

**AUGMENTED CREATIVITY AND HEALTHCARE:  
HOW AI HAS THE POTENTIAL TO MAXIMIZE  
HEALTHCARE OUTCOMES**

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**INTRODUCTION**

Augmented creativity is defined as *the use of artificial intelligence to understand, synthesize, and recombine data*. The concept has gained attention from many industries, and there is an emerging focus on the future applications and implications of augmented creativity in the health sector specifically. Because the full capabilities of augmented creativity are not yet realized, an extensive, open exploration of the concept is a useful research method. Augmented creativity is recognized as a rising star in the field of artificial intelligence; its broad applicability makes augmented creativity a timely and exciting subject in the context of economic decline, pandemic resurgence, and research surplus.

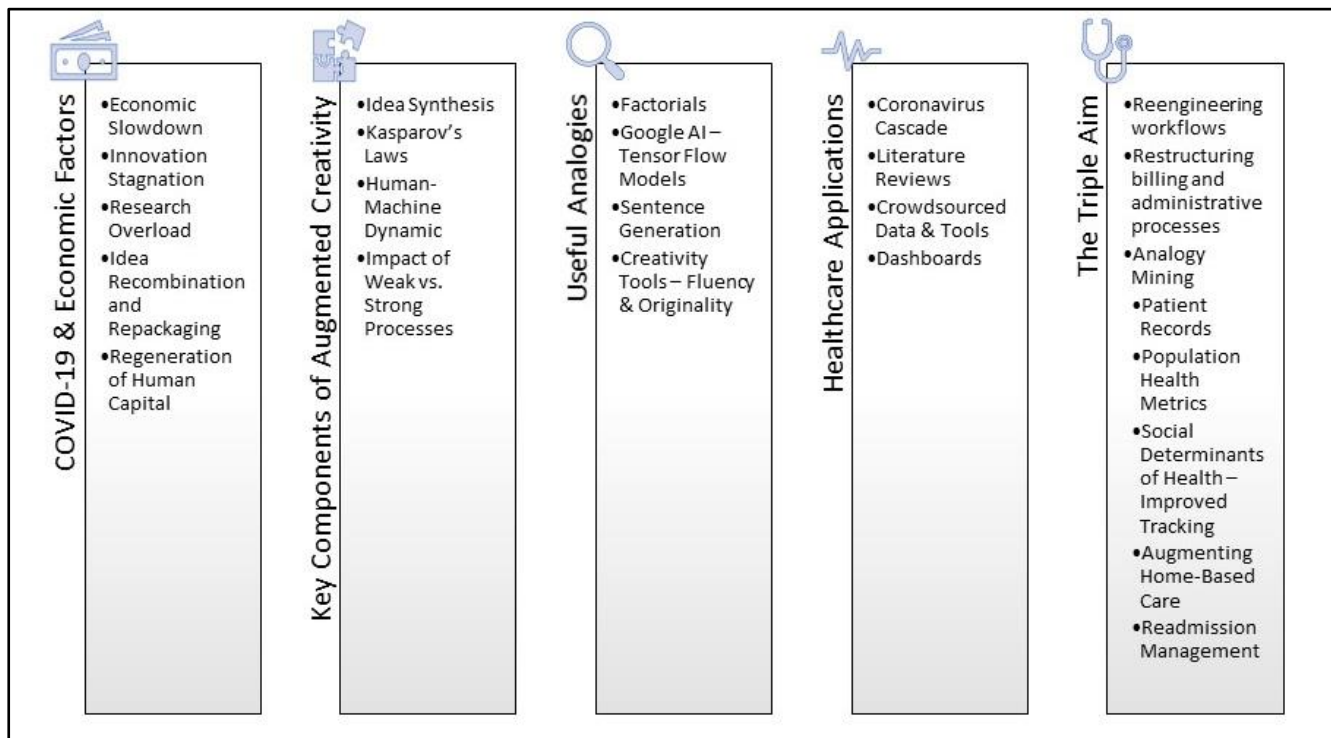
This research brief highlights useful and applied elements of augmented creativity in the COVID-19 context and defines the horizon of augmented creativity in the future of healthcare.

**AUGMENTED CREATIVITY AND COVID-19**

The importance of augmented creativity has emerged during COVID-19 for several reasons. The pandemic thrust the world into a tumultuous situation, faced with the heroism of healthcare workers, a flurry of technological and digital innovation, and urgent, groundbreaking research. The pandemic has led the healthcare community to reinvent processes across the continuum of care and to adopt emerging technologies in various fields. In addition, a “coronavirus cascade” has avalanched in terms of published research. Scientists published more than 100,000 articles about the coronavirus pandemic in 2020, and by 2021, the number has surpassed 200,000.<sup>1</sup>

The explosion of new technologies and research, the ability to identify and distinguish the best solutions to COVID-19 has become difficult. This one area where augmented creativity could play a valuable role. Exploring innovative approaches to manage, understand, and extrapolate data from the coronavirus cascade has revealed augmented creativity as a prime solution. Augmented creativity redefines how COVID-19 research is processed and analyzed; it can be applied to a vast horizon of existing healthcare problems. Furthermore, researchers have emphasized that the traditional way of creating and improving existing ideas is becoming outdated.<sup>2 3</sup> These

**FIGURE 1: FIGURE 1 AN OVERVIEW OF AUGMENTED CREATIVITY**



<sup>1</sup> Else H. How a torrent of COVID science changed research publishing- in seven charts. *Nature*. 2020;588(7839):553-553.

<sup>2</sup> Gordon RJ. *Is US economic growth over? Faltering innovation confronts the six headwinds*. National Bureau of Economic Research;2012. 0898-2937.

<sup>3</sup> Buchanan M. Innovation slowdown. *Nature Physics*. 2015;11(1):2-2.

suppositions are relevant to the topic of augmented creativity in two respects. One, augmented creativity could aid researchers in generating novel ideas, acting as an engine for innovation, thus prolonging the benefits to be realized by a particular product or idea. Two, with augmented creativity combining existing ideas, products, and processes into new and improved forms, human capital may be freed up to innovate anew. This could lead to improved and sustainable economic growth, a development that has proven elusive amid the ongoing COVID-19 pandemic.

### **IDEA SYNTHESIS AS A COMPONENT OF AUGMENTED CREATIVITY**

Augmented creativity operationalizes idea synthesis, the process of combining different arguments (from the Greek word “theses”) into a new argument.<sup>4</sup> Idea synthesis is a hallmark of critical thinking in humans and prior to the advent of AI and augmented creativity, it was a uniquely human process.

Garry Kasparov, a Soviet-born political activist and writer, was interested in idea generation and idea synthesis and studied the ability of humans vs. machines to engage in these processes. He formulated two laws relevant to the study of idea generation and human-machine collaboration, concepts that are closely connected with augmented creativity and idea synthesis.<sup>5</sup>

Kasparov, who became the world’s youngest chess champion in 1985, defeated a supercomputer known as Deep Blue in a 1996 match. In 1997, with Deep Blue’s intelligence upgraded, Kasparov was defeated.<sup>6</sup> This anecdote is a fitting example of the close, ever-changing relationship between human and machine, and it informs Kasparov’s two laws, outlined below:

1. Weak Human + Machine + Better Process > Strong Machine;
2. Weak Human + Machine + Better Process > Strong Human + Machine + Inferior Process

Kasparov argued that weak humans, defined as those who perform “significantly worse than a state-of-the-art AI,” can outperform the noted AI if they base their judgments on majority voting and these judgments are then aggregated.<sup>1</sup> The majority voting strategy would be a “better process” in Kasparov’s first law, while the accumulation of majority vote judgements constitutes the “machine” aspect. In simpler terms, Kasparov suggests that even the strongest AI systems cannot outperform humans equipped with a good machine and a good process. Kasparov’s laws are highly relevant to

augmented creativity because, unlike some AI, augmented creativity inherently relies on human-machine collaboration. According to Kasparov, the partnership between human and machine would give augmented creative processes an edge over machine-only processes. The benefits of such a relationship illuminate the need for augmented creativity in healthcare, where collaborative tasks are commonplace and where AI is being used in a wide range of tasks, from “supporting clinical processes (e.g., diagnosis, documentation, and coordination of healthcare work), to transforming how medical benefits are accessed.”<sup>2</sup>

Kasparov’s second law is equally insightful. The second law states that weaker human teams, if equipped with a good machine and process, can outperform stronger human teams, if the process employed by those teams is inferior. To better understand this concept, consider the following analogy. In a game of tug-of-war, one team has two members and a machine to drive the rope. The other team has six members and the same machine. The team with two members, however, operates the machine more efficiently and effectively than the team with six members. Despite being a “weaker” team, the team with only two members will outperform the team with six, despite being equipped with the same machine. Kasparov’s concept is a reminder of the importance of strong processes in any creative activity and suggests that no amount of intelligent technology can overcome weaknesses in human contributions which is noteworthy in consideration of potential augmented creativity applications in healthcare. What Kasparov describes through these two laws is how augmented creativity is inherently different, and potentially more beneficial, than artificial intelligence.

### **ARTIFICIAL INTELLIGENCE VS. AUGMENTED CREATIVITY**

To reiterate, AI and augmented creativity are intricately linked, but are very distinct processes. Understanding how AI fits with and differs from augmented creativity is important because the AI field is constantly evolving and therefore distinction between the two concepts can be clouded. AI is an increasingly popular tool in healthcare that is implemented in a wide array of settings including many distinct aspects of patient care. As per Legg and Hutter (2007), intelligence is defined as “the ability to interact, learn, adopt, and resort to information from experiences, as well as to deal with uncertainty.”<sup>7</sup> Meanwhile, artificial refers to something that is not natural, or something that is produced by humans to seem natural. AI, then, may be

<sup>4</sup> “Thesis | Origin and Meaning of Thesis by Online Etymology Dictionary.” 2021. Etymonline.com. 2021.

<sup>5</sup> Cabitza F, Campagner A, Sconfienza LM. Studying human-AI collaboration protocols: the case of the Kasparov’s law in radiological double reading. *Health Information Science and Systems*. 2021;9(1):1-20.

<sup>6</sup> “Garry Kasparov | Chess & Games | Britannica.” 2021. In *Encyclopedia Britannica*.

<https://www.britannica.com/biography/Garry-Kasparov>

<sup>7</sup> Legg, Shane, and Marcus Hutter. Universal intelligence: A definition of machine intelligence. *Minds and machines* 2007; 17(4):391-444.

broadly defined as a human-made process of interaction and learning.

This definition of AI is related to augmented creativity, but not identical. Both concepts are used to reproduce processes and find solutions to complex problems. However, augmented creativity involves greater human cooperability than AI itself. Augmented creativity can therefore be defined as the *use* of artificial intelligence to understand, synthesize, and recombine data. Merriam Webster defines creativity simply as “the ability to create,”<sup>8</sup> while the Cambridge Dictionary states that creativity is “the ability to produce or use original and unusual ideas.”<sup>9</sup>

With augmented creativity, AI processes enhance and aid in the actions described by these definitions. While AI cannot create something from nothing, it can take original human ideas and, as Cambridge Dictionary, suggests, *use* those ideas in interesting ways. At first glance, this may not seem like a fundamentally creative process. However, consider this basic analogy. Imagine that ideas are colors. One idea, generated by classical human creativity, is blue; another is yellow. These colors are input into an AI algorithm designed to combine existing inputs and form original outputs, not unlike a paint mixer in a hardware store. The algorithm, then, generates green – a color that did not exist in the input pool. In this example, only one original output was possible, with YxB and BxY as the only combinations ( $2! = 2$ ). However, with more inputs, more original outputs may be generated. For example, 10 inputs could generate 10! or 3,628,800 outputs. This process, termed combinatorial innovation, reflects a shift in human creativity and expedites this process.

### OTHER ANALOGIES

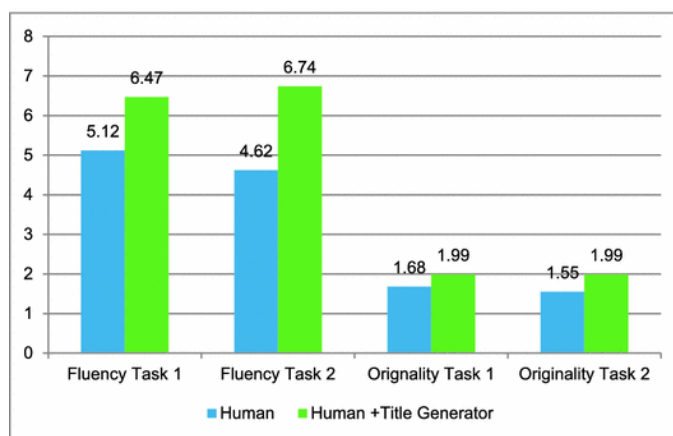
The example above showed how existing colors can be combined into new colors. It did not, however, offer any insight into what makes a color blue, yellow, or green. This ability, known as explainability in the machine-learning field, “makes models more interpretable, so that we can understand, at least to some extent, why they make the predictions they do.”<sup>10</sup> Incredibly important for the credibility of augmented creativity applications, explainability is an advantage in machine learning because predictions do not have to be taken at face value; instead, they offer insights to what contributed to the model output. To continue the earlier example, in a model equipped with explainability, one would know that green was the output because of the particular makeup of blue and yellow

pigments – in this case, the wavelengths of the pigment are what explains the green output.

Now take a more complex example. In 2020, a developer at Google Cloud designed a TensorFlow model, devised to take in a dataset of baking recipes and dish out predictions by type, such as “97% bread, 2% cake, 1% cookie.”<sup>11</sup> The explainability of this model shows what characteristics define bread, what constitutes a cake, and what makes a cookie a cookie. The algorithm allowed the developer to then experiment and discover brand-new baked goods, such as the “cakie,” a combination of cake and cookie, or the “breakie,” a combination of bread and cookie.

The above example proves that augmented creativity can be used to generate unique innovations from a dataset of existing ideas, as well as inform the user on the composition of the inputs. In this example, the prediction model is AI, while the *use* of the prediction model to find recipes for the “cakie” and “breakie is augmented creativity. However, unique innovation does not necessarily indicate whether augmented creativity can generate *better* ideas than those in the existing pool. This deficiency provides an important consideration when evaluating the overall efficacy of augmented creativity. If augmented creative processes generated valuable ideas only 50% of the time, they would not be as useful to the scientific community as they would be if they generated a preponderance of valuable, usable ideas.

**FIGURE 2. LEIDEN UNIVERSITY STUDY RESULTS  
EVALUATING FLUENCY AND ORIGINALITY BETWEEN  
HUMAN-MADE TITLES AND THOSE WITH THE AID OF  
THE TITLE GENERATOR: TITULAR.**



<sup>8</sup> Merriam-Webster Dictionary. 2021. Merriam-Webster.com. 2021. <https://www.merriam-webster.com/dictionary/creativity>.

<sup>9</sup> Cambridge Dictionary. 2021. “Creativity.” @CambridgeWords. April 28, 2021.

<https://dictionary.cambridge.org/us/dictionary/english/creativity>.

<sup>10</sup> “Baking Recipes Made by AI | Google Cloud Blog.” 2020. Google Cloud Blog. 2020. <https://cloud.google.com/blog/topics/developers-practitioners/baking-recipes-made-ai>

<sup>11</sup> “Baking Recipes Made by AI | Google Cloud Blog.” 2020.

To explore the concern of whether augmented creativity provides better solutions and not just unique ones, evaluate another field: writing. A team of computer scientists and cognitive psychologists at the University of Wisconsin was interested in measuring the creativity in a piece of writing. They found that “subjective creativity in sentence-writing can in part be predicted using computable quantities”<sup>12</sup> and offered helpful parameters for the output of creativity tools, stating that output must first be measurably different than input items, and it must be *meaningful*. This parameter distinguishes machine learning such as sentence enhancement from the machine learning described in the “cakie” example.

If augmented creativity is to be used in combining the most promising research of the coronavirus cascade - or the entirety of healthcare for that matter - one must ensure that models produce meaningful outputs rather than random noise. Titular, a creativity tool that generates new titles, is a good example of a model that meets both parameters mentioned. Notably, Titular was not only studied to decide if a model can create new titles, but to learn if one can enhance the human creativity. To ascertain this, a team at Leiden University compared the creativity of two groups. One, a control group, was not allowed to use Titular, while the experimental group was given access to Titular. The groups were presented with two paintings each and asked to come up with titles for both. In both cases, the group using Titular generated more titles (fluency) and more creative titles (originality). The results are shown in Figure 2 and highlight

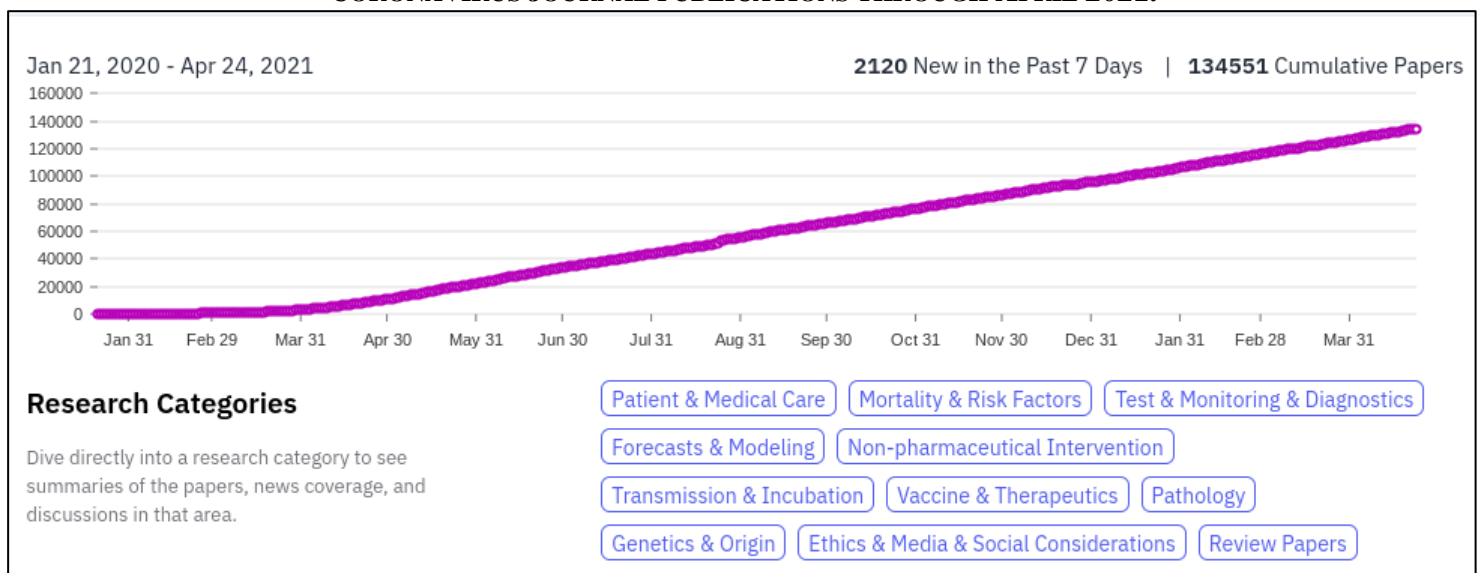
that augmented creativity not only helped create more titles but aided the human part in creating more creative titles than their counterparts.

These examples shed light on the ability of augmented creativity to manage the “coronavirus cascade.” Essentially, augmented creativity can internalize complex, vast datasets, perform combinatorial innovation, and produce innovative ideas. As shown by the “cakie” example, augmented creativity tools can be “explainable,” and outputs can offer insights into the composition of the inputs. And, as seen in the Titular example, creativity tools not only offer meaningful outputs – they enhance human creativity itself. Given these factors, augmented creativity should be applied to the ever-growing mountain of research on COVID-19 with the potentiality of entering healthcare in its entirety. COVID-19 research, taken as a dataset, could potentially be fed into an augmented creativity model where it can be combined and recombined into new and effective solutions. While this use of augmented creativity is hypothetical, there are examples of combinatorial models used in literature reviews and analogy mining, and there are many potential applications in the field of healthcare.

**HEALTHCARE APPLICATION FOR CORONAVIRUS  
CASCADE**

One area that is particularly fitting for the application of augmented creativity is the research boom seen in 2020 and early 2021.<sup>13</sup> With unprecedented levels of journal and preprint publication, keeping up with constantly changing,

**FIGURE 3: THE COVID-19 PRIMER DATABASE VIA KAGGLE, OFFERS A LOOK AT THE INCREASE IN CORONAVIRUS JOURNAL PUBLICATIONS THROUGH APRIL 2021.**



<sup>12</sup> Zhu, Xiaojin, Zhiting Xu, and Tushar Khot. "How Creative Is Your Writing?" Paper presented at the Proceedings of the workshop on computational approaches to linguistic creativity, 2009.

<sup>13</sup> Else, How a torrent of COVID science changed publishing forever, 1.

sometimes conflicting, COVID-19 information is a challenge for researchers, health educators, and the interested public. Given the broad range of published topics – from lockdown mental health to epidemiological modeling – finding research that is specific, relevant, and timely is taxing.<sup>14</sup> Augmented creativity may be a solution to understand, synthesize, and recombine these data in meaningful ways. In fact, augmented creativity has already been used in an innovative literature review platform, termed Kaggle.<sup>15</sup>

Kaggle, a crowdsourcing platform and community designed to solve real-life data science, machine learning, and analytics problems, is part of the White House Office of Science and Technology Policy's call to action to create a machine-readable COVID-19 dataset. The findings offered by Kaggle are extracted from the COVID-19 Open Research Dataset (CORD-19) through a process defined by "machine learning algorithms with a human curation overlay."<sup>16</sup> The platform allows data scientists to interact with their peers to solve problems unique to COVID-19 and uses augmented creativity to organize a database for COVID-19 related articles and journals. So far, Kaggle only includes 3.5% of available COVID-19 research; however, with more funding, engagement, and promotion, this AI-driven view could become a hub for coronavirus research, review, and resolution. The potential power of Kaggle's COVID-19 database is expressed in the COVID-19 Primer, a tool Kaggle utilizes in its review.<sup>17</sup> This primer offers daily insights into papers being published, organized by research categories such as pathology, vaccines, and more. The primer's dashboard tracks publications over time and confirms the extension of the "coronavirus cascade" well into 2021.

Another Kaggle tool of relevance is the metaEvidence, which collates research related to COVID-19 therapies as well as vaccines.<sup>18</sup> The database is organized according to data quality, treatment type, patient class, and more. It also offers a variety of data displays, such as side-by-side bar graphs and Bayesian networks, as well as summarizes the efficacy and risks of each treatment or vaccine. A bar graph comparison of the most well-known vaccines is shown in Figure 4 on metaEvidence's database.<sup>19</sup>

<sup>14</sup> Else, How a torrent of COVID science changed research publishing, 1.

<sup>15</sup> Allen Institute. 2020. "COVID-19 Open Research Dataset Challenge (CORD-19)." Kaggle.com. 2020. <https://www.kaggle.com/allen-institute-for-ai/CORD-19-research-challenge>.

<sup>16</sup> Allen Institute, COVID-19 Open Research Dataset Challenge, 2020.

<sup>17</sup> "COVID-19 Primer." 2021. COVID-19 Primer. 2021. <https://covid19primer.com/dashboard>

<sup>18</sup> metaEvidence.org Team. 2021. "MetaEvidence COVID-19 - Live Meta-Analysis." [Www.metaevidence.org](http://www.metaevidence.org). Pharmacology and Toxicology Department, University Hospital of Lyon. 2021. <http://www.metaevidence.org/COVID19.aspx>.

## OTHER HEALTHCARE APPLICATIONS

On the horizon, augmented creativity may have a place in revolutionizing healthcare. The Institute for Healthcare Improvement's (IHI) profound Triple Aim Initiative has been rooted in the U.S. healthcare system since its launch in 2007.<sup>20</sup> The Triple Aim strives to decrease healthcare costs, enhance population health, and better healthcare quality and patient experience to improve healthcare performance. Augmented creativity may be applied in each of these continuous goals to further the Triple Aim agenda in new and innovative ways.

Augmented creativity holds the potential to completely reengineer current workflow processes to be more effective and efficient. Although unable to make something from nothing, the ability of augmented creativity to look at current administrative and medical workflow processes to *understand, synthesize, and recombine data* in unorthodox ways is perhaps beyond the scope of human creativity alone. Michael Hammer, American businessperson, supports the idea of using "the power of modern information technology to radically redesign our business processes in order to achieve dramatic improvements in their performance."<sup>21</sup> The traditional ways of business do not define the so-called *right* way of doing business. Ford is a prime example. In the 1980's, Ford contemplated reducing their accounts payable department by 20%, leaving 400 employees to run the department.<sup>13</sup> Ford considered this strategy until they realized their Japanese counterpart, Mazda, only employed five total accounts payable personnel. To compete on Mazda's level, Ford rejected the traditional way of handling invoices by cutting them completely and reengineering how they do business.

As widely discussed, the healthcare costs in the United States are so high is due in part because "the administrative monstrosity we have built costs us much money – by far the highest administrative costs of any health care system on earth."<sup>22</sup> Reengineering the structure of current healthcare administrative and billing systems with augmented creativity could result in radical changes that lead to hefty healthcare cost savings. Augmented creativity could combine current processes or completely throw out inefficient ones along

<sup>19</sup> metaevidence.org Team, MetaEvidence COVID-19 – Live Meta-Analysis, 2021.

<sup>20</sup> "The IHI Triple Aim." 2021. Ihi.org. Institute for Healthcare Improvement. 2021. <http://www.ihio.org/Engage/Initiatives/TripleAim/Pages/default.aspx>.

<sup>21</sup> Work, Reengineering. "Don't Automate, Obliterate." *Harvard Business Review* 68, no. 4 (1990): 104-12.

<sup>22</sup> Reid, Tom R. *The Healing of America: A Global Quest for Better, Cheaper, and Fairer Health Care*. Penguin, 2010.

with the traditional administrative structure that has taken hold of the healthcare system.

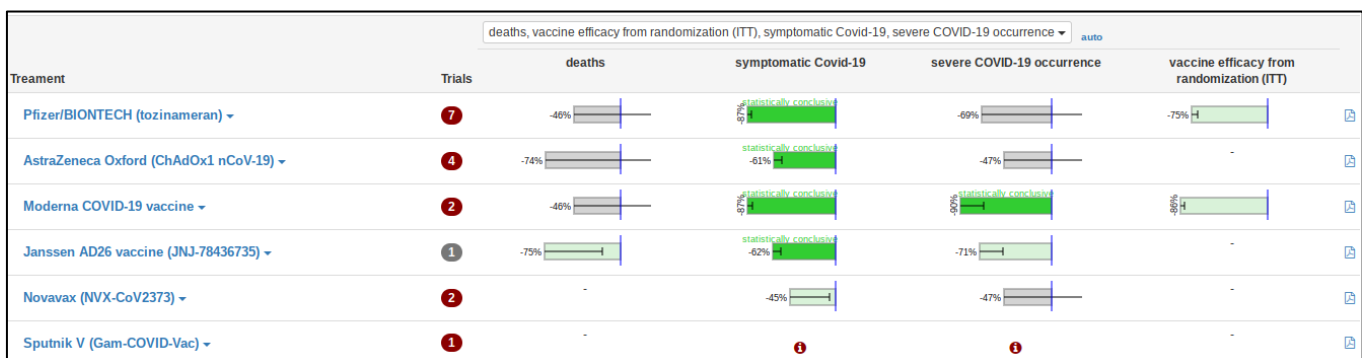
Augmented creativity is also relevant in population health measures. The IHI defines population health as “the health outcomes of a group of individuals, including the distribution of such outcomes within the group”<sup>12</sup> which may be denoted by geographical location, sociodemographic information, or even extracurricular activities such as participation in sports, under the condition that the participating population is defined. Health disparities in each defined population may be complicated and based on compounding factors that are difficult to distinguish and address despite the research on specific ailments or disease. Augmented creativity applied in these settings may pull solutions out of compiled patient information and may be capable of improving the health of that population. Take baseball players for example. Common baseball injuries across the defined population of baseball players are in the elbow and shoulder.<sup>23</sup> Augmented creativity applied from a physical therapy or surgical standpoint may result in solutions that not only prevent or fix these injuries but could even make better-performing players. Analogy mined solutions could be in the form of new, more efficient physical therapy exercises, enhanced or new products such as bands or sports tape, or different surgical techniques not previously explored. This same method could additionally be applied to other populations such as those with high prevalence of chronic disease and cancer. Ultimately, the application of augmented creativity as applied to healthcare could decrease health disparities and push for a healthier population.

The quality of care and patient experience has also been recognized as a primary focus in improving healthcare. Patient health is driven by a multitude of social determinants

that largely have nothing to do with the healthcare system itself. Patient health may be affected by chronic stress from societal discrimination, lack of education and wealth, food insecurity, and so on. These same determinants of health may also inhibit their ability for medical plan adherence, thereby decreasing the efficacy of any medical care that they do receive, resulting in poor outcomes and wasted resources. One literature review evaluating the factors of medication nonadherence found that the following examples have a negative impact on adherence: unemployment, white-collar employment, stigma of a disease, lack of family support, lack of social support, and fear of ailment disclosure.<sup>24</sup> This list is non-exhaustive, but nonetheless shows the layers of complexity that can interfere with the quality of patient care. For example, approaches to increase medication adherence in an unemployed patient would provide different results for the white-collar employee. Augmented creativity in these complex situations may supply individualized remedies for a patients specific set of interfering parameters, thus improving the quality of outcomes provided in their care plan. Here, augmented creativity may supply resources to mitigate negatively impacting constraints while boosting the positively associated reinforcements for plan adherence. Individualized patient care in this respect may not only strengthen the patient-physician relationship and improve individual outcomes but is the epitome of patient-centered care.

One forward-looking article relating to care quality, published by Stanford University for their Human-Centered Artificial Intelligence Spring Conference, involves using artificial intelligence to augment home-based care, a strategic move in healthcare from reactive to proactive care, and even to promote healthy childhood development.<sup>25</sup>

**FIGURE 4: THE META EVIDENCE DATABASE SHOWS A COMPARISON OF COVID-19 VACCINES**



<sup>23</sup> Ireland, Mary Lloyd, James Andrews, and Glenn Fleisig. 2019. “Baseball Injuries | Baseball Injury Prevention & Treatment.” Stopssportsinjuries.org. American Orthopaedic Society for Sports Medicine. 2019. [https://www.stopssportsinjuries.org/STOP/Prevent\\_Injuries/Baseball\\_Injury\\_Prevention.aspx](https://www.stopssportsinjuries.org/STOP/Prevent_Injuries/Baseball_Injury_Prevention.aspx).

<sup>24</sup> Kardas, Przemyslaw, Pawel Lewek, and Michal Matyjaszczyk. “Determinants of Patient Adherence: A Review of Systematic Reviews.” *Frontiers in pharmacology* 4 (2013): 91.  
<sup>25</sup> Waikar, Saichin. 2021. “How AI Can Augment Health Care: Trends to Watch.” Stanford HAI. Stanford University. April 1, 2021. <https://hai.stanford.edu/news/how-ai-can-augment-health-care-trends-watch>.

Several healthcare experts and other speakers moved to “explain AI’s ability to augment – not replace – critical human work.” After all, as Dr. Jock Murray thoughtfully recited “medicine is a human endeavor that uses science as a tool.”<sup>26</sup> The Stanford article goes on to outline current augmented solutions including a current application moving towards proactive care that predicts 30-day patient readmission rates. Microsoft Chief Scientific Officer, Eric Horvitz’s describes this innovation as: “designed to help physicians allocate special support during the original stay. To improve movement from data to predictions to actions... they built a new system that coupled machine learning (ML) with automated decision analysis; it considers intervention cost and likelihood of success and creates visualizations to help physicians understand system outputs and gain insights”.<sup>17</sup>

Horvitz’s explanation of this “readmission manager” tool sounds similar to (1) the definition of augmented creativity, and (2) the health outcomes associated with evaluating complex and compounding factors a patient experience. This is but one of the advances in healthcare innovation provided by augmented creativity highlighted in the conference.

Big or small, the outcomes of augmented creativity in the context of healthcare are sure to grow in the future. Augmented creativity is capable of revolutionizing healthcare aligned with the IHI’s Triple Aim framework in decreasing health costs, creating healthier populations, and improving the quality of healthcare outcomes for patients by utilizing artificial intelligence in creative and meaningful ways. Operationalizing augmented creativity will enhance the meaning of patient-centered care and provide individualized solutions to make healthier people.

### **CONCLUSIONS**

There has been a significant decline in return on investments in recent years in the United States, in part because the comparative benefits of human innovation have slowed. The trend provides a compelling reason to invest in advancements in augmented creativity which has been highlighted most recently during the COVID-19 pandemic

where a mountain of research published between 2020 and 2021. COVID-19 research represents potential innovations and solutions waiting to be unlocked via artificial intelligence and augmented creativity. Synthesizing this so-called “coronavirus cascade” is just one of many applications of augmented creativity, which combines human creativity and artificial intelligence to increase innovation and efficiency in the health sector. Although a relatively new concept, augmented creativity has been identified by well-known corporations as an emerging important technology. Augmented creativity has not yet been widely adopted by the healthcare sector; however, it offers many applications and fits neatly within the Triple Aim initiative in potentially decreasing costs, increasing quality, and benefitting communities overall. Investing in and operationalizing augmented creativity may solve a myriad of problems facing healthcare today; regardless of its current use, it is undoubtedly on the healthcare horizon. Identifying applications for this technology is, therefore, a task that researchers and clinicians should promptly prioritize.

#### **ACKNOWLEDGMENTS:**

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<sup>26</sup> Fitzgerald, Faith. "Medicine: The Greatest of Humanities." *Transactions of the American Clinical and Climatological Association* 126 (2015): 56.