



CONVERSATIONS IN FUTURE OF WORK: SIX KEY QUESTIONS FOR HEALTHCARE LEADERS

Discussion Paper

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Conversations in Future of Work: Six Key Questions for Healthcare Leaders

By: Marina S. Salis and Dr. Paula Rowland

Abstract

By looking outside of healthcare, what can healthcare leadership learn about the future of work (FoW) to prepare their future workforce? This discussion paper poses six key questions we need to answer to shape the future of healthcare work.

Introduction

Advancement and change have been longstanding pillars of the human condition. Evidence of this claim is demonstrated in what are historically referred to as periods of industrial revolution (IR). Though different interpretations exist of what is appropriately classified as a period of industrial revolution, a defining characteristic of these periods of change is their far-reaching consequences for economic organization and society. Some earlier examples include the introduction of steam power in the 18th century, being the first industrial revolution, followed by the transformative power of electrification in the 19th and 20th century. The third industrial revolution of the mid-20th century saw massive advancements in automation and computing power once again transforming the way we learn and work by, for example, supplementing physical labour through mechanization. In the current future of work discourse, scholars believe that the development, advancement, deployment, and impact of current and future technologies have led to a new period of revolutionary change [13]. Unique to other periods of technological advancement, this fourth industrial revolution, or “4IR”, is thought to be materializing differently than other periods of change given the scale of change [9], including the growing capability of technology and

automation to supplement and replace both physical and cognitive labour [15], as well as the enlarged span of who is disrupted by such change, touching labour markets, professions, tasks, and classes previously thought to be untouchable [18].

The healthcare sector specifically is one area in which this change is not only occurring, but could be classified as a forerunner of the development and adoption of these advancements: not only do they present an opportunity for improvement in patient care, but moreover are looked at as a potential solution to current challenges faced by the healthcare sector including workforce sustainability, rising health care costs, and an aging population [1]. The need for discourse amidst healthcare leadership is particularly poignant given that while we continue to see the development and adoption of technology in the health work space, and their promising potential for the promotion, protection, and restoration of health, we can also observe a prevalent gap in the regulatory and educational infrastructure necessary to successfully navigate this complex and rapid change, especially in Canada [16].

Yet, given that this discourse is highly interdisciplinary, healthcare literature is only one place for healthcare leadership to harvest knowledge from in order to inform development and preparation. Rather, looking outside of healthcare not only can better inform leadership of the scope of what needs to be considered, but moreover opens up the opportunity for collaboration across industries to create and preserve good work across the economy [19]. Thus, the aim of this discussion paper is to examine the intersections of the future of work and healthcare, and looks to white paper literature outside of healthcare to answer the following questions: what can healthcare organizations and leaders harvest from other FoW thinkers that will help shape the future of healthcare work? By looking outside of healthcare, what does this reveal about what is



currently missing in conversations about the future of healthcare work?

The Nature of Change

The type of changes in question discussed in this kind of literature is surrounding the *collaboration*, *displacement*, and/or *replacement* of human and machine through various forms of technology. Though the kinds and capabilities of technology continue to grow and change, there are two main forms of technological change and advancement prominent in white paper literature in which key forms of technology branch off from: *digitalization* and *automation*.

Primarily, *digitalization*, put simply, involves the translation of data and informational goods and service delivery into digital form [9]. While this term is more complex than stated, examples of this technology may be familiar to the layperson. Some examples include concepts like the *paperless workplace* or *digital archive*, in which all files are translated into digital form and stored in virtual database form, or the use of *quick response (QR)* and *barcodes* that store information and connect individuals to digital information when scanned through smartphones and other devices [12].

The second form of technological change is *automation*. While automation comes in many shapes and forms, these forms of technologies share a similar purpose in the augmentation and reduction of human intervention in production and service processes [18]. While digitalization is part of the futuristic narrative, the concept of automation is arguably the main contributor to current depictions of ultramodernist imagery of the future. Evidence of this change in the healthcare scene may be already quite familiar, such as the use of software and technology to automate business processes, including scheduling, staffing, regulatory compliance, and streamlined data management, to name a few.

These technologies have the most potential in supplementing or replacing human involvement in roles and/or tasks that are methodical,

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repetitive, or rules-based, historically geared towards physical tasks and labour [12]. Also under the purview of automation, however, are more “advanced” technologies, such as artificial intelligence that raise the proverbial bar to expand the scope of automation from *physical, routine-based* tasks to *cognitive, nonroutine* tasks such as intuition, problem-solving, and judgment. The capabilities of these technologies are limitless, producing outputs as simple as customer service responses to more serious processes such as diagnostic and prognostic modeling that can be used in patient care [12].

While the description provided is rather simplistic, it nevertheless provides a basic illustration of the kind of change in question in the future of work discourse. What is important to note is that these kinds of changes are not necessarily unfamiliar, but rather that the nature and scale of change are worthy of attention. Many of these technologies are already commonplace or emerging from technologies deployed in everyday work and life. The ‘future of work’ as a discourse, then, refers to these inquiries surrounding future change in the context of industry and labour, attempting to project not only *how* work within and across industries will change in the years ahead [11], but additionally, gives thought to whether they *should*



change, in what ways, and with what safeguards or responsibilities in place to manage the nature and impact of these projected changes. While the narrative in white paper discourse remains consistent in its commitment to technological determinism, meaning that such changes are inevitable and rapidly emerging, variation and ambiguity exists in what the future picture can and should look like. Though the topic is complex, the future of work discourse, in the medium of white papers, can be thematized into the exploration of three main dimensions of change [1]:

1) *Work Itself*: What is work? What does it consist of? What is its value? How is work done? What does it mean to “work”? How will/should work change and why?

2) *Workers/Workforce*: Who/what is performing the work? Who is impacted by change? What skills and education do they have/need? How will/should the workforce change and why?

3) *Workplace/Work Environment*: Where and when is work occurring? What is the structure of workplace relationships (e.g. employer-employee)? How will/should the workplace change and why?

Trends in Future of Work Discourse

While many fear the concept of an absence of human value and labour in the future of work, much conversation focuses on the preservation of human labour in periods of technological change through investment in various dimensions of human capital [13]. The traditional assumption is that high and low skill labour act as the key divide, where lower skill, routine-based jobs are most impacted, preserving the value of high-skilled, nonroutine labour [9, 15]. However, advances in technology into cognitive tasks and forms of work means that this divide is no longer clear cut, shifting the need for all areas of the workforce to prepare for new and differently

skilled ways of working. Most poignantly, companies need to find flexible and creative ways of adapting to this change given that the pace of technological change currently exceeds the pace of education and preparation of the workforce [13]. The remainder of this paper will seek to elucidate these relevant trends in future of work discourse, pulling from resources and white papers from FoW organizations and think tanks *outside* of healthcare to bring attention towards aspects of technological adoption that healthcare leadership should, but may not already be considering.

Unbundling, Rebundling, and Automation

A common theme in lay discourse is that the future of work will be met by a complete replacement or automation of whole *roles*, meaning the complete removal of human labour by technological advances [15]. While there is likely to be a reduction of demand for human labour in various settings, such that there may be fewer human inputs in certain processes [6, 15, 17], the literature focuses more on the idea of changing or breaking down various roles through skills to form new work as a way to create consonance between the benefits of technological advancement with the preservation of human capital [13]. Thus, rather than a *role-biased* labour market that focuses on the need and availability of particular kinds of labour positions, trends in FoW discourse suggest a *skill-biased* labour market in which investments in particular *traits* or *characteristics* is emphasized to prepare a robust set of workers and organizations for new ways of working in light of the reality and growing capacity of technologies such as automation [5].



The way in which this shift in roles is discussed is through the ideas of *unbundling* and *rebundling*. On the former, roles are broken up into task-based work, in which only certain aspects of the traditional job, being certain *tasks* are susceptible to automation [17]. Complimentary to this process, rebundling involves recombining the various tasks in question to create new work and ways of doing within existing roles [13]. Thus rather than focusing on particular types of jobs or roles, the focus on bundling suggests investing and educating in particular skills to perform the relevant tasks, specifically those skills that are complementary to automation, or are difficult to automate in and of themselves [9, 13]. Those roles most resistant to change are those not easy to unbundle [5], involving a unique compendium of tasks that require and operate most efficiently through the synchronous application of both higher and lower, routine and non-routine skills and tasks.

In the context of healthcare, the application of unbundling and rebundling could be said to fall within this latter gray category, in which health work doesn't seem to pull apart clearly in the same way as other industries that are traditionally 'revolutionized.' While there may be certain administrative aspects to healthcare roles served by the efficiency and precision of automation and digitization, the role of emotional, creative, and interpersonal skills demanded by not just health care work, but by the vision for *quality* and *holistic* healthcare make this demarcation and rebundling enigmatic. Moreover, given the intimate and consequence-heavy nature of healthcare, the picture is further complicated by asking not only what *can* be automated, but what *should* be automated, from an ethical perspective, to deliver healthcare that the consumer, being patients, want and can benefit from. While the range of possibilities of what can be automated or digitized is vast, it is not necessarily the case that all aspects of health work that *can* be automated are better served in that way. Healthcare leaders are challenged to think about the following question:

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Upskilling, Reskilling, and the Learning Workplace

The conversation surrounding skills in FoW discourse does not end, but rather starts with the concepts of unbundling and rebundling. Following from the idea of breaking roles into particular tasks are questions surrounding equipping workers with the particular skills that will be relevant to perform these various new roles and ways of work. Three core concepts repetitively emerge in the literature as methods of preparation for the future workforce: upskilling, reskilling, and the learning workplace.

Upskilling and reskilling share similitude in requiring a change in skill, but differ in their objectives. While upskilling requires workers to learn *new skills* in order to adapt and optimize performance in their current roles, *reskilling* recycles the skills of the worker and trains them to adapt to a *new role* [14]. It is important, then, for organizations to be aware of the *skill biased* nature of the future labour and employment market: while it is not skill or labour *replacing* in the sense that workers will maintain their role or have the opportunity to bridge into new roles, future labour markets will favor certain skills over others to bridge gaps between the pace of change, the abilities of the current workforce, and the pace of upskilling and reskilling [13].



The looming question, then, is what kinds of skills may be important for the future workforce? Primarily, the literature highlights an overall shift in importance from hard skills, being job-specific skills and requirements such as technological programming, to soft skills, being personal and foundational traits such as communication and management skills, problem-solving, critical thought, and creativity to offer a few examples [6, 17]. It is important to note that hard skills do remain relevant, in that emphasis on *digital skills* such as design and development remain important given the nature of technological change. However, the emphasis on soft skills is two-fold, in that within the context of upskilling and reskilling, the average individual may not possess advanced hard technological skills, and will need the opportunity to adapt in ways that allow them to partner with technology, manage technology, or perform roles and tasks that technology cannot. In addition to those examples mentioned, the literature highlights the importance of emotional, creative, and interpersonal skills such as empathy, compassion, relationship building, leadership, originality, and innovation [13, 15].

In tandem with upskilling and reskilling is the importance of opportunities to work and learn *simultaneously* to bring pace of technological change in better alignment with skilling and education [13]. This gives rise to the concept of the *learning workplace* where shifts in learning are designed for people who work, and learning while working [6]. How this will apply to healthcare organizations and the labour market is an interesting question, given that certain healthcare professionals are better positioned than others for the skill-biased nature of future work. For example, healthcare leadership and professionals not in front-line positions have more flexibility to learn while working, while those performing patient care may not have access to the same space, especially against the reality of labour shortage and burnout. Overall, the

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Precarious Work and Gig Economy

In addition to how work is performed, a central part of the FoW conversation is when and where work is occurring. Contemporaneous times have already seen an increase in fluid and new working arrangements given globalization and the ability for roles traditionally performed in-office to be translated to hybrid and remote arrangements. Future of work discourse follows a similar trajectory, discussing a continuing shift towards new forms of atypical employment that are not suited in a well-defined, predetermined time and place, including self-employment and freelancing, loosely translated to *gig-work* or *gig-economy* [4, 6, 17]. These latter terms refer to a proliferation of informal, paid, short-term, work over the traditional highly structured, long-term, formal work arrangements [17]. A separate but adjacent concept is *platform economy*, which builds off of gig-work, digitizing these short-term, contract-based roles and providing the infrastructure to perform them *remotely*. In a similar vein to the preceding sections, gig-work favors hiring for particular *tasks* as opposed to



whole jobs or wider occupational roles, following a familiar narrative of *Taylorism*, or newly *digital Taylorism*, in which whole processes or jobs are broken down into smaller tasks, and each task is standardized, routinized, and managed [13, 14].

The rise of atypical and nonstandard work arrangements, while expanding the labour market and broadening the scope of solutions to

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technological advancement, also comes with it the rise of destabilization and insecurity, causing consideration not only towards *gig-work*, but additionally *precarious* work [4]. While the definition of precarious work is broad, in this context it refers to these atypical forms of employment that are not well protected, unstable, or otherwise insecure. The shift towards *gig-work*, while discussed as positive for productivity, efficiency, and consonance with technological determinism, places onus on individuals to constantly find new employment at the termination or completion of short-term contracts in a skill-biased labour market, less the employer having the capacity to offer permanent, full-time, task-oriented work. This work can be seen as *para-subordinate* employment in which the individual, while being an independent contractor, is economically dependent upon a select client or clients, given the difficult reality of competition, monopoly, and time-resource limited service

provision [4]. Moreover, precarious forms of work are often ill-regulated or are becoming increasingly “uber-ized,” often leaving workers vulnerable and unprotected [2, 20].¹

For healthcare leaders, it is important to consider *all* forms of labour when considering policy, legislation, and infrastructure surrounding new forms of work [4]: how might atypical forms of employment such as platform and gig-economy impact healthcare work and what infrastructure can organizations put in place to create stability for healthcare workers amidst the rise of precarious and gig-economy forms of labour?

Surveillance and Monitoring

The rise in platform and gig-economy, and the accompanying return of Taylorism via digital Taylorism brings questions surrounding management of labour to the forefront of FoW discourse and trends. While a large amount of discourse focuses on the ability of technology to replace or displace the lay laborer, a growing amount of conversation focuses on their ability to perform executive responsibilities such as monitoring, surveillance, and performance evaluation [4]. On one hand, the person-focused discourse on management and surveillance suggests that human capital will shift away from routine aspects of administration, supervision, and evaluation towards non-routine managerial roles, including the observation of the technology itself [13]. While technology may focus on aspects of measurement, for example, human-monitoring objectives may look at person-focused individual assessment, or rewarding/punishment of performance. In this way, the person-focused side resists the narrative of self-willed, fully autonomous technology to one of *controlled* autonomy under a broadened scope of executive human responsibility [4].

¹ [a common example of precarious forms of work in the health care sector include personal support worker or PSW jobs](#)



On the other hand, the technology-focused discourse sees certain aspects of executive responsibility digitized and automated [4]. This is especially the reality for platform economy labour that provides the tools such as algorithmic management to automatically monitor through technology. These more quantifiable managerial functions would focus on elements of work that can be standardized and routinized, such as quotas and performance measurement, and monitoring of task progress [13].

It is important to note that the person-focused and tech-focused discourse is not mutually exclusive, but rather cooperative, with the human-oriented management utilizing data produced from tools such as algorithmic management to inform aspects of their role. A potential issue, however, is the scope of monitoring and surveillance and its implications for privacy, security, and confidentiality. Through tools such as hidden monitoring or keystroke monitoring,² both technology and management have the capacity to not only view personal data down to the number of characters typed in a day, but to algorithmically analyze these data to suggest performance evaluation or hiring/firing practices under the guise of productivity and efficiency. Thus, while these tools present an opportunity for healthcare leadership to allocate person-resources to more important tasks, it is important to question the scope of technological responsibility: what aspects of health work can and should be monitored algorithmically and how might this impact the way that people work?

² [keystroke monitoring or hidden monitoring are forms of employee and workplace surveillance that seek to measure productivity through metrics such as keystrokes and computer activity.](#)

³ The term "luddite" or "neoluddite" is vernacular most often used colloquially to describe an

[H]ow can healthcare leadership support both adoption and resistance, as well as adaptability and flexibility in the workplace?

Flexibility, Adaptability, and Adoption

A consistent theme recognized across all forms of change is that the continuous and rapid pace of innovation requires quick and flexible adaptation from both employer and employee [17]. In this way, the FoW discourse moves away from the concept of standardization to recognize the way in which both the workplace and the workforce should remain amenable to the needs and gaps in work as technological change continues to occur and grow in an upward exponential trend [9]. The need for the learning workplace is further bolstered by this consideration, creating opportunity for folks and institutions to be flexible and adaptable while avoiding the creation of precarious work. However, as aforementioned, it currently stands that development and innovation far outpaces the current education and infrastructure development of both the workplace and workforce [16], placing a large onus on *individual* responsibility to equip themselves and prepare for further development.

Not only this, but it's important to recognize that the individual responsibility relies on individual uptake and adoption. FoW discourse is often posited within the paradigm of technological determinism, being that these changes can and will inevitably happen no matter what; yet, more consideration should be given to the role of technological resistance or neoluddism³ at both

individual who refutes the use or adoption of technology. However, luddism and neoluddism are historically rooted terms referring to the movements of, and the resurgence of similar movements of the Luddites in previous periods of Industrial Revolution. [The IMF describes the resistance of the Luddites here.](#)



the individual, group, and organizational level: it is not just that the workforce *is* flexible and adaptable, but that they are *willing* to be such. Leadership ought to consider how the curve of adoption and polarization may impact how and whether they should uptake these technological advances, especially given the general sentiment of pessimism towards automation in many sectors of society [3].

The call for action, then, is towards leadership to not only find ways to support current individual study and skilling, but to moreover increase their adaptability and flexibility to balance the onus through the creation of the learning workplace to make space for learning-while-working: how can healthcare leadership support both adoption and resistance, as well as adaptability and flexibility in the workplace?

Disparity, Disadvantage, and Differential Impact

One of, if not the most important aspect of the FoW discourse is the underlining imperative of responsibility accompanying technological change: while much *can* change, it is not necessary that all things *should* change simply because there is the ability to do so. Rather, the suggestion is a growing conscience towards what sectors and aspects ought to be enhanced through technology, calling for prioritization of social, political, and environmental considerations over the traditional revolutionary narrative of monetization, productivity, and efficiency [4].

Historically, development and use of these technologies are justified using this latter narrative thread, evoking the language of improvement, growth, and betterment of society [4]. However, the increasing flexibility and

efficiency brought about by these changes also comes with a growing concern surrounding how these changes will create or exacerbate inequalities. Positive propositions involve the bridging of practical and geographic barriers faced by those searching for work by creating new opportunities and ways of doing [6]. However, aside from the practical challenge of the digital divide [6],⁴ the literature places emphasis on how this narrative of betterment is not necessarily uniform.

Literature highlights not only the differential impact and burden of change, but additionally the differential onus and responsibility on certain individuals and population groups to fill gaps created by the pace of change. This imbalance can already be observed along many different margins. For example, in consideration of age, adaptation and adoption is typically incentivized and designed towards younger sectors, creating barriers in the prospect of upskilling and reskilling for those deeper into their careers needing to pivot and adapt [15]. An additional example is the overrepresentation of minority groups in labour more susceptible to automation, such as female, black, and indigenous workers [15], and the

[W]hat sectors, tasks, and skills should be/should not be enhanced through the application of technology with sociopolitical and economic challenges in mind? How will healthcare leadership prevent and mitigate the stratification of impact and responsibility, especially towards vulnerable and minority labour sectors and populations?

⁴ [The term digital divide refers to the disjunct in adequate access to services such as internet](#)

[and technology in rural and remote sectors.](#) (resource: Future Skills Council November 2020)



underrepresentation of the same in growth occupations and labour pursuits [6]. Thus, while healthcare leadership is challenged with conceptualizing the type and nature of changes in the future of work, this conversation is embedded within a context and conscience that pays attention to differential impact, inequality, and stratification of work, workers, and the workplace [17]: what sectors, tasks, and skills should be/should not be enhanced through the application of technology with sociopolitical and economic challenges in mind? How will healthcare leadership prevent and mitigate the stratification of impact and responsibility, especially towards vulnerable and minority labour sectors and populations?

Concluding Thoughts: Harvesting Knowledge

While the preceding sections does not represent an exhaustive discussion on future of work trends, what they seek to elucidate are key elements of discourse highlighted by thinkers and companies dedicated to FoW outside of healthcare. In harvesting knowledge from outside of healthcare, leadership is not only better equipped to understand the fundamental source of the trickle-down impacts of new technologies to healthcare and healthcare work, but promotes and creates space for interdisciplinary conversation in this new technological age that is critical for achieving *good work* [7, 19].⁵

As we've seen, the need for collaborative, robust future of work discourse in the healthcare sector is exceptionally exigent given not only the reality of emergent technologies in contemporaneous healthcare settings, but the intimacy and fragility of what health and healthcare provides to society and the economy through employment, as well as the core ingredients for psychological, social, and physical well-being. While technological advance

is an exciting prospect to cultivate the promotion, protection, and restoration of health in novel ways, this narrative of change is juxtaposed to the reality of sectoral and social challenges currently faced by the healthcare market and workforce such as population growth, rising acuity, longer life spans, labour storage and migration, and poor infrastructure and funding to name a few [10].

In a positive light, these new technologies may reciprocally be a solution to some of these labour challenges, utilizing novel technology to not only improve productivity and efficiency, but to create opportunities to reallocate human labour towards the compassionate purpose that underpins healthcare work. The challenge for healthcare leadership, however, is to understand how these various broader trends essential to the successful adoption and integration of technology into the labour market map onto development within the health field given the uniqueness of health work: it is both low and high skill, creative and standard, giving rise to a paradigm of change that is similarly non-linear and variable in which technological advancement can destroy, create, and transform health labour simultaneously [10].

Six key questions for healthcare leaders emerge from this discussion, calling into question not only how these various trends apply to the healthcare labour market, but moreover how these different trends *can* work in concert to inform the future of healthcare work, and what *limits* these changes ought to operate within [4]:

1. How might, and how should, unbundling and rebundling apply to various healthcare roles to create harmony between human labour, technology, and the need for quality, holistic healthcare.

2. How might atypical forms of employment such as platform and gig-economy impact healthcare work and what infrastructure can organizations

⁵ Good work and good work frameworks aim to set out objectives and goals that companies and

regulators ought to preserve in consideration of technological disruption [as seen here](#).



put in place to create stability for healthcare workers amidst the rise of precarious and gig-economy forms of labour?

3. How can healthcare leadership and organizations create an infrastructure and learning workplace that allows for upskilling and reskilling all areas of the healthcare workforce, especially amidst social and sectoral challenges faced by the healthcare market contemporaneously?

4. What aspects of health work can and should be monitored algorithmically and how might this impact the way that people work?

5. How can healthcare leadership support both adoption and resistance, as well as adaptability and flexibility in the workplace?

6. How will healthcare leadership prevent and mitigate the stratification of impact and responsibility, especially towards vulnerable and minority labour sectors and populations?



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