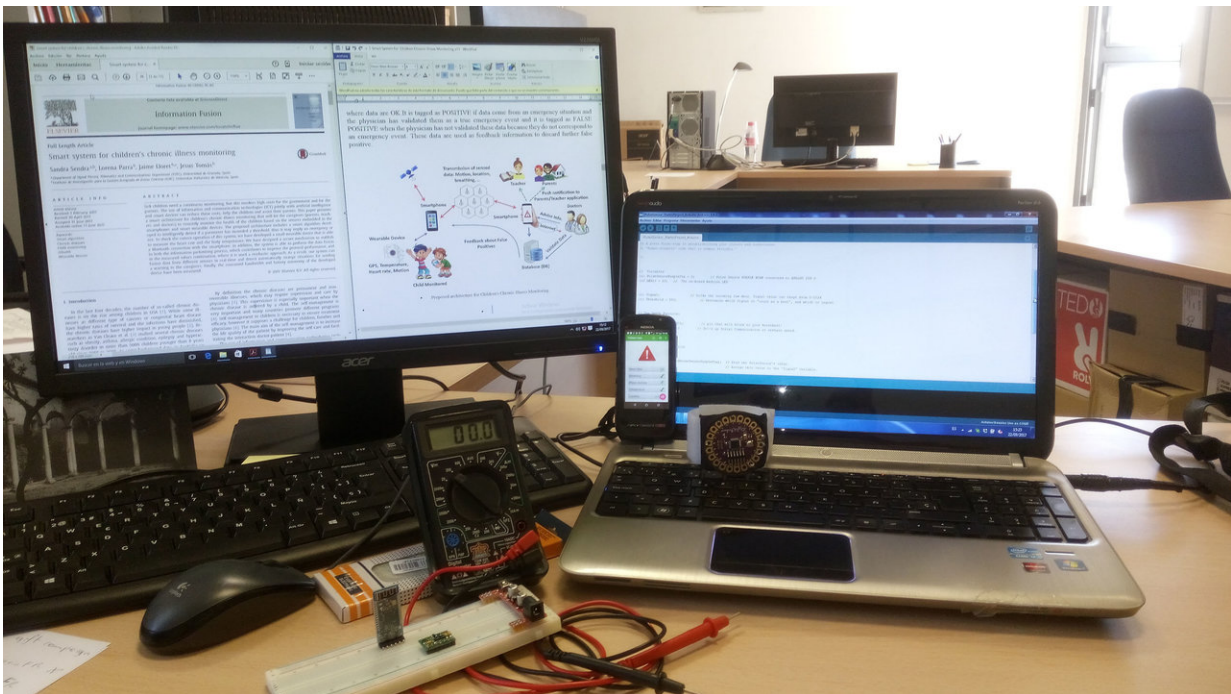


Researchers design a new smart system for children's chronic illness monitoring

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The connection between the portable device and the smartphone is made via Bluetooth, and the child's smartphone is connected to the parents' through the mobile network. Credit: University of Granada

Researchers from the University of Granada (UGR) and the Universitat Politècnica de València (UPV) have designed a new smart system for monitoring children who suffer from chronic illnesses like asthma. The system consists of a small portable device connected to a smartphone,

which allows continuous and accurate measurement of parameters such as heart rate or body temperature, among others. This would help parents, teachers and doctors to be informed about the child's condition at all times.

According to the UGR and UPV researchers, the system is controlled by a smart algorithm that autonomously detects if a parameter has exceeded a certain threshold that could imply an emergency. The [portable device](#) is connected to the smartphone via Bluetooth, and then linked to the parents' phone through the mobile network.

The system receives information from all the sensors that comprise the equipment, it merges and combines data, and processes and packetizes all the information. Then the system analyzes the data and determines if there is any situation that needs assistance. "This allows for more accurate responses when emergency situations are detected. If the system detects any anomaly, it sends an alert to parents, teachers and doctors in charge of the child," says Jaime Lloret, director of the IGIC research institute of the Gandia campus (UPV).

Among the advantages of this system, the researchers say that it helps to reduce the number of [false positives](#), improving the accuracy with respect to existing systems. "Besides," Lloret adds, "it is not tied to any manufacturer, that is, it can be used with any smartphone. The only thing necessary is to install the app we have developed on a phone with Bluetooth. Therefore, it is more economical and affordable for all families."

UGR researcher Sandra Sendra adds that using this type of technology "can improve medical care and reduce the number of hospitalizations of children when episodes of these chronic diseases occur, as well as shorten hospital stays thanks to a quick response."

UGR and UPV researchers are currently collaborating with several hospitals in the Valencian Community to implement their system for children's chronic illness monitoring. This paper has been published in the *Information Fusion* journal.

More information: Sandra Sendra et al. Smart system for children's chronic illness monitoring, *Information Fusion* (2017). [DOI: 10.1016/j.inffus.2017.06.002](https://doi.org/10.1016/j.inffus.2017.06.002)

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