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FOUR YEAR DATA CONFIRMS VALUE OF CONTINUA CERTIFIED DEVICES TO FACILITATE POSITIVE CARDIAC OUTCOMES IN DISASTER RECOVERY

Published in the *Journal of Clinical Hypertension*, Study Represents First Long-Term Follow-Up of Home Monitored Blood Pressure Following a Disaster

ARLINGTON, VA (February 20, 2017) – A study published in the *Journal of Clinical Hypertension* demonstrates the value of the Continua certified devices to facilitate sustained positive outcomes in disaster recovery, the [Personal Connected Health Alliance](http://www.pchalliance.org) (PCHAlliance) announced today. The study documents outcomes from the Disaster Cardiovascular Prevention Network (D-CAP), a Continua certified remote monitoring network developed to monitor and triage care for patients at risk for cardiac events following the Great East Japan Earthquake of 2011. Studies have demonstrated increases in cardiac events in the immediate hours and weeks after an earthquake.

Continua certified devices have been tested for compliance with the Continua Design Guidelines, a consensus-driven, non-commercial and internationally recognized framework for user-friendly interoperability of personal connected health devices and systems, published annually by the Personal Connected Health Alliance.

"Study authors concluded that D-CAP saved lives," said Patricia Mechael, PhD, Executive Vice President, PCHAlliance. "User-friendly connections between Continua-certified devices reduced device and data integration time when it was medically critical. The Continua-certified network approach directly enabled positive outcomes for patients and demonstrated cost savings for vendors participating in the network."

The D-CAP study (Nishizawa et al, "Strict Blood Pressure Control Achieved Using an ICT-Based Home Blood Pressure Monitoring System in a Catastrophically Damaged Area After a Disaster." *J Clin Hypertens*. Vol 18, Issue 7, July 2016) represents the first long-term follow up of home-monitored blood pressure following a disaster. Five years after the Great East Japan Earthquake, the network remains operational. The program consisted of examinations and risk assessments to stratify high-risk patients, defined as having systolic blood pressure above 180 mmHg. Screening of 1,500 evacuees identified 400 people with elevated cardiac risk, who were enrolled in the D-CAP program (26.6% of screened evacuees). Patients with persistent symptoms were evaluated by physicians and prescribed

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oral medications as needed. D-CAP registrants received electronic identification cards and were encouraged to measure their own blood pressure at automated stations within the evacuation camp. Data were sent via wireless communication to a data server and relayed to Jichi Medical University, about 200 kilometers away. Clinicians monitored the data and alerted on-site physicians by phone of any significant developments. Subsequently, high-risk patients were moved from the evacuation camp into temporary housing provided by the government and given individual blood pressure monitors that store a month of readings. Data could be downloaded at the hospital and then uploaded to the D-CAP data center and shared with the survivors' attending physicians.

Of the original participants, 341 hypertensive participants continued to monitor their blood pressure for four years after the D-CAP program was established, with data stored in the cloud. Every one of the 400 "high risk" D-CAP evacuees was still living at the time the study was published. Of the 341 survivors who monitored their blood pressure over the four-year period, blood pressure decreased from an average of $151.3 \pm 20.0 / 86.9 \pm 10.2$ mmHg to $120.2 \pm 12.1 / 70.8 \pm 10.2$ mm Hg, which study authors define as 'strict control' of blood pressure, and superior to results typically obtained from monitoring via physician office visits. Further, while winter seasonal peaks in blood pressure are commonly acknowledged in cardiology, the amplitude of season blood pressure variation was decreased and the duration from the lowest summer blood pressure values to the winter peak blood pressure values was gradually prolonged over the course of follow-up.

D-CAP participating companies and their component devices are: A&D Medical - Automatic blood pressure monitors; Alive Inc. - Gateway firmware; Ryoto Electro Corp. - data server; Panasonic – clinical PC; Toppan Forms - Patient ID Cards; Qute - Web application development; Intel - Project coordination.

D-CAP component products were certified according to the Continua Design Guidelines (CDGs) previous to establishing the network, facilitating a time from launch to conception of just two weeks, or 12 man-weeks, at a cost of USD 27,000. In interviews conducted with participating companies, it was estimated that without pre-existing interoperability, launching the D-CAP program would have taken twelve weeks, or 72 man-weeks, at a cost of USD 166,000. According to these estimates, deploying interoperable technologies reduced launch time by 84%, or ten weeks, and saved USD 139,000.

The [D-CAP case study](#) is available for download on the PCHAlliance web site.

About the Personal Connected Health Alliance

The [Personal Connected Health Alliance](#) (PCHAlliance) aims to make health and wellness an effortless part of daily life. The PCHAlliance, a non-profit organization formed by [HIMSS](#), believes that health is personal and extends beyond healthcare. The Alliance mobilizes a coalition of stakeholders to realize

the full potential of personal connected health. PCHAlliance members are a vibrant ecosystem of technology and life sciences industry icons and innovative, early stage companies along with governments, academic institutions, and associations from around the world. To support its vision, the PCHAlliance convenes the global personal connected health community at the annual [Connected Health Conference](#), the premier international event for the exchange of research, evidence, ideas, innovations and opportunities in personal connected health. The Alliance publishes and promotes adoption of the [Continua Design Guidelines](#). Continua is recognized by the International Telecommunication Union (ITU) as the international standard for safe, secure, and reliable exchange of data to and from personal health devices. The PCHAlliance accelerates technical, business, policy and social strategies necessary to advance personal connected health through its flagship Academy for Healthy Longevity to promote lifelong health and wellness.

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