to avoid arbitrary decisions.[13]

3 Rethinking the Role and Reach of Markets in Pandemic-Related Resource Allocation

Achieving fair and criteria-based access and distribution of scarce resources is not just a question of protocols and guidelines. As many resources that suddenly become scarce during this pandemic are tradeable goods, reassessing rationales for resource allocation also brings us to question the actual role and reach of the market.

Economics describes the market as the locus par excellence where individual preferences are satisfied, producing maximum benefits for the society as a whole. In accordance with this belief, the transformation of the vast majority of resources into tradeable goods, legally defined on the base of their asset value[14], has happened in fields traditionally governed by non-market norms, with the market

13 Dainius Pūras, Judith Bueno de Mesquita, Luisa Cabal, Allan A. Maleche, Benjamin Mason Meier, *The Right to Health Must Guide Responses to COVID-19*, THE LANCET, May 29, 2020, available at https://ssrn.com/abstract=3615097.

14 This transformation goes back to Roman law, and it was made in negative terms: the inalienability of things (*res extra commercium*), and their exemption from trade and exchange was the exception to the rule, either for political or religious reasons. Cf. YAN THOMAS, LE VALEUR DE CHOSES. LE DROIT ROMAIN HORS LA RELIGION (2002).

reaching into spheres, such as health (but also education, environmental protection, and national security), traditionally outside its realm.[15]

This commodification of everything makes most resources, even the most critical ones, subject to market regulation and freedom of contract. Legal systems leave individuals free to transact with one another and to dispose of their property as they wish. Both in common law and civil law, this freedom includes the power to make contracts on terms fixed by the parties. Unconscionable bargains and harsh terms may be seen as evidence of fraud and further investigated, but not illegal per se, and courts cannot examine the adequacy of consideration, nor question the adequacy of price. This means that any advantage-taking by one of the contracting parties is seen as legitimate, and any rule that contradicts this regime is deemed an unbearable interference on free market and individual autonomy, which is at the same time unjustified and counterproductive.

This legal regime has both economic and philosophical foundations. The economic rationale that impedes courts from questioning the price fixed by the parties is grounded on market prices being set in response to supply and demand: when demand is higher, the price adjusts to meet this increase in demand, so that more scarcity means higher prices, while abundance is reflected in lower prices. Price flexibility means the market is always in equilibrium, avoiding scarcity. In addition, market price is said to allocate resources to those who value them most highly, as measured by their willingness to pay.

Not only economics, but also philosophical reasons support freedom of contract. The free price rule is said to enhance individual freedom from state interference and is based on a moral right to make any agreements, so long as it is truly voluntary and it does not violate third parties' rights.[16] In fact, an inquiry into the fairness of contractual agreements is seen as both paternalistic and ungrounded, being based on a mystical notion of economic value, and also counterproductive, making a scarce resource unavailable. Furthermore, despite the significant distributive implications of market regulation, private law is commonly placed

15 MARGARET RADIN, CONTESTED COMMODITIES (1996); MICHAEL J. SANDEL, WHAT MONEY CAN'T BUY (2012).

16 The fair price doctrine – i.e., the need to exchange things of equal value – was first formulated by Aristoteles in *Nichomachean Ethics* and later confirmed by Aquinas in his *Summa Theologiae*. With the criticism on an intrinsic worth or usefulness of goods, the late scholastics began to identify the "just price" with the price on a competitive market, varying from day to day and from place to place. This doctrine was popularized by the Natural Law School and by French authors, Jean Domat and Robert Pothier, making its way into the modern common and civil law traditions. Being dependent on the mere judgement of people, the fair price soon became the price for which goods are traded at a given place and time: not only costs of production, but also the need for the good and the scarcity started to be relevant variable to define just price. See JAMES GORDLEY, THE PHILOSOPHICAL ORIGINS OF MODERN CONTRACT DOCTRINE (1991).

outside the scope of distributive justice.[17] Accordingly, altering the terms on which individuals are allowed to contract and the distribution of these resources that results from the free exchange of property, in order to achieve a more desirable distribution, is at best problematic, so that property becomes "the guardian of every other right"[18] at the expense of social justice.[19] These assumptions are so firmly embedded in all legal systems that, even before an unprecedented pandemic, imposing a fixed price on an indispensable thing such as face masks after a price peak hundreds of times higher than average market price before the epidemic, is seen as a highly contested legal measure.

4 The Race for the Vaccine

As for other pandemic-related resources, a market-based approach is also likely to be the standard in vaccine distribution. Many states are concluding funding arrangements for the vaccine aiming at granting priority in vaccination to their citizens in the pursue of fragmented national self-interest. The U.S. government is trying to be first in line to receive supplies of the vaccine.[20] France, Germany, Italy and the Netherlands announced the formation of an "inclusive vaccines alliance" and said they are in joint discussions with pharmaceutical companies to accelerate production of a vaccine "on European soil."[21] The European Commission is also laying plans for joint procurement of COVID-19 vaccines on behalf of EU member states.[22] With due differences, in all these cases, the type of public funding arrangements put in place so far sustains research and development efforts, with this financial support often coming with obligations for the manufacturers to prioritize those providing economic resources (e.g., obligations to produce the vaccine in a country or region, and restriction of exports). As these agreements proliferate, with the most powerful and rich countries developing initiatives to grant their citizens vaccination, limited availability of the vaccine beyond the population of these countries is easily expected. This non-

17 Cf. Anthony T. Kronman, *Contract Law and Distributive Justice*, 89 YALE LAW JOURNAL 472 (1980); Steven Shavell, *A Note on Efficiency vs. Distributional Equity in Legal Rulemaking: Should Distributional Equity Matter Given Optimal Income Taxation?*, AMERICAN ECONOMIC REVIEW 71 (1981): 414; Louis Kaplow, Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, JOURNAL OF LEGAL STUDIES 23 (1994): 667.

18 JAMES ELY, THE GUARDIAN OF EVERY OTHER RIGHT. A CONSTITUTIONAL HISTORY OF PROPERTY RIGHTS (2008).

19 For the consequences of this narrative in the COVID-19 emergency see MATTEI, *supra* note 1.

20 https://www.ft.com/content/60434224-a70d-4a8d-821f-6ac239b4a349.

21 https://www.reuters.com/article/health-coronavirus-vaccines/italy-germany-france-and-netherlands-sign-contract-with-astrazeneca-for-covid-vaccine-idUSL8N2DQ0A1.

22 See EU COMMUNICATION, *EU Strategies for COVID-19 Vaccine*, Brussels, 17.6.2020 COM(2020) 245 final.

cooperative behavior by states "adds yet another layer of commodification and privatization to the production and distribution of new vaccines".[23] The risk is leaving the most vulnerable behind and triggering a humanitarian catastrophe with "winners" and "losers".[24]

Against this backdrop, the actual role and reach of markets for crucial resources is called into question, and fair and viable criteria for prioritizing access to scarce resources should be defined as an alternative to market allocation to the wealthiest. First of all, freedom from interference in contractual arrangements should be questioned especially with regard to vital resources, and should be balanced against other important values, such as right to health. As an example, an unfair price rule for pandemic-related essential supplies is not an unthinkable legal measure, but a legitimate issue to decide for public authorities, to be considered in the light of all relevant elements. This is especially true for pharmaceutical pricing, which is often seen as a clear example of 'market failure', with drugs considered special 'merit goods' rather than common 'consumer goods'.[25]

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23 Ana Santos Rutschman, *The COVID-19 Vaccine Race: Intellectual Property, Collaboration(s), Nationalism and Misinformation*, 64 WASHINGTON UNIVERSITY JOURNAL OF LAW AND POLICY, 2020, at 7, available at https://ssrn.com/abstract=3656929; Id., *The Reemergence of Vaccine Nationalism*, GEO. J. INT'L AFF., July, 3, 2020, available at https://gjia.georgetown.edu/2020/07/03/the-reemergence-of-vaccine-nationalism/; Id., *The Intellectual Property of COVID-19*, September, 11, 2020, available at https://ssrn.com/abstract=3691239. See also Benjamin Tham, Mark Findlay, *COVID-19 Vaccine Research, Development, Regulation and Access*, SMU CENTRE FOR AI & DATA GOVERNANCE RESEARCH PAPER, June 2020, available at https://ssrn.com/abstract=3640153.

24 https://actalliance.org/act-news/act-alliance-calls-for-equitable-and-criteria-based-access-and-distribution-of-covid-19-vaccines/.

25 Further, even if we assume that everyone's preferences are equally worthwhile – a very problematic belief for medicines – the ability to pay it is a very imperfect indicators of who most deserves health resources, as economic theory does not distinguish between the willingness and the ability to pay, and the risk is allocating resources to the wealthiest. On price schemes for pharmaceutical expenses, see, e.g., Livio Garattini, Alessandro Curto, Nick Freemantle, *Pharmaceutical Price Schemes in Europe: Time for a 'Continental' One?*, 34 PHARMACOECONOMICS, 2016, 423 ("From the demand side, patients are not normal consumers; instead, medical doctors decide therapies on their behalf (the so called 'principal-agent relationship') and pharmaceutical expenses are mostly funded by 'third-party payers' throughout the world. From the supply side, the pharmaceutical industry — by definition profit-oriented like any private industry — seeks to price its in-patent drugs as high as possible, to maximize the return on research and development (R&D) expenses during the global period of monopoly rent. As a consequence, price competition in the pharmaceutical market is hampered even when alternatives with similar efficacy are available"). As a solution, the authors suggest the adoption of an EU price regulation schemes. See also Alberto Bisin, Piero Gottardi, *Efficient Policy Intervention in an Epidemic*, September, 2, 2020, available at https://s18798.pcdn.co/albertobisin/wp-content/uploads/sites/16384/2020/09/BG-Covid-Aug30_2020.pdf ("In the context of an epidemic, a society is forced to face a complex system of externalities in consumption and in production"), who suggest that a competitive market for infection rights can guarantee efficiency.

Along the same line, it is crucial to overcome the current overreliance on profit-oriented, and patent-dependent approach. Available alternatives may include voluntary patent licensing pool schemes that permit to manufacture and to sell medicines under agreed terms[26], temporary patent pledges[27], partnerships that may fund and manage product development and coordinate purchase, and pooled procurement.[28] However, while these voluntary and temporary initiatives may compensate for some problems with the current system, they do not represent a long-term solution, and a new global policy framework is needed to reduce the current overreliance on market.[29] Another approach may be grounded on a wider adoption of compulsory licenses, based on a robust licensing framework that allow to produce and market the vaccine even without the consent of the patent owner, in order to guarantee the widest access to the vaccine at a reasonable price.[30] Further,

26 On the COVID-19 Technology Access Pool (C-TAP), see WORLD HEALTH ORGANIZATION, *COVID-19 Technology Access Pool*, https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019- ncov/covid-19-technology-access-pool.

27 See Open COVID-19 Pledge, launched in March 2020, available at https://opencovidpledge.org.

28 See COVAX (COVID-19 Vaccine Access Facility), available at https://www.gavi.org/covax-facility. COVAX is co-led by Gavi, the Coalition for Epidemic Preparedness Innovations (CEPI) and WHO, as a new financing instrument aimed at incentivizing vaccine manufacturers to produce sufficient quantities of any COVID-19 vaccines, and at ensuring access for developing countries, available at https://www.gavi.org/news/media-room/gavi-launches-innovative-financing-mechanism-access-covid-19-vaccines.

29 See, e.g., Veronika J. Wirtz et al., *Essential medicines for universal health coverage. The Lancet Commissions*, THE LANCET, 2017, 389.

30 On compulsory licensing see Regulation (EC) No 816/2006 of the European Parliament and of the Council of 17 May 2006 on compulsory licensing of patents relating to the manufacture of pharmaceutical products for export to countries with public health problems (OJ L 157, 9.6.2006, pp. 1–7), that establishes a procedure for companies in the EU wishing to manufacture generic medicines for use in the developing world to apply for a compulsory license from a patent holder, which allows their manufacture. Also, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), Art 8(1), provides that "Members may … adopt measures necessary to protect public health … and to promote the public interest in sectors of vital importance to their socio-economic and technological development."). Along the same line, the World Trade Organisation's Doha Declaration on the TRIPS Agreement and Public Health, Ministerial Conference, Fourth Session, 9–14 November 2001, par. 4, establishes that "The TRIPS Agreement does not and should not prevent Members from taking measures to protect public health. Accordingly, while reiterating our commitment to the TRIPS Agreement, we affirm that the Agreement can and should be interpreted and implemented in a manner supportive of WTO Members' right to protect public health and, in particular, to promote access to medicines for all". On this regard, the director-general of WIPO Francis Gurry affirmed that "The IP system recognizes at both the national and the international levels that emergencies and catastrophes may call for measures that may disrupt the normal functioning of the incentive framework upon which the IP system is based during the period of the emergency or catastrophe. The policy measures that are available in international and national IP law to manage and to mitigate emergencies and

public rewards may be offered to the creator as a viable alternative to property rights in information, making the information freely available to everybody, while the creator would get financial benefits. This system would equally provide incentives to innovate, while the information created would be distributed more efficiently, and it would be paid by the wealthiest, being based on taxes.[31]

This call for departing from market allocation for a vaccine is not meant to disregard the way markets work or to neglect the traditional economic justification for intellectual property on innovation. Quite differently, it envisages different tools to incentivize innovation and compensate risks and investments. After all, even under the classical incentive story, intellectual property is not a panacea, but a "necessary evil" that comes at great expense.[32] Permitting creators to charge a supra-competitive price, thanks to an exclusive right in their works, provides optimal incentives to innovate. But, at the same time, it artificially reduces the consumption of these goods (in our case, it reduces the consumption of life-saving medicines). This is because with property rights in information, goods embodying the information are sold at prices that far exceed the cost of production, diminishing access to these goods. Notably, the social loss provoked by this supra-competitive price, caused by property rights in information, depends on the difference between price and the cost of production. This magnitude is especially impressive for medicines, as the comparison of the price of patented drugs to their price after patent expires demonstrates.[33]

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catastrophes include compulsory licenses and licenses of right of patented technology embodied in vital medical supplies and medicines. These measures, when deployed in a targeted and time-bound manner, may be useful or even vital when there is evidence of a need to which they may be addressed.". See Francis Gurry, *Some Considerations on Intellectual Property, Innovation, Access and COVID-19*, WORLD INTELLECTUAL PROPERTY ORGANIZATION, April, 24, 2020, available at https://www.wipo.int/about-wipo/en/dg_gurry/news/2020/news_0025.html.

31 STEVEN SHAVELL, FOUNDATIONS OF ECONOMIC ANALYSIS OF LAW (2004).

32 Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 131 (2004).

33 During the COVID-19 outbreak, a hospital in Brescia (Italy) was unable to acquire from the original manufacturers the valves needed to connect patients to the ventilator, currently sold at ten thousand dollars each. Local engineers were able to reverse engineer the valves, to create a 3D-printable prototype at the cost of one dollar each, and to produce one hundred valves in a day. See Dinusha Mendis et al., *3D Printing: How an Emerging Technology May Help Fight a Pandemic*, IPR INFO, February, 25, 2020; Anas Essop, *Hospital in Italy Turns to 3D Printing to Save Lives of Coronavirus Patients*, 3D PRINTING INDUSTRY, March, 18, 2020, available at https://3dprintingindustry.com/news/hospital-in-italy-turns-to-3d-printing-to- save-lives-of-coronavirus-patients-169136/.

5 Concluding Remarks

In conclusion, a market-based approach to medicines and to the vaccine, founded on property rights and funding arrangements, entails that far fewer people have access to medicines and to the vaccine. Admittedly, allocating resources outside the market means balancing multiple ethical values that may vary significantly for various interventions and in different circumstances. Divergent conclusions about how much weight each value is given in different cases are foreseeable. Designing matching process is a much more complex task than market regulation, where price is the only determinant of who gets what.[34] Further, the risk of societal backlash is present and perhaps inevitable, especially in countries where politics refrain from making resource-rationing claims, as in Italy.[35]

Notwithstanding, a non-market approach to pandemic-related resources is strongly preferable to giving priority to the wealthiest. It would not only be more equitable and fair allocation, but also more effective: strategies to contrast the COVID-19 pandemic can be truly effective on a global scale only if focused on the most vulnerable and disadvantaged groups[36] and countries that face disproportionate risks, due to weak healthcare systems, scarcity of public health human resources, and limited financial means.[37] In short, it is only by departing from market allocation that it is possible to mitigate the impact of the COVID-19 pandemic.

Furthermore, it is crucial to overcome the current, nationalistic approach to the vaccine. A worldwide common strategy is highly desirable to allow for effective coordination, collaboration, and communication: governments, firms and

34 On matching mechanisms, see ALVIN E. ROTH, WHO GETS WHAT – AND WHY? (2015).

35 On a comparative approach to tragic choices see GUIDO CALABRESI, PHILIP BOBBIT, TRAGIC CHOICES (1978).

36 The World Health Organization and the National Academy of Medicine published their recommendations for COVID-19 vaccine distribution, focusing on vulnerable people. See WHO Concept for fair access and equitable allocation of COVID-19 health products (2020), https://www.who.int/publications/m/item/fair-allocation-mechanism-for-covid-19-vaccines-through-the-covax-facility; Helene Gayle, William Foege, Lisa Brown, Benjamin Kahn (eds.), Framework for Equitable Allocation of COVID-19 Vaccine (2020), https://www.nap.edu/catalog/25917/framework-for-equitable-allocation-of-covid-19-vaccine.

37 Marius Gilbert, Giulia Pullano, Francesco Pinotti, Eugenio Valdano, Chiara Poletto, Pierre-Yves Boëlle, Eric D'Ortenzio, Yazdan Yazdanpanah, Serge Paul Eholie, Mathias Altmann, Bernardo Gutierrez, Moritz U.G. Kraemer, Vittoria Colizza, *Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study*, THE LANCET, Feb 19, 2020, available https://doi.org/10.1016/ S0140-6736(20)30411-6; John N. Nkengasong, Wessam Mankoula, *Looming threat of COVID-19 infection in Africa: act collectively, and fast*, THE LANCET, March, 14, 2020, available at https://doi.org/10.1016/S0140-6736(20)30464-5.

international organization should not only share research and best practices, but also medical equipment and other critical resources, by cooperating for a global framework for resource allocation that truly reflects global priorities, to optimize limited resources in accordance with principles of universality and equality, aimed at giving equal access to vaccines for all, and prioritization of supply to those in greatest need and to the most vulnerable populations, and reduce the economic and social impacts of the pandemic.

Allocating lifesaving, scarce resources is a tragic choice. However, such hard decisions are hardly new in human history, and ethical concerns related to resource allocation are far from extraordinary. The uniqueness and novelty of this global pandemic lies in the unusually high number of individuals likely to be impacted by allocation criteria, with the effects of prioritization experienced by an entire world, rather than by a restricted group of people.[38] This is why the pandemic may be seen as a turning point.[39] Since all are affected, this global shortage is perhaps making us more aware of the price we pay for living in a society where the market decides who gets what and why, even in the time of a global pandemic. As such, it offers an unprecedented opportunity to reconsider the way we allocate vital resources and safeguard the right to health globally.

38 Chiara Mannelli. *Whose life to save? Scarce resources allocation in the COVID-19 outbreak*, MED. ETHICS, 2020, 46:364, available at doi:10.1136/medethics-2020-106227.

39 SLAVOJ ŽIŽEK, PANDEMIC! COVID-19 SHAKES THE WORLD (2020).