Kinect Teleport for Remote Medicine

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The Microsoft Kinect game controller could cut the US healthcare bill by up to $30 billion by allowing physicians and other medics to interact with patients remotely so reducing the number of hospital visits and the associated risk of infection.

Writing in the latest issue of the International Journal of Electronic Finance, Janet Bailey of the University of Arkansas at Little Rock is working with Bradley Jensen of Microsoft Corporation, in Irving, Texas, to explain how gaming technology could be used to "teleport" the knowledge and skills of healthcare workers to where they are needed. This could cut patient transport costs for those who live considerable distances from suitable hospitals and health centers and would also lower the risk of hospital-acquired infections.

The team suggests that a laptop, a $150 Kinect, an Azure connection, and an Office 365 account, all costing a few hundred dollars could replace or augment existing telemedicine systems that cost tens of thousands of dollars. "The Kinect allows doctors to control the system without breaking the sterile field via hand gestures and voice commands with a goal of reducing the direct cost of healthcare associated infections to hospitals and patients," the team explains.

Healthcare systems worldwide are based on the premise that there will be medical experts available to address the needs of the global population. Unfortunately, not all patients have ready access to hospitals or health centers and many die or endure chronic illness because of untimely access to medical care. In many regions, there is a shortage of specialists at a time when they are needed most due to growing populations and increasing numbers of individuals suffering from the so-called diseases of old age. The issue of access to expert healthcare is particularly acute in remote parts of the developing world and even in many rural communities removed from cities in the West.

The team has demonstrated that the system works even where only low-bandwidth and unreliable connectivity is available. They point out that redundancy is built into the communications systems as video transmission does not rely on concurrent audio, and sharing images relies on neither audio nor video. Their Kinect system known as Collaboration and Annotation of Medical Images (CAMI) is, the team says, "Not anticipated to be a panacea to the telemedicine environment but it is a powerful tool that can be affordable in virtually any community that has existing technology and communication infrastructure."

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