

Lille, June 1st, 2021

1st in Europe at the Lille University Hospital A robot for the preparation of injectable chemotherapies

With the installation of the RIVA (ARxIUM) robot, the Lille University Hospital affirms its commitment to innovation for the benefit of patients and hospital staff. It becomes the first establishment in Europe to be equipped with this high-tech robot for the manufacture of injectable chemotherapies. This robot is the only system offering a complete preparation process, from automatic component recognition to labelling of finished products, without any human intervention, thus limiting the risk of errors and contamination. The acquisition of this machine meets a double objective: to reduce the waiting time of patients before the injection of their chemotherapy and to improve the safety of people, with the benefit of transferring the skills of pharmacy assistants to missions with higher added value.

Over the past ten years, the number of injectable chemotherapy bags prepared at the Lille University Hospital has increased by nearly 60%. With a growing demand and a dedicated unit planned to produce 50,000 preparations per year, it became necessary to increase and automate the manufacturing of these treatments, while guaranteeing the safety of staff and patients. This will be the mission of the new RIVA robot (ARxIUM), which was commissioned at the beginning of the summer. The Lille University Hospital thus becomes the first health establishment in Europe to be equipped with this robot and to use it for chemotherapy preparations.

COLLABORATIVE ROBOTICS FOR HEALTH CARE

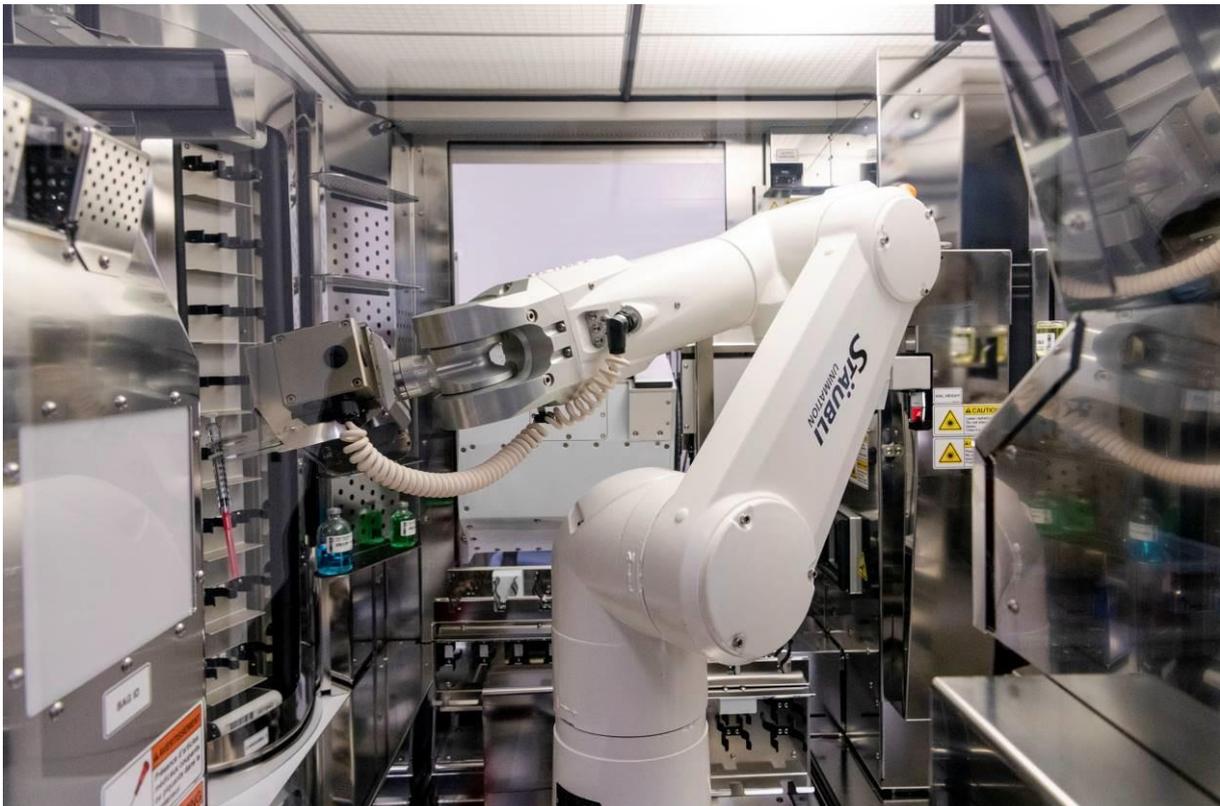
Currently, the manufacturing of these treatments at the Lille University Hospital is carried out by a team of 7 preparers on average per day. The role of this new robot will be to take charge of the most repetitive or dangerous tasks that are at risk of error, in strict compliance with current good preparation practices. This is what we call "collaborative robotics" (or "cobotics"): a technology that uses robotics, mechanics, electronics and cognitive science to assist professionals in their daily tasks. In concrete terms, **the use of this robot will allow the preparers to concentrate on the most complex, rewarding and stimulating tasks**, thus improving their working conditions and their safety. The acquisition of the RIVA robot will also increase productivity in the manufacturing of these treatments.

For the patients followed at the Lille University Hospital, the benefit is also important, since it is part of the University Hospital's project to **reduce the waiting time before the injection of their chemotherapy, by accelerating the manufacturing process.**

INCREASE THE PRODUCTIVITY OF CHEMOTHERAPY BAGS WITHIN 3 YEARS

The use of the RIVA robot will be rolled out gradually over 3 years, increasing from 18,000 preparations per year at the end of the first year of operation, to 27,000 per year after the first 3 years. **The production of the first chemotherapy bags will take place in July.** The May-June period is devoted to the qualification of the robot and the training of the teams.

THE RIVA ROBOT IN PICTURES



Contact
Presse

Direction de la Communication du CHU de Lille

Audrey STANEK

Tél. (ligne directe) : 03 20 44 49 23

Tél. (secrétariat) : 03 20 44 60 36

Mail : audrey.stanek@chru-lille.fr

APPENDIX - PRESENTATION OF THE RIVA™ ROBOT

The preparation of chemotherapy is a delicate activity, and must consider the safety of professionals and patients.

The design of the RIVA robot meets the constraints of chemotherapy preparation, the requirements of hospital pharmacists, and the rules of good practice. The RIVA robot has been developed by ARXIUM to deliver doses with extreme precision, ensuring all controls during the preparation process, in order to avoid errors as well as chemical or bacteriological contamination. These risks were determined through interviews with 250 hospital pharmacists. The next step was to find technologies to prevent and avoid these risks. For this reason, the RIVA robot has been awarded about 20 patents.

In a context of significant increase of chemotherapy production volumes, the challenge for the hospital pharmacy is to produce in volume, bags and syringes for intravenous administration, taking into account strong regulatory constraints.

The RIVA robot is a machine isolated from the room where it is installed, and in which a unidirectional downward laminar flow circulates, allowing very few particles to circulate (Class A air). A robotic arm ensures all the movements of the components in the preparation chamber for the realization of the mixtures.

The RIVA robot has five major advantages:

1. A large loading capacity that can, depending on the case, exceed a hundred components,
2. Recognition of all the components of the preparation without any human intervention other than loading the machine,
3. Powerful ventilation renewed 600 times per hour to maintain air quality at all times,
4. The return of a labelled finished product with barcodes and information necessary for the hospital to be able to trace it, thanks to two printers located in a compartment next to the dose preparation area. The addition of printers is a real technological challenge, as particles from the printing could contaminate the preparations. The RIVA robot is currently the only solution that integrates labeling into the dose preparation process without any human intervention,
5. Accuracy of doses thanks to systems available in the preparation chamber (optical readers, scales, high intensity UV port for disinfection of puncture areas).

To date, the RIVA robot has prepared more than 11 million doses (chemotherapy and non-chemotherapy). Thanks to a state-of-the-art design, no error or contamination has been reported to date.

ARXIUM™ is an American-Canadian company that develops automated solutions that improve safety, productivity and inventory management in the pharmacy. ARXIUM™ is the developer of the RIVA™, the only fully automated high capacity system for intravenous dose preparations currently on the market.

www.arxium.com



Direction de la Communication du CHU de Lille

Audrey STANEK

Tél. (ligne directe) : 03 20 44 49 23

Tél. (secrétariat) : 03 20 44 60 36

Mail : audrey.stanek@chru-lille.fr