Within the pharmaceutical industry, an intense pressure exists to progress potential therapeutic candidates through the pipeline quicker than ever before. With pharmaceutical laboratories being on the front line of drug development, the pressure for lab leaders to optimize the speed and efficiency of their operations is a core element of the bigger picture. When medicines have the potential to address critical unmet medical needs, the pharmaceutical laboratories need to work faster because the cost of delays is astronomical.

What drives productivity pressures in pharmaceutical laboratories?

- **Drug discovery**: Academic institutions have more therapeutic targets that may have a potential to be used in pre-clinical models. They tend to focus on the human condition and disease drivers, which introduces more complexity in analysis and testing. The molecules themselves undergo three phases of studies - Phase I, II, III - through treatments via clinical trials. Successful therapeutic candidates are usually pre-clinical models of drugs to treat serious and life-threatening conditions and expedite the review of regulatory authorities.

- **Drug development**: The molecule has an end of Phase III trials. Ultimately, at the end of Phase III trials, the medicine is ready to run an independent, blinded survey to support the results. The survey can help pharmaceutical laboratories understand the challenges, pain points, and goals for the future of pharmaceutical laboratories.

- **Drug delivery**: The medicine is now up to the regional and country regulatory reviews. For drugs to be approved in India, China, South Korea, and USA, the medicines need to go through the same way as the existing medicines. However, if a medicine has been approved in one of the 7 countries - Germany, Switzerland, Austria, Israel, China, South Korea, and USA - then many medicines were surveyed.

- **Laboratory leaders**: A survey conducted by Agilent and Frost & Sullivan estimated 83% of lab leaders find their current workflow requires optimization. The survey also showed 70% of lab leaders say one of the most common strategies they are implementing to improve productivity is quick but the survey also shows that more than 65% of laboratory leaders would welcome new and innovative laboratory equipment to increase laboratory efficiency.

- **Industry trends**: The rise of generic medicines is causing pressures for lab leaders to find new ways to manage the sample chain of custody. Agilent Technologies is committed to supporting pharmaceutical laboratories in their mission to streamline laboratory workflows and aid laboratory leaders in meeting their organizational and personal goals… quickly!

Promoting efficiency to improve lab productivity and economics

- **Drug discovery**: Academics and industry are investing heavily in drug discovery. In 2018, more than $3 billion USD were spent on drug discovery in bio-tech and CRO laboratories.

- **Drug development**: Only 1 out of 10,000 medicines studied, will end up being brought to market. The technology consultant with more than 30 years of experience in the industry, Dr. Richard Ladd, is an independent pharmaceutical technology consultant.

- **Drug delivery**: The rise of generic medicines is causing pressures for lab leaders to find new ways to manage the sample chain of custody. Agilent Technologies is committed to supporting pharmaceutical laboratories in their mission to streamline laboratory workflows and aid laboratory leaders in meeting their organizational and personal goals… quickly!

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