Commentary
Volume 11:9, 2022

Journal of Telecommunication System and Management

ISSN: 2167-0919 Open Access

Utilization of Mobile Phone Technology to Control Side Effects Brought on by Chemotherapy

Daisy Shah*

Department of Telecommunications, School of Science and Technology, New York, USA

Description

Novel mobile phone technology linked to a server that communicates patients' symptoms to healthcare professionals has been adapted to register the side- effects of chemotherapy and provide advice on management of toxicity. We report a feasibility study to examine the utility of home monitoring of patients' symptoms via a mobile phoneSix colon cancer patients receiving adjuvant chemotherapy, entered symptom data onto user friendly screens on a mobile phone twice daily. This 'real time' self-assessment of nausea, vomiting, mucositis, diarrhoea and hand–foot syndrome and measurement of temperature was sent via a secured connection to a remote computer.

In the event of moderate or severe symptoms (generating amber and red alerts respectively), the nurse was immediately alerted by the computer, via a pager. The nurse then contacted the patient to reinforce the automatic advice sent to the patient on their phone and to assess the patient using clinical algorithms. The patient used the mobile phones during the first two cycles of chemotherapy. The data were successfully analysed by the server software and alerts were generated alerting the study nurses to patients' symptoms at the appropriate time. There were 91 alert 54 red and 37 amber; 54% (29/54) of the red alerts were data delay and transmission problems which were swiftly rectified. The remaining red alerts were managed appropriately by the study nurses. Both patients and staff felt confident in this approach to symptom management. In the last few years, the UK government has been highlighting the importance of self-responsibility and self-management in health and illness. The mobile telecommunications industry offers one means of supporting patients in this endeavour.

It is widely recognized that the use of chemotherapy results in side-effects that adversely affect patients' quality of life. Indeed, adjuvant regimens for colorectal cancer have toxic death rates (measured by 60-day all-cause mortality) that range from 0.8–2.2% and are driven by febrile neutropenia, diarrhoea, nausea and vomiting and mucositis, the most common life-threatening toxicities. If side-effects can be reported early, e.g. via mobile phones, then, with prompt intervention, they may be minimized and ultimately lives saved.The vast majority of patients receiving chemotherapy for colorectal cancer are treated in the out-patient setting and manage most side-effects at home. Side-effect 'risk management' is handled by a variety of measures including patient education with prechemotherapy discussion, information leaflets, patient-held diaries and targeted use of the internet. Good communication channels with the hospitals are essential, with clear contact procedures in place. Mobile phone technology has the potential to enhance these measures.Telephone follow-up for monitoring, supporting and providing healthcare advice has been successfully utilized for many years, but tends to be non-targeted and therefore time consuming.

***Address for Correspondence:** Daisy Shah, Department of Telecommunications, School of Science and Technology, New York, USA, E-mail: shah@185@edu.in*

Date of Submission: 05 September, 2022, Manuscript No. jtsm-22-82570; **Editor assigned:** 06 September, 2022, PreQC No. P-82570; **Reviewed:** 22 September, 2022, QC No. Q-82570; **Revised:** 24 September, 2022, Manuscript No. R-82570; **Published:** 29 September, 2022, DOI: 10.37421- 2167-0919.2022.11.343

Mobile phone systems, however, allow patients to alert healthcare professionals (HCPs) automatically, in real time and only when necessary and have been successfully piloted for diabetes and asthma. There are approximately 50 million mobile phones in use in the UK today and it should be possible for most patients to communicate their test results or symptoms to HCPs via the mobile phone if supported by robust, accessible programmes. Alerts can be generated for severe orpotentially life-threatening toxicities, informing the HCP, who is then able to act appropriately, thus selecting and focusing on patients requiring intervention We report a feasibility study of utilizing mobile phone-based technology for symptom management during chemotherapy treatment as a component of a large, international adjuvant trial evaluating chemotherapy for patients with colon cancer, QUASAR 2, in which patients are randomized to capecitabine, with or without bevacizumab. A multidisciplinary steering committee comprising engineers, oncologists, senior nurses, a patient, a statistician and senior clinical trials staff executed the study. The study was approved by the study hospital's local research ethics committee, the local research and development committee and monitored by the Oncology Clinical Trials Office (OCTO) at Oxford University. Informal interviews were held with all participating patients and HCPs at the end of the on-study period to elicit their overall experience including their perceptions of the technology and training. Patients were randomized to QUASAR 2 (stage II or III colon cancer patients with complete resection of the primary tumour), able to understand, read and write English and willing and capable of entering their own symptoms and temperature on to the phone twice a day. Six patients received a mobile phone (Motorola V600) with preloaded software. The research nurse instructed the patients on how to use the phone and the digital tympanic thermometer [1-5].

Acknowledgement

We thank the anonymous reviewers for their constructive criticisms of the manuscript. The support from ROMA (Research Optimization and recovery in the Manufacturing industry), of the Research Council of Norway is highly appreciated by the authors.

Conflict of Interest

The Author declares there is no conflict of interest associated with this manuscript.

References

1. J. S. Metcalfe. "Technology systems and technology policy in an evolutionary framework." *Cambridge J Econ* 19 (1995): 25–46.
2. Gorin, Michael A., Steven P. Rowe and Samuel R. Denmeade. "Clinical applications of molecular imaging in the management of prostate cancer" *Pet ClinicS* 12 (2017): 185-192.
3. Lew, Susie Q. and Neal Sikka. "Operationalizing Telehealth for home dialysis patients in the United States." *J Telecommun Syst Manage* 74 (2019) 95-100.
4. Stieglitz, Stefan, Deborah Bunker, Milad Mirbabaie and Christian. "Sense-making in social media during extreme events" *J Telecommun Syst Manage* 26 (2018): 4-15.
5. Panwar, Nisha, Shantanu Sharma and Awadhesh Kumar Singh. "A survey on 5G: The next generation of mobile communication." *J Telecommun Syst Manage* 18 (2016): 64-84.

How to cite this article: Shah, Daisy. "Utilization of Mobile Phone Technology to Control Side Effects Brought on by Chemotherapy." J Telecommun Syst Manage 11 (2022): 343.