



Grenoble Hospital aimed to improve the management of patients presenting with chest pain at its Emergency Department

University Hospital of Grenoble Alpes



Grenoble, France



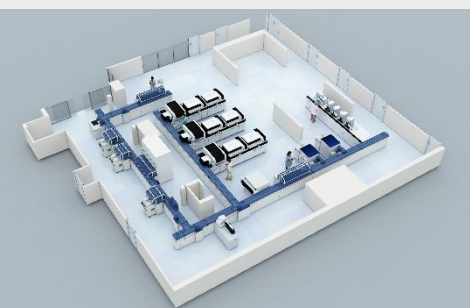
Emergency Department and Mobile Intensive Care Unit

- Serves a population of 600,000
- 55,000 patients visited the ED in 2024, and 6,000 were closely monitored (scoped)

For common clinical presentations such as chest pain, blood samples are collected by trained nurses prior to medical evaluation, in accordance with pre-authorized medical directives — streamlining care, improving efficiency, and enhancing patient outcomes.

Biochemistry and Immunoanalysis Unit/Biochemistry Laboratory

- Aptio Automation
- 3 Atellica Solution systems
- Menu of 181 different assays
- Volume of 3.9 Mil. tests per year
- Up to 3600 tubes per day on Aptio Automation
- Up to 2200 tubes per day on 3 Atellica IM Analyzers
- At peak : 320 tubes/hour on Atellica Solution
- About 56 000 cardiac troponin (cTn) tests per year (43% of the requests from ED)
- Pneumatic tube transport of blood samples



Challenges

Chest pain is one of the most common reasons for visits to the emergency department (ED), yet only a small number of these patients are diagnosed with acute myocardial infarction (AMI), highlighting the challenge of accurately identifying those patients with AMI^{1,2} with limited resources in overcrowded EDs.

Timely delivery of cTn results to safely and rapidly rule out AMI in patients presenting to the ED with signs and symptoms of acute coronary syndrome (ACS) without ST-segment elevation (NSTEMI) on electrocardiogram.



Risks

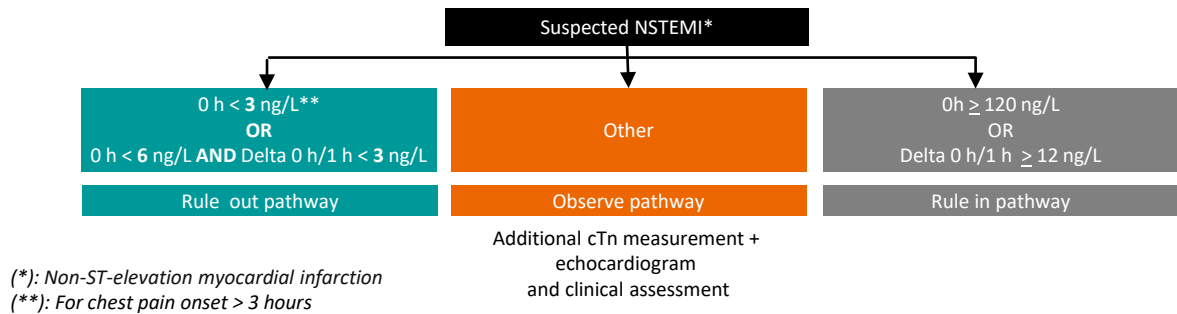
- Misdiagnosis of acute myocardial infarction (AMI)
- Patients' readmissions due to missed AMI or major adverse cardiac event (MACE) within 30 days
- Too many patients with elevated cTn results referred to the cardiology department
- Delayed clinical decisions due to prolonged turnaround times (TAT) for cTn results from the laboratory

[Learn more about the Atellica IM High-Sensitivity Troponin I \(TnIH\) Assay](#)



Solution: Atellica IM High-Sensitivity Troponin I (TnIH) Assay

- **Atellica IM High-Sensitivity Troponin I (TnIH) Assay** is a proven, true high-sensitivity cardiac troponin I assay with fast, accurate, and actionable test results in 10 min³
- Potential Atellica IM TnIH assay 0h/1h algorithm from European Society of Cardiology (ESC)^{3,4}



Grenoble Hospital successfully implemented a 0h/1h ESC protocol, enabling clinicians to improve the triage of patients with chest pain at ED



Outcomes

- ✓ **Predictable and fast TAT* for cTn results**
Less than 60 mins
 - 56 % less than 45 mins
 - 29 % between 45 and 60 mins
- ✓ **High precision at low cTn concentrations**
Repeatability
 - CV% = 7,78% at 6,8 ng/L**
 - CV% = 5,4% at 3,3 ng/L***-- SD = 0,82 ng/L

1

Internal evaluation demonstrated Atellica IM TnIH assay precision for the measurement of low cTn concentrations

2

Optimization of the sample management workflow led to the successful implementation of the new pathway without additional resources or equipment.

3

Implementation of the 0 h/1 h ESC protocol with a laboratory hs-TnI testing solution enabled us to improve the management of patients at the ED

"After the ESC released new guidelines for the management of ACS, including 1- and 2-hr protocols for suspected NSTEMI, we reached out to our laboratory specialists to figure out how we could bring this approach into our hospital as quickly and effectively as possible. We wanted to enable the ED doctors to get rapid troponin results to support safe, efficient triage and faster rule-out of more patients and aim to improve the patient experience — all in line with the latest clinical guidelines. One year later, we see the benefits of using a 0-1hr protocol in our routine practice."

"We first confirmed the precision of our Atellica IM TnIH assay at 3 and 6 ng/L, the key cTn concentrations to rule out AMI with this assay in the ESC 0 – 1 hour protocol. Then, by leveraging the capabilities of our automation track, Atellica IM Analyzers and IT solutions, we prioritized the ED requests eligible to the rapid protocol. Throughout the implementation phase, we worked closely with our ED colleagues to tailor the protocol and support its adoption. Today, we're able to deliver fast and predictable turnaround times for troponin, sustainably."



Dr. Nicolas Segond, MD
Emergency Department and Mobile Intensive Care Unit



**Dr. Dora Guergour, PharmD, PhD,
& Dr. Carole Chirica, MD**
Biochemistry Laboratory,
Institute of Biology & Pathology

(*): Time between sample registration in the lab and reporting of results to physicians
(**): Biorad Cardiac Advance Control – (***) : Serum pools
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References

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The statements by Siemens Healthineers' customers described herein are based on results that were achieved in the customer's unique setting. Because there is no "typical" hospital or laboratory and many variables exist (e.g., hospital size, sample mix, case mix, level of IT and/or automation adoption) there can be no guarantee that other customers will achieve the same results.

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