THE HILL

Want to cut healthcare costs? Try automation

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In the intense and ongoing debate over federal healthcare policy, the cost of prescription drugs has been a central and constant issue. Lawmakers from both parties have put forward dizzyingly diverse range of plans that aim to reduce costs and respond to constituent's demands.

But there's one straightforward technical tool for reducing drug costs that hasn't appeared in the high-profile debate.

When it comes to manufacturing pharmaceuticals, Americans should consider investing in automation.

It's no secret: automation can be a dirty word in U.S. politics. It's often synonymous with computers or robots taking jobs and shuttering factories. There's some truth to this. The U.S. lost at least 5 million domestic manufacturing jobs over the past two decades, in large part due to automation.

Still, a great deal of automation is inevitable. And, if we make the right investments ahead of our global competitors, automation can work to our advantage — including in terms job creation and reductions in consumer prices.

Consider how automation is poised to change pharma manufacturing. The standard "analog" method of making drugs, batch manufacturing, is now more than 100 years old. This process requires numerous stops and starts, takes a lot of time, and involves serious risks of contamination or error.

In contrast, the new automated manufacturing method called “continuous manufacturing” makes it possible to produce medicines more quickly and efficiently, without interruption and with a great deal more real-time control. Continuous manufacturing can lower the cost of drugs significantly, by decreasing the unit cost, by accelerating product development, and by improving quality.

This kind of automation is unquestionably the future of pharmaceutical manufacturing. But, in this future, it's questionable whether the United States will lead — and, in turn, reap the rewards of new high-skilled jobs and reduced consumer prices.

While U.S. researchers — including those at Rutgers University's Center for Structured Organic Particulate Systems (C-SOPS), which I direct — have led the development of Continuous Manufacturing technologies, U.S.-based firms face challenges in making the transition to commercial practice.

In particular, small and medium sized manufacturers struggle with the upfront technological costs required to incorporate these new technologies into operations. And, yes, some stakeholders may fear the loss of old jobs associated with a transition from the previous system of pharmaceutical manufacturing.

Drug making is a microcosm of the broader manufacturing economy as automation and digitization take hold.

If we are serious about succeeding in manufacturing and taking advantage of digitization and automation, we will need to ensure that new transformative innovations are anchored in America and that we do more informed cost-benefit assessments when thinking about employment.

While automation eliminates the need for some operator positions, it simultaneously means the creation of better opportunities at multiple levels of skill — from engineering and programming to design, assembly, optimization, maintenance, and monitoring.

Government, industry, and universities should work together to standardize the technology processes and product development methods that can ensure the new methods take hold here first. Different sectors should also cooperate to incentivize and invest in education, workforce training, and technology adoption.

Automation isn’t the enemy. It simply means that manufacturing jobs follow real knowhow, not cheap labor.

This is a reality that we can turn to our advantage.

In today’s political arena, we should see proactive investments in advanced manufacturing not only as a tool to create high-value, high-skill jobs but also to address other overarching challenges — including the cost and quality of healthcare.

In a competitive world of constant innovation, these investments aren't optional.

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