















### E. Return Receipt Page

In this page, there were a lot of improvements, such as relocation of the button, replacement of the button's name, the appearance of the form, and the addition of return receipt confirmation.

### F. Navigation Section

The revision of this section was the addition of discoloration, notification menu, replacement of submenu's name, and deletion of the submenu.

### G. Laboratory Page

The improvement of this page was the addition of the laboratory order confirmation so that the doctor examines the list of their patients before the confirmation is made.

### H. Radiology Page

The improvement of this page was similar to the laboratory page. There was an addition to having confirmation for the order.

### I. Template Section

The revision that was done in this section was adding a new feature to create P template in O template page.

## IV. CONCLUSION

In general, the use of HMIS in a regional public hospital in Jakarta was quite satisfactory. This was indicated by ten positive feedbacks from the users. Moreover, the users could explain how to use the system clearly. Furthermore, the system was enough to give shortcuts and options that fit every user's taste, and it had a list that was based on the hospital's accreditation.

These are the suggestions for future works based on the process and the results of the research:

First, for researchers, the next research can be done with another usability evaluation method, such as usability testing and expert evaluation. Similar studies can be done in the same or different hospitals by evaluating HMIS in every hospital department with another target user, like the nurses and pharmacists. Second, for future development, this research produces a lot of recommendations that can be considered for future development, for example, connection improvement between fields. Furthermore, the results of the prototype recommendation can be applied to the next development. Moreover, the usability evaluation can be done to get feedback from the prototype recommendation produced from this research.

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## REFERENCES

- [1] World Health Organization (n.d.), Hospitals. Available: <http://www.who.int/topics/hospitals/en/>.
- [2] Kementerian Kesehatan Republik Indonesia (Menkes), Peraturan Menteri Kesehatan Republik Indonesia Nomor 82 Tahun 2013 tentang Sistem Informasi Manajemen Rumah Sakit, 2013a.
- [3] Depkes, Menkes Harapkan Kemkominfo Dukung Pemanfaatan Teknologi Informasi dan Komunikasi (TIK) di Bidang Kesehatan. (2014). Available: <http://www.depkes.go.id/article/view/15010200022/menkes-harapkan-kemkominfo-dukung-pemanfaatan-teknologi-informasi-dan-komunikasi-tik-di-bidang-keseh.html>.
- [4] Kasaei, M., Rezaei, P., Tavakoli, N., & Ehteshami, A, "The role of health information technology in reducing preventable medical errors and improving patient safety", *Int J Health Syst Disaster Manage International Journal of Health System and Disaster Management*, 2013, 1(4), 195-199.
- [5] Reason, J. T, *Human error*, Cambridge: Cambridge University Press, 1990.
- [6] Liljegren, E, "Usability in a medical technology context assessment of methods for usability evaluation of medical equipment". *International Journal of Industrial Ergonomics*, 2006, 36(4), 345-352.
- [7] Armijo, D., McDonnell, C., & Werner, K, "Electronic health record usability: Evaluation and use case framework". AHRQ Publication No. 09(10)-0091-1-EF. Rockville, MD: Agency for Healthcare Research and Quality, October, 2009.
- [8] Hoffman, S., & Podgurski, A, *Finding a cure: The case for regulation and oversight of electronic health record systems*. *Harvard Journal of Law & Technology*, 2008, 22, 104-165.
- [9] 2013a, Bowman, S, "Impact of electronic health record systems on information integrity: Quality and safety implications". *Perspectives in Health Information management: Online Research journal (AHIMA)*. Available: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3797550/#B34>.
- [10] Locatelli, P., Restifo, N., Gastaldi, L., & Corso, M, "Health care information systems: Architectural models and governance". In C. Kalloniatis (Ed.), *Innovative Information Systems Modelling Techniques* (pp. 73-98). Rijeka, Croatia: InTech, 2012.
- [11] (n.d.), Sheldon, D, Chapter 7: *Hospital Information Systems*. Available: <http://groups.csail.mit.edu/medg/courses/6872/96/notes/sheldon.html>.
- [12] Caccia, C, *Management of health care information systems*. Milano: McGraw-Hill, 2008.
- [13] Locatelli, P, *Health information systems*. In G. Motta (Author) & G. Bracchi & C. Francalanci (Eds.), *Organizational Information Systems*, 2010, (pp. 291-311). Milan, Italy: McGraw-Hill. (In Italian)
- [14] (2012) Nielsen, J, *Usability 101: Introduction to Usability*. Available: <https://www.nngroup.com/articles/usability-101-introduction-to-usability/>.
- [15] (n.d.) ISO 9241-210:2010 - *Ergonomics of human-system interaction -- Part 210: Human-centred design for interactive systems*. Available: <https://www.iso.org/obp/ui/#iso:std:iso:9241:-210:ed-1:v1:en>.
- [16] Balaraman, P., Kosalram, K. *E-Hospital Management & Hospital Information Systems – Changing Trends*. *IJ Information Engineering and Electronic Business*, 2013, 1, 50-58.
- [17] Bain, C. *Developing Effective Hospital Management Information Systems: A Technology Ecosystem Perspective*. (2014). Retrieved from <http://ro.ecu.edu.au/theses/1410>
- [18] (n.d.b) *Usability Evaluation Basics*. Available: <http://www.usability.gov/what-and-why/usability-evaluation.html>.
- [19] Privitera, M. B, *Contextual inquiry for medical device design*. Amsterdam: Elsevier Academic Press, 2015.
- [20] Viitanen, J, *Contextual inquiry method for user-centred clinical IT system design*. *User Centered Networked Health Care*, 965-969. doi:10.3233/9781607508069965, 2011.
- [21] George, C. A. *User-centered library websites: Usability evaluation methods*. Oxford: Chandos Pub, 2008.
- [22] Barnum, C. M, *Usability testing and research*. New York: Longman, 2002.
- [23] Endsley, M. R., Bolté, B., & Jones, D. G, *Designing for situation awareness: An approach to user-centered design*. London: CRC Press, Taylor & Francis, 2011.
- [24] (2001) Nielsen, J, *Usability Metrics*, Available: <https://www.nngroup.com/articles/usability-metrics/>.
- [25] (n.d.) Axure, *Prototypes, Specifications, and Diagrams in One Tool | Axure Software*, Available: <http://www.axure.com/>.
- [26] Shneiderman, B., Plaisant, C., Cohen, M., & Jacobs, S, *Designing the user interface strategies for effective human-computer interaction*. Boston, Mass.: Pearson Education, 2013.
- [27] Blair-Early, A., & Zender, M, "User Interface Design Principles for Interaction Design. *Design*" *Issues*, 24(3), 2008, 85-107. doi:10.1162/desi.2008.24.3.85.
- [28] Weinschenk, S, *100 things every designer needs to know about people*, 2011.