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BioPharma Shakti Mission

New Talent Blueprint for Pharma and Health

INTERVIEW

With the announcement of the **BioPharma Shakti Mission** in the Union Budget 2026–27, India has signalled a strategic intent to emerge as a global hub for biologics and next-generation therapeutics. The mission goes beyond policy—it reflects a long-term vision to strengthen domestic research, scale up advanced manufacturing, and reduce dependence on imports in high-value biopharmaceuticals.

The biopharma sector today sits at the intersection of science, technology, and public health. From vaccines and biosimilars to gene therapies and precision medicine, it is rapidly redefining how diseases are treated and managed. With increasing investments, a growing startup ecosystem, and stronger industry-academia collaboration, the sector is poised to become a key pillar of India's knowledge economy. It also holds significant potential for job creation—ranging from research scientists and data specialists to regulatory experts and manufacturing professionals.

In this context, Senior Journalist Shri Chandan Kumar *Choudhary engages in a conversation with* ***Shri. Manoj Joshi, Secretary, Department of Pharmaceuticals, Government of India*** *on behalf of* Employment News. In this interview, Shri Joshi highlights a crucial perspective: for young people, the biopharma sector is not merely about employment—it is about contributing to a transformative phase of India's development, where innovation, healthcare, and economic growth converge.

Q: India has long been recognised as the "pharmacy of the world." In this context, which domains are likely to drive the next phase of its pharmaceutical growth?

A: India's next phase in pharma is really about moving from volume to value—from just making generics to creating innovative therapies. We will continue to be strong in affordable medicines, but the real opportunity now lies in areas like biologics, precision medicine, and advanced vaccines.

Put simply, we were known for making medicines at scale. Now, we need to be known for complex treatments and innovation. The idea is to combine our manufacturing strength with deeper scientific capability and grow into a global biopharma innovation hub.

Q. You have emphasised the need for risk-led R&D in the sector. What does this shift mean in practical terms for India's pharmaceutical ecosystem?

A. Pharmaceutical innovation is not a straight, predictable process—it involves uncertainty, long timelines, and continuous experimentation. Today's emerging therapies, such as cell and gene therapy or genome editing, operate at a very precise level, even down to individual genes. To keep pace with this, we need to embrace that uncertainty rather than avoid it.

In practical terms, risk-led R&D means accepting that not every experiment will succeed—and that's perfectly normal. In fact, one successful breakthrough can often justify many failed attempts.

For India, this shift requires building a supportive ecosystem: better research infrastructure, strong clinical trial systems, reliable patient data, and robust yet enabling regulation. While we excelled in generics due to clearer pathways, innovation and discovery demand a different mindset—one that allows researchers, startups, and companies to take calculated risks without being discouraged by setbacks.

If India aims to lead in discovery-driven growth, it must become comfortable investing in—and trusting—the process of scientific uncertainty.

Q. In your view, what are the key building blocks needed to move India from manufacturing strength to discovery-led innovation?

A. There are a few critical pieces that need to come together. First, we need patient capital—investment that understands science and is willing to support long-term research, not just quick returns.

Second, we need specialised talent. Not just researchers, but experts in areas like biologics, bioinformatics, analytics, regulatory science, and advanced manufacturing.

Third, strong clinical trial capacity is essential, because a discovery only matters when it can safely reach patients. Fourth, we need efficient and reliable regulatory systems—delays or uncertainty can slow down innovation significantly.

Finally, there is the need for better translation—bridging the gap between research and real-world products. India already has strong scientists and manufacturing capabilities. Now, we must strengthen the journey from idea to product to global market.

The real shift is this: earlier, we asked, "Can we manufacture at scale?" Now, we must ask, "Can we discover, test, approve, and deliver to the world?"

Q. The Union Budget announced Biopharma SHAKTI with an outlay of Rs. 10,000 crore over five years. What key gaps does this initiative aim to address?

A. Biopharma *SHAKTI* is designed to address a series of interconnected gaps in the ecosystem. One of the biggest is the "missing middle" in funding—where early research gets support, and large companies invest later, but many promising ideas struggle to move from lab to market.

It also focuses on building specialised talent in areas like cell culture, fermentation, quality analytics, and regulatory processes. Alongside this, it strengthens clinical trial infrastructure and regulatory systems.

Importantly, the initiative also looks at areas often overlooked—like delivery devices, packaging, and fermentation-based manufacturing. So, in essence, Biopharma *SHAKTI* is about creating a complete ecosystem—spanning funding, skills, trials, regulation, and manufacturing depth.

Q. How important are biologics and biosimilars for India's global biopharma ambitions?

A. They are absolutely central. If generics defined India's first phase of success, biologics and biosimilars will shape the next.

India has a strong opportunity here—not just scientifically, but economically as well. The cost of development, especially clinical trials, can be significantly lower in India compared to countries like the United States. This gives us a clear advantage in terms of both speed and affordability.

At the same time, many key biologic drugs used in treating cancer, diabetes, and autoimmune diseases are going off-patent in the coming years. This opens up a major opportunity for biosimilars.

The real challenge—and opportunity—is not just to produce these therapies, but to make them affordable and accessible at scale. In many ways, this decade could well belong to biologics, and India is well positioned to play a leading role.

Q. Where do you see the jobs of the future in the biopharma sector?

A. Biopharma is not just about lab scientists—it's a wide and growing job ecosystem. Opportunities will spread across research, manufacturing, clinical trials, data science, regulatory affairs, quality systems, and medical devices.

For instance, if India expands to a large number of clinical trial sites, it will create demand for roles like trial coordinators, biostatisticians, research nurses, data managers, and ethics professionals. On the manufacturing side, biologics need skilled professionals in areas like cell culture, sterile operations, and quality control.

So, this is a broad-based opportunity—open to students from pharmacy, biotechnology, medicine, engineering, IT, statistics, and event management.

Q. Is entrepreneurship becoming a viable career option in this space?

A. Absolutely. Today, young professionals are no longer limited to jobs in labs or large companies—startups have opened up a third pathway.

Entrepreneurs can work on areas like AI-driven drug discovery, diagnostics, biosimilars, or innovative drug delivery systems. Of course, biopharma startups come with challenges—long timelines, deep science, and strict regulation. But with the right policy support in funding, mentoring, and approvals, this space can see many more young innovators stepping forward.

Q. How can institutions, curricula, and training systems evolve to build a future-ready workforce for India's biopharma sector?

A. Building a future-ready biopharma workforce requires a comprehensive shift—across institutions,

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