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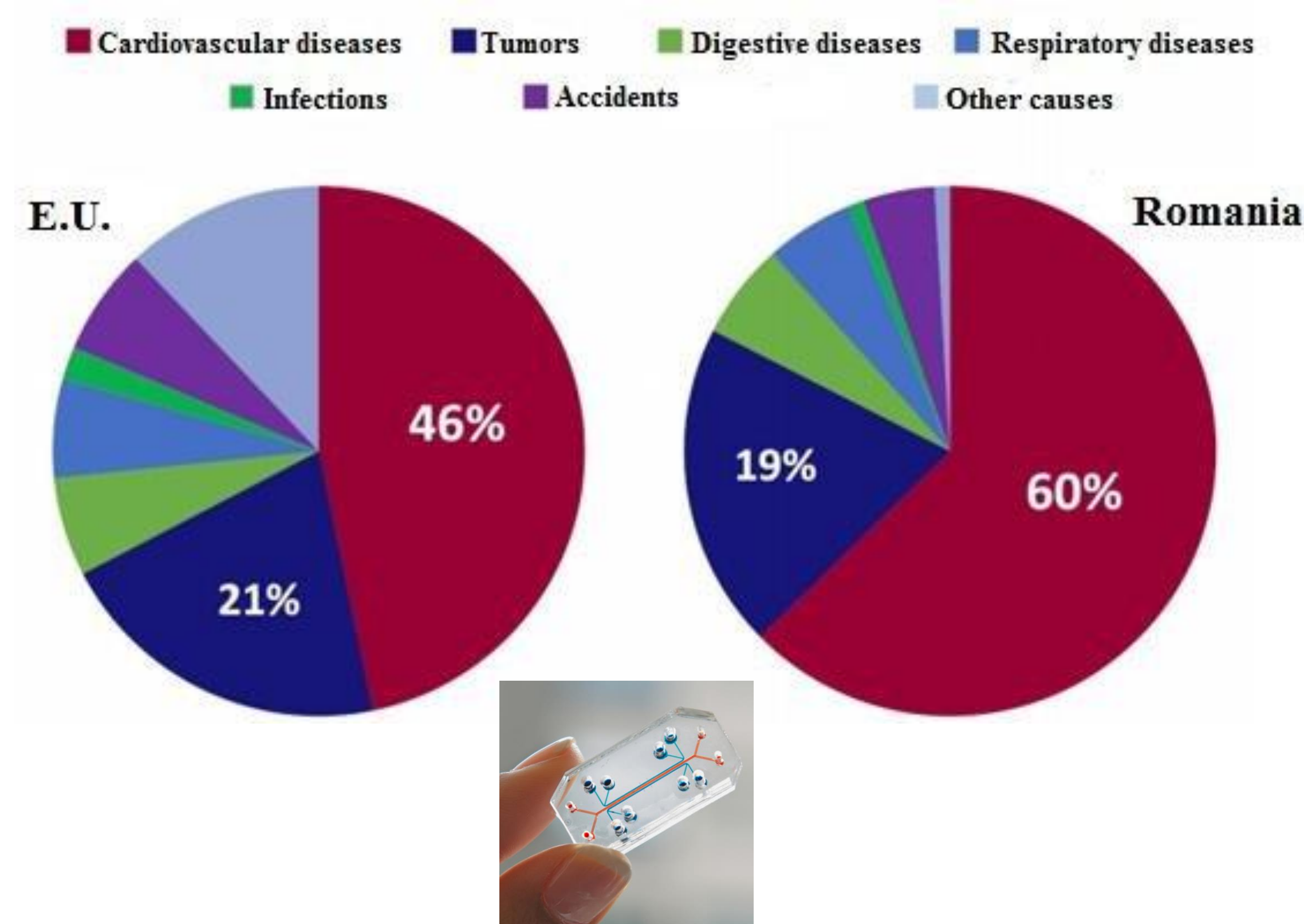
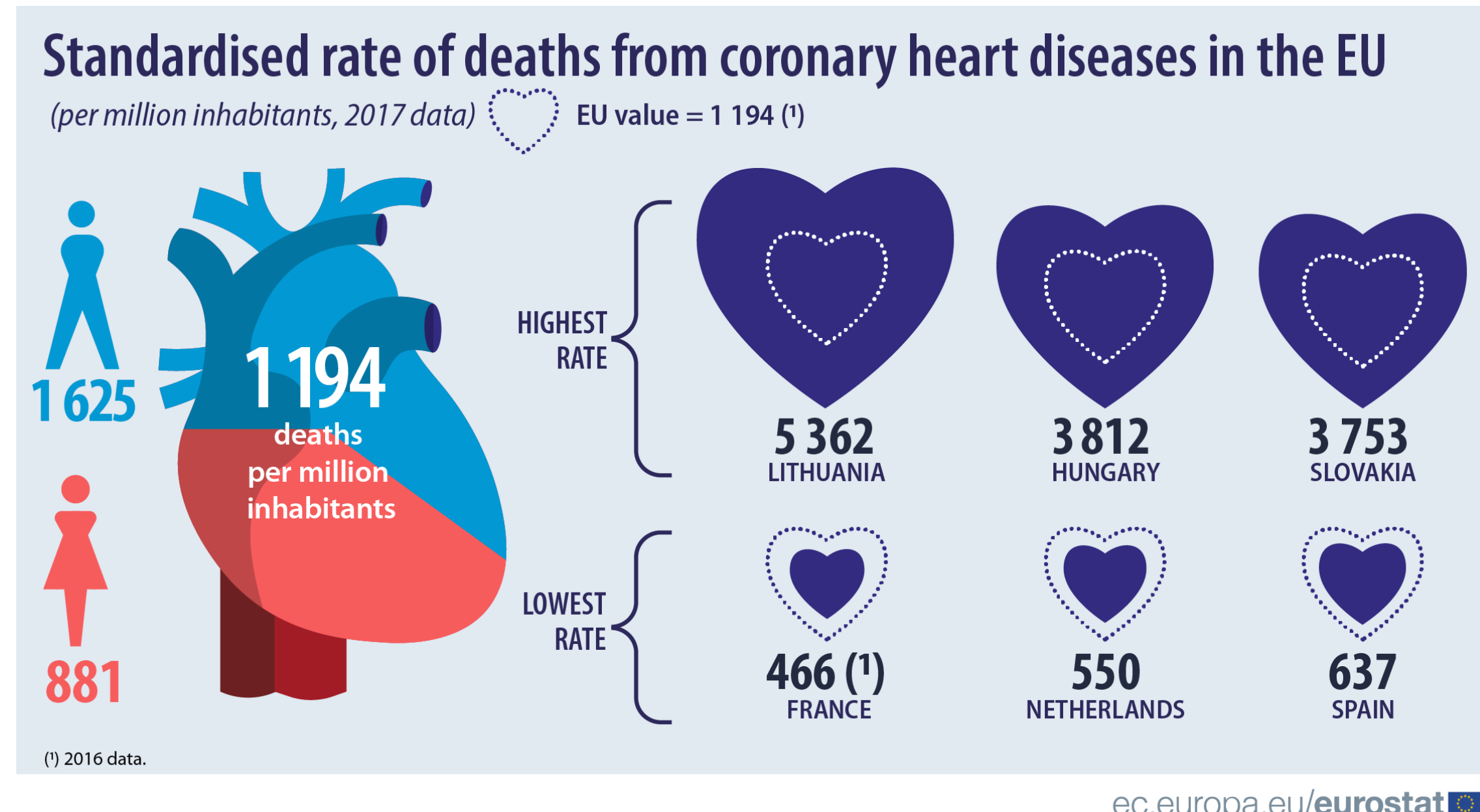
The Critical Role of Nano-biotechnology in Cardiovascular Disease Management

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Abstract: The population's health condition is a critical problem that concerns people with these diseases and has significant implications, involving various related fields (e.g., medicine, nutrition, biotechnologies, pharmacists, and others). Regarding world health statistical evaluation, over 7% of total deaths have a cardiovascular cause (mostly ischemic heart disease) which is a critical global problem. Lately, also nono-biotechnology came with solutions even on this medical field, having very good results in prevention, diagnostic and therapeutically treatments.

• Cardiovascular disease – high incidence that become a global, critical problem

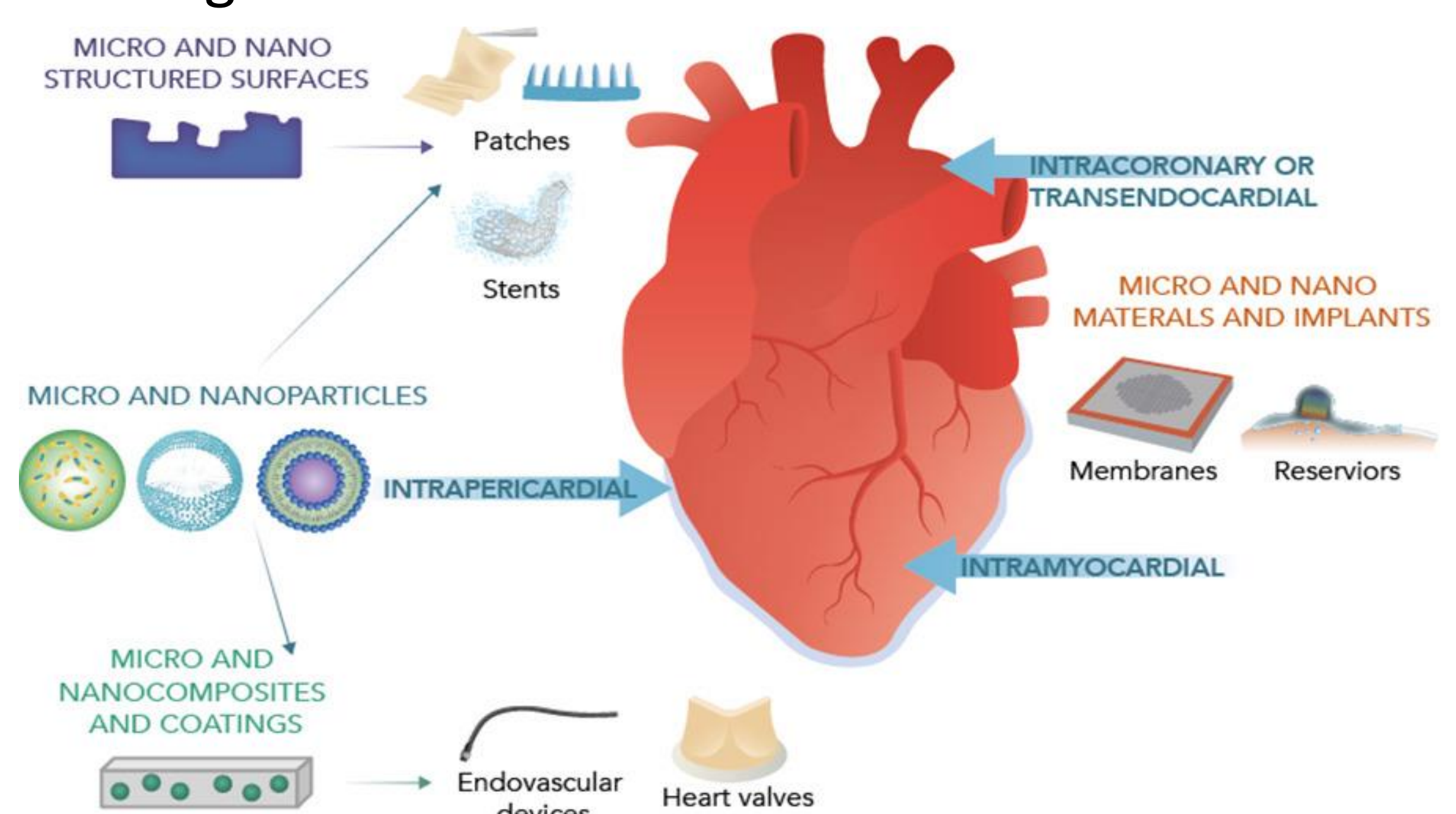
- In Europe, Romania is the leader in mortality due to cardiovascular diseases (CVD) with more than 100 deaths at 100,000 people, compared to Europe average of 44 deaths at 100,000 people.
- In Romania, CVDs are the first cause of death, with more than 55% of all deaths, and one people die every 30 minutes of CVD.



Nano-sensors capable to early detect heart attack
(a biochemistry, electronic & physic approach)

• Nano-biotechnology in cardiology

- There is a fundamental need for prevention, early diagnosis and treatment of cardiovascular diseases.
- Nano-biotechnology engineering comes with innovative solutions:
 - ✓ nanosensors, magnetic nanoparticles, per-fluorocarbon nanoparticles, nanolipoblockers,
 - ✓ encapsulated drugs in biodegradable nanoparticles, nanofibers, and nanodevices,
- are just a few of the diagnostic and treatment tools in a new generation of medical management of CVD.



• Conclusions

- nano-biotechnological inclusion and integration in emerging technologies found large application in various domains
- one example of nanoscience are nano-sensors in medicinal research are fast emerging, particularly in heart ailments, being able to wirelessly convey the signal to physicians for rapid diagnosis and treatment.