This paper proposes a new framework, namely Virtual Remote Nursing (VRN) that provides a virtual nurse agent installed on the client’s personal computer or smart phone to control the client’s health condition continuously. In this approach, medical practitioners can assign different tasks to a virtual nurse using a generic task definition mechanism, where a task is defined as a combination of medical workflow, operational guidelines, and associated data. A VRN is controlled by the practitioners who decide on the patient’s treatment. Therefore, a VRN acts as a personalized and full-time nurse for its client that performs the practitioner’s tasks on the client’s health information. Such patient information can be obtained from a Personal Health Record (PHR) system such as Google Health or Microsoft Health Vault. We have developed a prototype system that enables traditional client applications and healthcare provider systems to collaborate using a VRN system. Finally, through a case study, we demonstrate how diabetic patients can take advantages of this system.