

# Nursing and eHealth: A Mixed Method Study to Identify Outcome Criteria for Clinical Practice

Sheerin, F.<sup>1</sup>, de Pieri, C.<sup>2</sup>, Kinnunen, U.M.<sup>3</sup>, Paans, W.<sup>4</sup>, Müller-Staub, M.<sup>5</sup>

<sup>1</sup> PhD RN FEANS FNI, Associate Professor in Intellectual Disability Nursing, Trinity College Dublin, Ireland. President of ACENDIO until 2019.

<sup>2</sup> MA RN, Project Manager MES Piemonte, Azienda Ospedaliera Universitaria Maggiore della Carità, Novara. Italy. ACENDIO Board Member until 2017.

<sup>3</sup> PhD RN, Adjunct Professor & Senior Lecturer, Department of Health and Social Management, University of Eastern Finland, Kuopio, Finland. Vice-President of ACENDIO until 2019.

<sup>4</sup> PhD RN, Professor of Nursing Diagnostics, Hanze University, Groningen, The Netherlands. Vice-President of ACENDIO.

<sup>5</sup> PhD RN FEANS FNI, Professor in Nursing Diagnostics, Hanze University, Groningen, The Netherlands. President of ACENDIO.

There were no conflicts of interest.

## **Abstract**

Much progress has been achieved in relation to eHealth and healthcare informatics. This has however, often taken place without the clear contribution of the most populous professional group: nurses. Thus, the nursing priorities have not been clearly explicated, particularly those which define the desired outcome of eHealth in their respect. This paper reports on a study which sought to identify the eHealth-related outcome criteria for clinical nursing practice. Using a mixed-method approach, it identifies ten outcome criteria to be employed when implementing eHealth in nursing practice. It calls for a planned and integrated approach to such implementation which brings together nurses and patients with the aim of achieving quality healthcare outcomes. Furthermore, it is proposed that there should be a high-level collaborative approach to addressing eHealth and shared leadership in the endeavor across nursing associations.

Keywords: eHealth; nursing; outcomes.

## **Introduction**

ACENDIO (The Association for European Nursing Diagnoses, Interventions and Outcomes) is a European association of nurse experts in the fields of nursing informatics, terminologies and eHealth. ACENDIO's aim is to promote a common European framework for developing nursing through the implementation of standardized nursing languages, information systems and eHealth in education, clinical practice and research (Jones et al. 2010). It achieves this aim by conducting conferences, producing publications, supporting nurses and serving as a network and information resource for the nursing community. In response to the development of eHealth across Europe and in European health policies, ACENDIO members expressed concerns that the nursing voice is often not heard in discussions on eHealth and its applications. This concern is supported by Honey *et al.* (2016). They argued that there is a need for exploring the implications of eHealth for nursing. Furthermore, it was considered that research should be undertaken to identify how nursing can work in this emerging context and continue to facilitate quality patient outcomes.

eHealth is a rapidly developing area which is creating a new and exciting context for the provision of health services and for the practice of nursing. The concept of eHealth is based on the World Health Organisation's definition of health (WHO 2018). The prefix "e" indicates that electronic, or digital technology can facilitate the achievement of high quality, equal and accessible health care for all members of society. According to the WHO (2013), eHealth is defined as the 'use of information and communication technologies (ICT) for health'. (Blumenthal, 2010; United States Department of Health & Human Services, 2004). To achieve *meaningful use* the DHHS released regulations affecting health information technology (HealthIT, 2018). The first describes rule-making propositions on how hospitals, physicians, and other health care professionals can qualify for billions of payments through the meaningful use of electronic health records (EHRs). The second describes the standards and certification criteria that EHRs must meet in order to produce meaningful eHealth data (Ens4Care, 2015; European Commission, 2012a, 2012b, 2015).

## **Background**

The Institute of Medicine (IOM, 2003) identified five core competences needed by all health care personal in order to be able to provide high quality care, one of which was *utilizing informatics*. The proper use of informatics – now referred to as eHealth - has the potential to support other core competences by providing information in a timely manner, functioning as a decision support for quality and facilitating patient involvement. The other core competences are *employing evidence-based practice, applying quality improvement, working in interdisciplinary teams* and *providing patient-centered care*. The organization, Quality and Safety Education for Nurses (QSEN), expanded these competences to include *safety* (Cronenwett et al. 2007). Whilst much of the above is derived from medicine, there are a number of notable nursing sources (Mantas et al. 2010, 2017; Peltonen et al. 2016). This has contributed to an historic knowledge deficit within the nurse community regarding eHealth and the use of ICT to support nursing care. Several initiatives have been undertaken to identify what nursing eHealth competences are needed. One such action is the TIGER Initiative (Technology Informatics Guiding Education Reform) (Hübner et al., 2016), a grassroots action aimed at 'better preparing the clinical workforce to use technology and informatics to improve the delivery of patient care' (HIMMSS 2018). Other examples of pre-requisite competences have been identified. van Houwelingen *et al.* (2016) have identified competences in the domains of knowledge, attitudes, general skills, technological, clinical, communication and implementation. Murphy and Goossen (2017) have concluded that a diverse set of competences and skills are needed to meet the requirements of nursing in this regard. It is against this backdrop that the current research study was conducted and that clarity was sought in relation to the position and role of nursing in eHealth.

## **Study aim**

The aim of the study was to identify categories, sub-categories and outcome criteria related to meaningful and safe use of eHealth from the perspective of expert nurses, as defined by Staggers et al. (2002) and Keeney et al. (2011). Thus, we included ACENDIO-affiliated experts in eHealth who possess a deep understanding of global development, as well as advanced analytic ability in respect of eHealth and nursing.

## **Methods**

### *Design*

A sequential mixed-method design was employed, using a Delphi survey approach and ten international focus groups (Keeney et al. 2010). The Delphi sought to identify ACENDIO experts' perspectives on key thematic areas (categories), whereas the subsequent focus groups discussed those themes, reaching a consensus on the constituent sub-categories and outcome criteria. To conclude the study, three verification meetings were held with a reference group of ACENDIO members.

### *Sample*

All ACENDIO members (n=165) were invited to take part in the Delphi, 30% (n=48) of whom responded to the survey and contributed to the identification of eHealth categories pertinent to nursing. Focus groups were held in three European countries with a total of 69 nursing terminology and informatics experts participating (table 1). This was a self-selecting convenience sample. Across the three focus groups, there was engagement with nurses from eleven European countries.

Table 1: Details of focus groups conducted

<b>Location</b>	<b>Focus Group</b>	<b>Numbers per Focus Group</b>
Dublin	FG1	n=6
	FG2	n=6
	FG3	n=7
	FG4	n=7
Torino	FG1	n=6
	FG2	n=7
	FG3	n=6
	FG4	n=6
Zürich	FG1	n=9
	FG2	n=9
<b>Total</b>	<b>N=10</b>	<b>N=69</b>

### *Data collection*

#### *Delphi Study*

A three-stage Delphi was employed, the first of which was a scoping, open-ended question to identify the overarching categories pertaining to eHealth in nursing. The second stage sought to explore the components of those overarching categories (sub-categories) whilst the final stage was employed to validate these sub-categories.

#### *Focus Groups*

Focus groups were guided by a moderator and assistant moderator, the latter of whom took field notes. Each of the ten focus groups considered specific sub-categories that had been identified during the Delphi study, and was guided by a generic set of questions which sought to uncover the granularity of those sub-categories, in terms of outcome criteria for clinical practice. At the end of each focus group session, a report was produced representing a consensus of focus group members' views

(Krueger & Casey, 2015). Three additional meetings were led by ACENDIO board members in Reykjavík, Bern and Valencia, the last of which took place in 2017, allowing for consultation and verification of the categories, sub-categories and outcome criteria and affirming the final outcomes of the study.

### Data analysis

Descriptive statistics were employed throughout the Delphi process to analyse percentage agreement on content topics. This allowed for the development of consensus on categories and sub-categories. Thematic analysis (Hennink et al., 2011) was conducted on data obtained from focus groups which led to the elucidation of topic areas within those sub-categories.

### Ethical Considerations

The study was undertaken following approval by the ACENDIO board. Ethical principles were adhered to, including non-maleficence, fidelity, confidentiality and respect for autonomy (Orb et al., 2001).

### Findings

The findings of this study are presented in table 2. These set out the categories, sub-categories and outcome criteria related to the meaningful and safe use of eHealth, and represent the broad thematic areas identified by expert nurses as being pertinent to eHealth in nursing. Furthermore, they point to competence areas and competence levels for meaningful eHealth understanding and applications in nursing.

Table 2: Categories, sub-categories and outcome criteria which emerged from the surveys

Category	Subcategory	Outcome Criteria
Data Management	Individuality of Patient Data	<ul style="list-style-type: none"> <li>• Patient has access to his/her own data</li> <li>• Patient validates whom data can be shared with</li> <li>• Nursing contribution to the patient record and patient summary is explicated</li> </ul>
	Safety and Quality of Care	<ul style="list-style-type: none"> <li>• Standards for patient safety are stated</li> <li>• Standards to avoid data loss are set</li> <li>• Legal compliance is adhered to</li> <li>• Accountability is demonstrated</li> <li>• There is identification workload</li> <li>• There is monitoring of safety/quality</li> <li>• Risk management processes are applied</li> </ul>
	Data Storage and Access	<ul style="list-style-type: none"> <li>• Storage of data covers the patient's life-span</li> <li>• Health data is archived centrally</li> <li>• Data security and access protocols are followed</li> <li>• There is adherence to ISO and CEN standards</li> </ul>
eHealth Technology	Patient Monitoring	<ul style="list-style-type: none"> <li>• Patients readily have access to patient data in health records</li> <li>• Patients who remain at home use devices to compensate for impaired function, for health monitoring and evaluation</li> <li>• Patients receive education to support use of devices</li> </ul>
	Patient Support	<ul style="list-style-type: none"> <li>• Internet-based support and consultation is provided</li> <li>• Patients are involved in assessment of their own health status</li> <li>• Patients engage in data collection and documentation for their own health record</li> <li>• Health education is provided to patients</li> </ul>
	Nurse Usability	<ul style="list-style-type: none"> <li>• Nurse-friendly human interfaces are developed</li> <li>• A nursing process model is implemented</li> <li>• There is a documentation process available for inter-professional use</li> <li>• The system supports continuity of care</li> <li>• Decision-support tools are available</li> <li>• A taxonomic nursing framework supports care planning</li> <li>• There are standards for documentation flexibility in different settings</li> <li>• Nurse education is provided</li> </ul>
	Nursing Data Set	<ul style="list-style-type: none"> <li>• Nursing data maps to international Nursing Minimum Data Sets (NMDS)</li> <li>• Epidemiological, valid indicators for nursing diagnoses, interventions and outcomes are available</li> <li>• There is benchmarking of nursing data between different countries</li> <li>• The potential for policy usage of indicators is explained</li> </ul>
Data for Nursing	Clinical Reasoning	<ul style="list-style-type: none"> <li>• The nursing contribution is clearly identified</li> <li>• There is a validated, standardized nursing terminology enacted</li> <li>• Background mapping to different classifications has been undertaken</li> <li>• There is inter-operability with other parts of the electronic patient record, for multi-professional communication</li> </ul>
	Education/ Training	<ul style="list-style-type: none"> <li>• Education/training of educators and nurses in informatics is provided</li> <li>• The role of stored background information to support decision making is clear</li> <li>• Curricula in nursing informatics and documentation are evidence-based</li> <li>• Education should be practice-based with blended learning</li> </ul>
	Research	<ul style="list-style-type: none"> <li>• Access to patient data for research is provided</li> <li>• Internet links are available</li> <li>• Data are evaluated automatically based on research standards</li> </ul>

The sub-categories identify those components which give focus to the broader categories. These sub-categories were ranked by participants, in order of importance, from 1 to 10, where 1 was 'most important' and 10 was 'least important' item. These are presented in table 3.

Table 3: Ranking of subcategories in order of importance

1. Safety and Quality of Care	6. Nursing Data Set
2. Nurse Usability	7. Research
3. Individuality of Patient Data	8. Patient Monitoring
4. Clinical Reasoning	9. Education/Training
5. Patient Support	10. Data Storage and Access

The outcome criteria, which emerged from the focus group discussions, provide detailed information on what needs to be achieved in order to progress eHealth in nursing. As such, these signpost the direction of actions which should be embedded in nursing education and practice.

### **Discussion**

The WHO (2013) definition of *eHealth* suggests that it is an easily-defined and relatively clearly-describable field of knowledge. This is, however, not the case as eHealth represents a complex set of knowledge, competences and values which, in turn, reflect the interpersonal and relational realities of health care practice. *eHealth* is not just about electronically supporting nurses and patients in the achievement of accurate communication and documentation. It also has an important role for informing and guiding practice, as has been demonstrated in the findings of this study.

Based on the analysis of the Delphi panel and focus groups, it may be suggested that the forty-two outcome criteria contain a variety of activities which need to be implemented, in the near future, if nursing is to ensure that eHealth serves to enhance nursing practice and quality patient outcomes. Although this study has not considered the status of eHealth implementation in healthcare organizations, the authors are aware that eHealth applications have often been poorly implemented in the nursing domain due to the complexity of implementation processes (Black *et al.* 2011; Abbot *et al.* 2014; Chan *et al.* 2018; Koivunen and Saranto, 2017). It is acknowledged that the TIGER Initiative has attempted to redress this situation (Sensmeier *et al.* 2017), but this has focused mainly on competences which, although a key aspect of implementation, inform only one component of outcome criteria organized in the sub-categories above. Other components, for example, *knowledge-related* technical applications and *value-based* care quality, need to be addressed as well (Keenan & Yakel, 2005; Keenan *et al.*, 2013). Ossebaard and Van Gemert-Pijnen (2016) have noted that successful implementation can only be achieved if there is an integrated and planned approach. As we consider, by way of exemplars, the two most-highly prioritized sub-categories in this study (safety and quality of care through eHealth technologies, and usability from a nurse's perspective) we can glean insights into the areas which are central to ensuring that a broad implementation can be achieved (Cho *et al.*, 2010).

Literature relating to safety and quality of care, in respect of the use of eHealth applications, suggests that this area is understudied and that there is scant evidence to inform the validity and reliability of those applications and of their ability to achieve quality care (Black *et al.* 2011). In remediating this shortcoming, the current study has identified criteria that might be employed in ensuring that safety and quality of care can be achieved. These involve, amongst others, the implementation of security standards with clear indicators, as well as standards to prevent data loss.

The usability of eHealth technology to support nursing practice and effect quality care is crucial, as difficulties in this regard may often lead to such technology being disregarded by practicing nurses. This is evident in the poor uptake of, and adherence to eHealth referred to by Ossebaard & van Gemert-Pijnen (2016). This is particularly true in respect of nursing documentation; and despite an internationally consented standard for developing Nursing Process - Decision Support Systems (NP-

CDSS) was published (Müller-Staub *et al.* 2016), such systems in EHRs are still scarce. This may be related to inadequate training/education in the use of these systems, inadequate human-system interfaces and that these interfaces may be located at a distance from the situation of patient care. Furthermore, there may be lack of access to an embedded standardized nursing language and/or clinical decision-support within the system (Mitchell *et al.*, 2009; Müller-Staub *et al.*, 2006; Paans *et al.*; 2011). Developments aimed at creating nurse-friendly human interfaces and nursing process-clinical decision support systems must be able to offer structured and complete documentation and handover, based in nursing process-clinical decision-support (Müller-Staub *et al.* 2016).

This discussion has been focused on the consideration of two sub-category areas, as examples of how the emergent outcome criteria may inform implementation and, in turn, nursing practice and care quality. However, in recognition of the limited evidence available to demonstrate that eHealth results in improved care outcomes (Ossebaard & Van Gemert-Pijnen 2016), it is recommended that effectiveness studies be conducted to explore the implementation of eHealth based on these and the other outcome criteria identified in this study.

### **Conclusion**

This paper has explored the contribution of eHealth to nursing and uncovered the principal areas that are pertinent, identifying, in particular, the outcome criteria that must be embedded in any successful implementation. Such implementation must be undertaken in a planned, integrated manner, involving nurses and patients in the shared aim of achieving high quality health outcomes. This is in keeping with Murphy & Goossen's (2017) perspectives and complements Barton's (2015) call for a structured set of processes to achieve improved healthcare outcomes, through eHealth. With this in mind, a nursing eHealth agenda could be developed, focusing on the identification and prioritization of activities, which would lead to the stated outcomes being achieved. Consideration must be given to which nursing entity should take the lead in providing this agenda. It may be that an international consortium of nursing associations could be brought together to support such an initiative.

### **Acknowledgements**

Kathy Molstad, ACENDIO Board Member and ACENDIO Secretary until 2015.

### **References**

- Abbott, P., Foster, J., de Fatima Marin, H. and Dykes, P. (2014) Complexity and the science of implementation in health IT—Knowledge gaps and future visions. *International Journal of Medical Informatics*. 83(7), 12-22.
- Barton, A. (2015) eHealth national priorities. *Clinical Nurse Specialist*. 29(2), 66–67.
- Benner, P. (1984). *From Novice to Expert: Excellence and Power in Clinical Nursing Practice*. Menlo Park: Addison-Wesley.
- Black, A.D., Car, J., Pagliari, C., Anandan, C., Cresswell, K., *et al.* (2011) The Impact of eHealth on the Quality and Safety of Health Care: A Systematic Overview. *PLOS Medicine* 8(1). [Online] Available at: <https://doi.org/10.1371/journal.pmed.1000387> Accessed 7th June 2018.
- Chan AWK, Tang FWK, Choi KC, Liu T, Taylor-Piliae RE (2018). Clinical learning experiences of nursing students using an innovative clinical partnership model: A non-randomized controlled trial. *Nurse education today*. 2018;68:121-127.
- Blumenthal, D. (2010). Launching HITECH. *The New England Journal of Medicine*. 362(5), 382-385.
- Cho, I., Kim, J., Kim, J. H., Kim, H. Y., and Kim, Y. (2010) Design and implementation of a standards-based interoperable clinical decision support architecture in the context of the Korean EHR. *International Journal of Medical Informatics*. 79(9), 611-622.
- Cronenwett, L., Sherwood, G., Barnsteiner, J., Disch, J., Johnson, J., Mitchell, P., Sullivan, D.T. and Warren, J. (2007) Quality and safety education for nurses. *Nursing Outlook*. 55(3), 122-131.
- Ens4Care (2015) Evidence based guidelines for nurses and social care workers for the deployment of eHealth services. [Online] Available at: <http://www.ens4care.eu/> Accessed 7th June 2018.

- European Commission (2012a) Innovation in healthcare. [Online] Available at: [http://ec.europa.eu/research/health/pdf/innovation-in-healthcare-overview-report\_en.pdf Accessed 7th June 2018.
- European Commission (2012b). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. eHealth Action Plan 2012–2020: Innovative Healthcare for the 21st Century. [Online] Available at: <https://ec.europa.eu/digital-agenda/en/news/ehealth-action-plan-2012-2020-innovative-healthcare-21st-century> Accessed 7th June 2018.
- European Commission (2015) Digital agenda for Europe: A Europe 2020 initiative. [Online] Available at: <https://ec.europa.eu/digital-agenda/en/digital-europe> Accessed 7th June 2018.
- HealthIT (2018) HealthIT.gov. [Online] Available at: <https://www.healthit.gov> Accessed 6th June 2018.
- Hennink, M., Hutter, I. and Bailey, A. (2011) *Qualitative Research Methods*. Sage Publication, London. P. 243-265.
- HIMMSS (2018) The TIGER initiative. [Online] Available at <http://www.himss.org/professionaldevelopment/tiger-initiative> Accessed 19th May 2018.
- Honey, M., Procter, P.M., Wilson, M.L., Moen, A. and Dal Sasso, G.T. (2016) Nursing and eHealth: Are we preparing our future nurses as automatons or informaticians? *Studies in Health Technology and Informatics*. 225, 705-706.
- Hübner, U., Shaw, T., Thye, J., Egbert, N., Marin, H., and Ball, M. (2016). Towards an international framework for recommendations of core competencies in nursing and inter-professional informatics: The TIGER competency synthesis project. *Studies in Health Technology and Informatics*. 228, 655-659.
- Institute of Medicine (2003) *Health Professions Education: A Bridge to Quality*. Greiner A.C and Knebel, E. Eds.. Washington DC: National Academic Press,
- Jones, D., Lunney, M., Keenan, G., and Moorhead, S. (2010). Standardized nursing languages: essential for the nursing workforce. *Annual Review of Nursing Research*. 28, 253-294.
- Keenan, G., and Yakel, E. (2005). Promoting safe nursing care by bringing visibility to the disciplinary aspects of interdisciplinary care. *AMIA Annual Symposium Proceedings*. 385-389.
- Keenan, G., Yakel, E., Dunn Lopez, K., Tschannen, D., and Ford, Y. B. (2013). Challenges to nurses' efforts of retrieving, documenting, and communicating patient care information. *Journal of the American Medical Informatics Association*. 20(2), 245-251.
- Keeney, S., McKenna, H., and Hasson, F. (2011). *The Delphi Technique in Nursing and Health Research*. West Sussex: Wiley-Blackwell.
- Koivunen, M. and Saranto, K. (2017) Nursing professionals' experiences of the facilitators and barriers to the use of telehealth applications: a systematic review of qualitative studies. *Scandinavian Journal of Caring Sciences*. 32(1), 24-34.
- Krueger, R. A., and Casey, M. A. (Eds.). (2015). *Focus Groups: A Practical Guide for Applied Research* (5edn). London: Sage.
- Mantas, J., Ammenwerth, E., Dermis, G., Hasman, A., Haux, R., Hersh, W., ..., Wright G. (2010) Recommendations of the International Medical Informatics Association (IMIA) on education in biomedical and health informatics. *Methods of Information in Medicine*. 49(2), 105–120.
- Mantas, J., and Hasman, A. (2017) IMIA Educational Recommendations and Nursing Informatics In Judy Murphy, William Goossen, Patrick Weber (Eds.) *Forecasting Informatics Competencies for Nurses in the Future of Connected Health*. *Studies in Health Technology and Informatics*. 232, 20–30.
- Mitchell, N., Randell, R., Foster, R., Dowding, D., Lattimer, V., Thompson, C., . . . Summers, R. (2009) A national survey of computerized decision support systems available to nurses in England. *Journal of Nursing Management*. 17(7), 772-780.
- Müller-Staub M, Lavin MA, Needham I, van Achterberg T. Nursing diagnoses, interventions and outcomes—application and impact on nursing practice: a systematic literature review. *J Adv Nurs*. 2006;56(5): 514–531.
- Müller-Staub, M., de Graaf-Waar, H. and Paans, W. (2016) An internationally consented standard for nursing process-clinical decision support systems in electronic health records. *Computers, Informatics, Nursing*. 34(11), 493-592.

- Orb, A., Eisenhauer, L. and Wynaden, D. (2001) Ethics in Qualitative Research. *Journal of Nursing Scholarship*. 33(1), 93-96.
- Murphy J. and Goossen, W. (2017) Introduction: Forecasting informatics competencies for nurses in the future of connected health. *Studies in Health Technology and Informatics*. Vol. 232, 1-6.
- Ossebaard, H.C., & Van Gemert-Pijnen, L. (2016) Health and quality in health care: implementation time. *International Journal for Quality in Health Care*. 28(3), 415-419.
- Paans W, Nieweg R, van der Schans CP, Sermeus W. What factors influence the prevalence and accuracy of nursing diagnoses documentation in clinical practice? A systematic literature review. *J Clin Nurs*. 2011;20(17-18): 2386-2403.
- Peltonen, L.M., Topaz, M., Ronquillo, C., Pruinelli, L., Sarmiento, R.S., Badger, M.K. and Ali, S. (2016) Nursing Informatics Research Priorities for the Future: Recommendations from an International Survey. *Studies in Health Technology and Informatics*. Vol. 225, 222-226.
- Sensmeier, J., Anderson, C. and Shaw, T. (2017) International Evolution of TIGER Informatics Competences. *Studies in Health Technology and Informatics*. Vol. 232, 69-79.
- United States Department of Health and Human Services. (2004) HHS fact sheet - hit report at a glance: The decade of health information technology: Delivering consumer-centric and information-rich health care. [Online] Available from: <http://archive.hhs.gov/news/press/2004pres/20040721.html> Accessed 7th June 2018.
- van Houwelingen, C. Moerman, A. Ettema, R. Kort, H. and ten Cate, O. (2016) Competencies required for nursing telehealth activities: A Delphi-study. *Nurse Education Today*. 39, 50-62.
- World Health Organization (2013) Sixty-sixth World Health Assembly: Agenda item 17.5 27 May 2013: eHealth standardization and interoperability. [Online] Available at: [http://apps.who.int/gb/ebwha/pdf\\_files/WHA66/A66\\_R24-en.pdf?ua=1](http://apps.who.int/gb/ebwha/pdf_files/WHA66/A66_R24-en.pdf?ua=1) Accessed 19th May 2018.
- World Health Organisation (2018) Constitution of WHO: Principles. [Online] Available at: <http://www.who.int/about/mission/en/> Accessed 6th June 2018.