

Let's Talk Informatics

Flow and Management of MRI Outpatient Information: Mapping the Process from Requisition to Report

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October 26, 2017

Bethune Ballroom, Halifax, Nova Scotia

Please be advised that we are currently in a controlled vendor environment for the One Person One Record project.

Please refrain from questions or discussion related to the One Person One Record project.

Informatics...

utilizes health information and health care technology to enable patients to receive best treatment and best outcome possible.

Clinical Informatics...

is the application of informatics and information technology to deliver health care.

AMIA. (2017, January 13). Retrieved from <https://www.amia.org/applications-informatics/clinical-informatics>

Objectives

At the conclusion of this activity, participants will be able to...

- Identify what knowledge and skills health care providers will need to use information now and in the future.
- Prepare health care providers by introducing them to concepts and local experiences in Informatics.
- Acquire knowledge to remain current with new trends, terminology , studies, data and breaking news.
- Cooperate with a network of colleagues establishing connections and leaders that will provide assistance and advice for business issues, as well as for best-practice and knowledge sharing.

At the conclusion of this presentation, participants will be able to...

- Appreciate the common understanding of the outpatient (OP) MRI information flow and management process.
- Recognize challenges and issues in OP MRI data collection, input and access.
- Identify opportunities for an improved OP MRI informatics process.

Conflict of Interest Declaration

- I have no conflict of interest to declare.

Why Health Informatics?

- Health information and health informatics can be used for system improvement.¹
- Health informatics is a bridge that crosses over and joins the domains of information technology, medicine and administration.

Why Process Mapping?

- Process mapping is a tool that allows for identification of gaps and inefficiencies in the flow and management of information.²
- Development of the OP MRI process map as a tool has the potential to be applied in other areas of diagnostic imaging.

Healthcare Organization

- Institutional healthcare and delivery of services occurs across many departments and is organizationally complex .³

Why this project?

- Recognition that there were challenges with information movement within MRI existed.
- An overview or a common understanding of the information movement from request to report did not exist.

Project Description

- define the information flow
- consider each step in the process
- determine the participants
- conduct the interviews
- analyze and synthesize the data
- summarize the findings
- create a visual map

Approach

- The process mapping was developed using qualitative data obtained from semi-structured interviews of individuals involved in the steps from request of an MRI study through to report generation.

Who are the players?

Acronym	Group	Stakeholder
P	Patient	patients
R	Referrer	family physicians, specialists, nurse practitioners
A	Administration	booking clerks, registration clerks, managers, senior administrators
MRS	MR Sub-specialty	radiologists, residents (neurology, body, cardiac, musculoskeletal)
MRU	MR Unit	technologists
DIIS	Diagnostic Imaging Information Systems (Star, Millenium, RIS, PACS)	information technology specialists

Mapping Tool - Information Flow

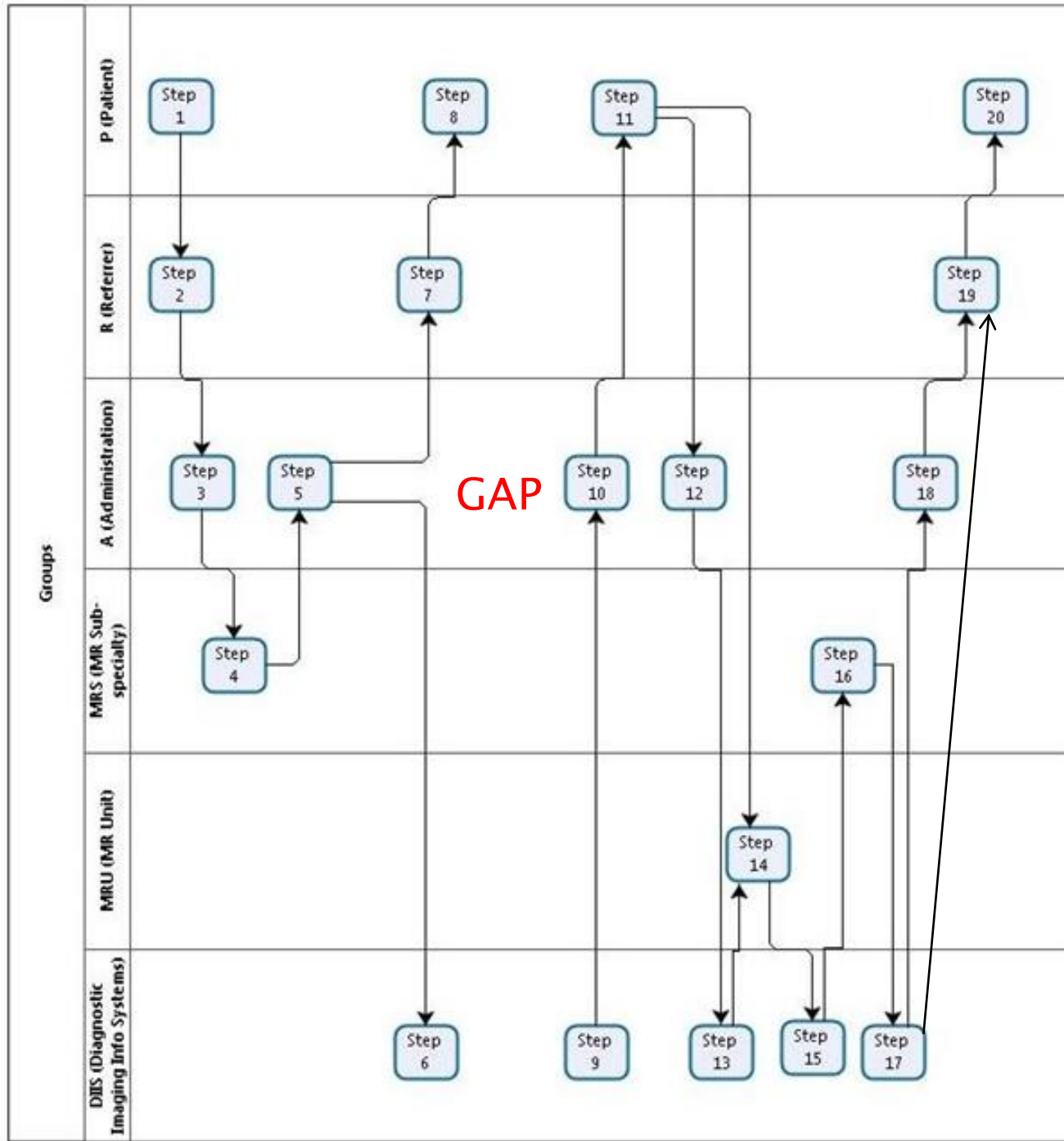
Triaging & Protocols

Triaging

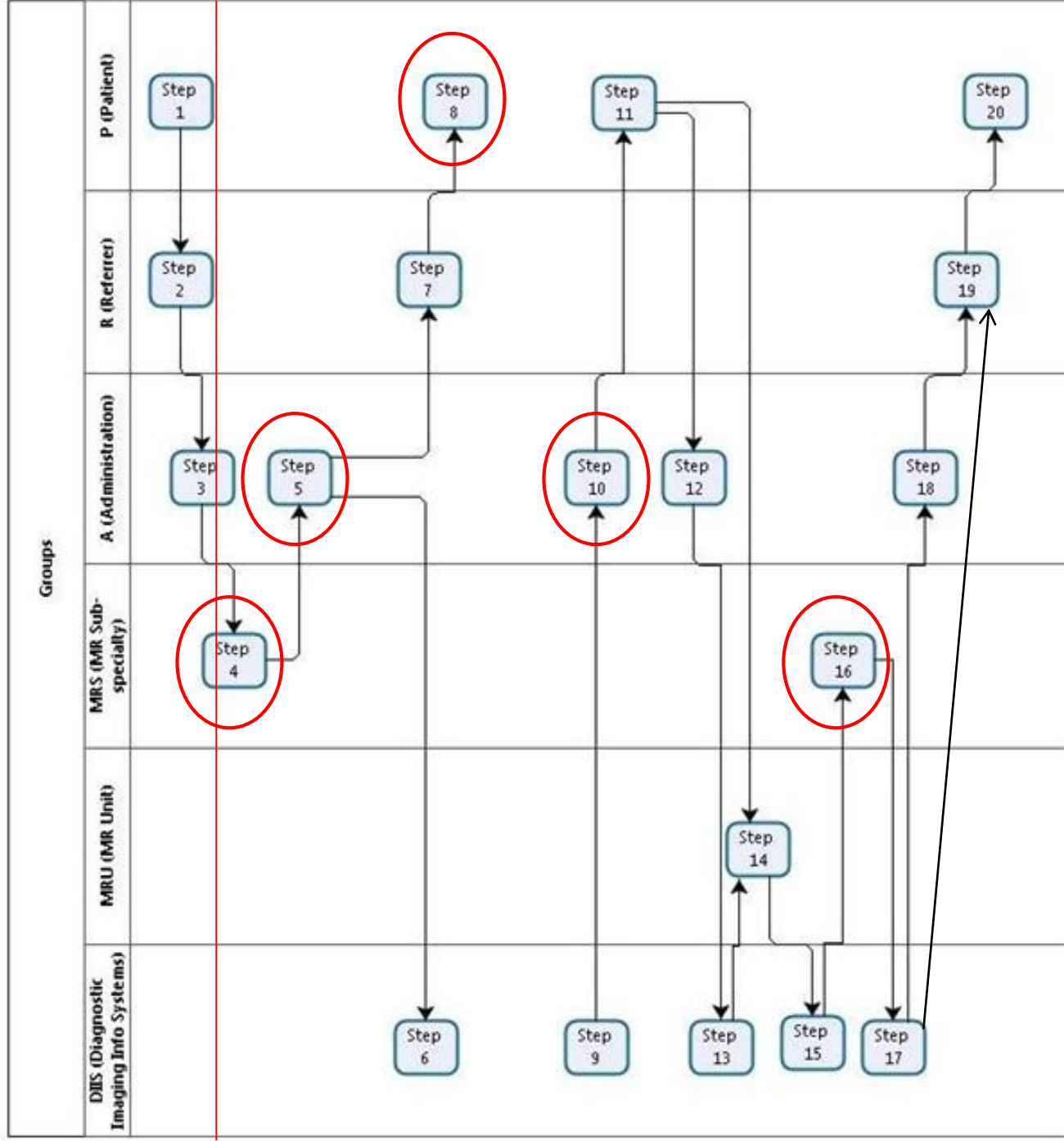
Priority 1	Within 24 hours
Priority 2	Within 7 days
Priority 3	Within 30 days
Priority 4	Within 60 days

Protocols

Based on the pathology the appropriate sequences are determined to produce the images required.



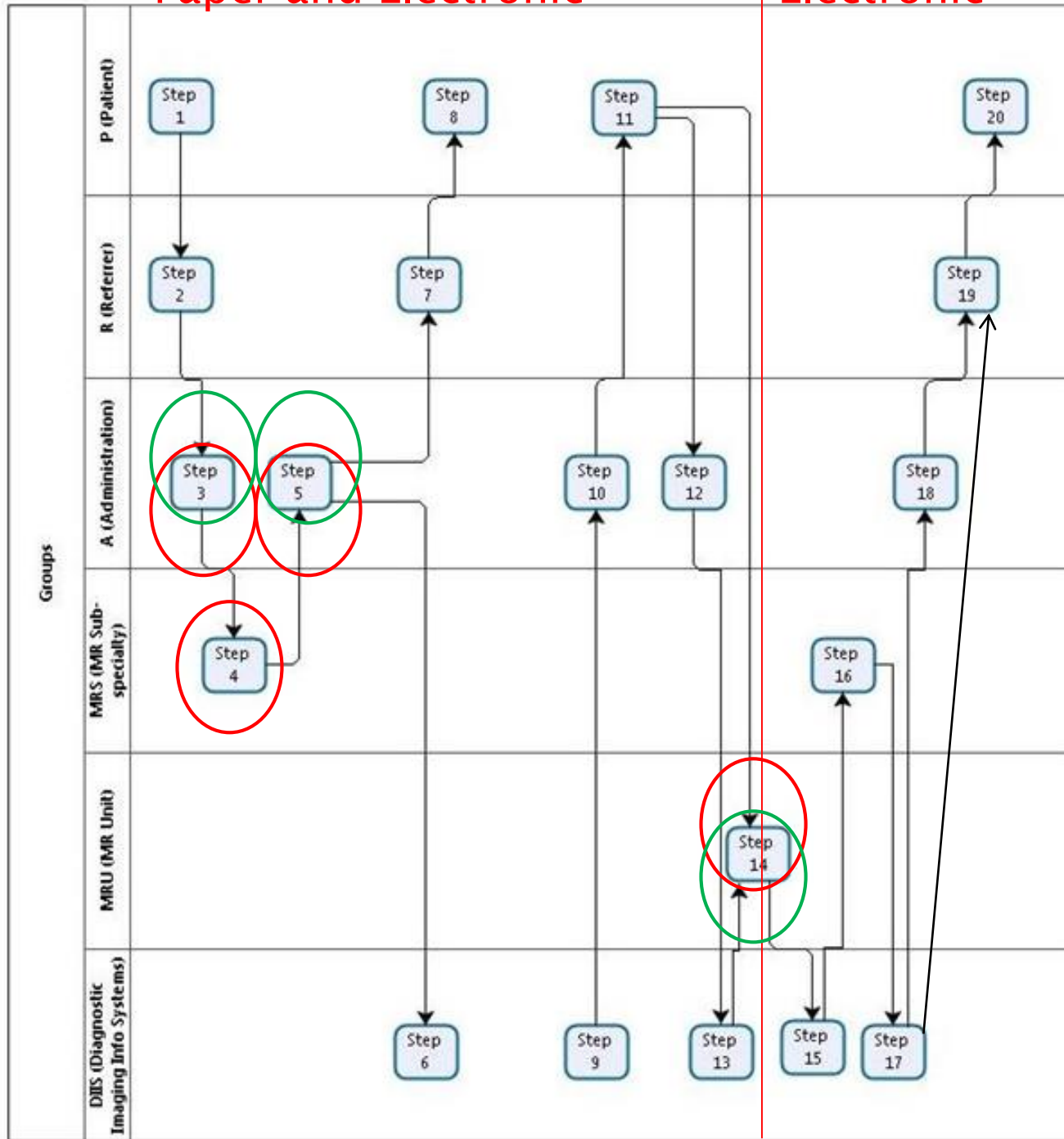
Mapping Tool - Information Timing



Mapping Tool - Information Medium

Pre-MR Study Paper and Electronic

Post-MR Study Electronic



Points of Contact and Challenges for Groups

- Patient
 - Contact – 4 points
 - Challenges – contact for appointment

Points of Contact and Challenges for Groups

- Referrer
 - Contact – 3 points
 - Challenges – responsible for communication of appointment and study preparation

Points of Contact and Challenges for Groups

- Administration
 - Contact – 5 points
 - Challenges – hard copy requisition, management of file folders, booking software, task interruption

Points of Contact and Challenges for Groups

- MR Sub-specialty
 - Contact – 2 points
 - Challenges – hard copy requisitions, triaging & protocoling decisions, report generation

Points of Contact and Challenges for Groups

- MR Unit
 - Contact – 1 point
 - Challenges – hard copy requisition, changes in protocol, patient no shows

Points of Contact and Challenges for Groups

- Diagnostic Imaging Information Systems
 - Contact – 4 points of contact
 - Challenges – multiple systems, multiple users

Future Opportunities

- Direct contact between the patient and MR booking
- Electronic requisition
- Written triaging and protocoling criteria
- Use of electronic information only through process

Future Opportunities

- Computerized physician order entry with clinical decision support
- Synoptic reporting
- One seamless integrated system from request to report

Project Thoughts...

- Gaps in the connection and delay of information flow are evident.
- Management of information moving back and forth between hard copy and electronic creates flow and access issues.
- Opportunities for improvement need to be considered from both a short term and long term approach.

Project

- Strength
 - Student insider
 - Support for project
- Weakness
 - Convenience sampling

Lessons Learned

- Discovery of a common core understanding
- Observation
- Group internal pressures
- Mutual respect
- Richness of process mapping

References

1. Berg, M., & Toussaint, P. (2003). The mantra of modeling and the forgotten powers of paper: a sociotechnical view on the development of process-oriented ICT in health care. *International journal of medical informatics*, 69(2), 223-234.
2. Colligan, L., Anderson, J. E., Potts, H. W., & Berman, J. (2010). Does the process map influence the outcome of quality improvement work? A comparison of a sequential flow diagram and a hierarchical task analysis diagram. *BMC health services research*, 10(1), 7.
3. Ben-Tovim, D. I., Dougherty, M. L., O'Connell, T. J., & McGrath, K. M. (2008). Patient journeys: the process of clinical redesign. *Medical Journal of Australia*, 188(6), S14.
4. <https://waittimes.novascotia.ca/mri-ordering-guidelines> Last retrieved: June 9, 2017
5. <http://waittimes.novascotia.ca/sites/default/files/OrderingMRIsNS20130611.pdf> Last retrieved: June 9, 2017
6. Cain, C. & Haque, S. (2008). Organizational Workflow and Its Impact on Work Quality. In: Hughes RG, editor. *Patient Safety and Quality: An Evidence-Based Handbook for Nurses*. Rockville (MD): *Agency for Healthcare Research and Quality (US)*; Chapter 31.
7. Xiao, Y. (2005). Artifacts and collaborative work in healthcare: methodological, theoretical, and technological implications of the tangible. *Journal of biomedical informatics*, 38(1), 26-33.

Acknowledgements

Supervisors

- Jennifer Payne, PhD
- Kathy Spurr, RRT, MHI, CCRP

Participants

- Those from each of the groups who gave of their valuable time.



The ***Let's Talk Informatics*** series meet the criteria outlined in the Manipro+ Certification guide for 1 credit by providing content aimed at improving computer skills as applied to learning and access to information.

A certificate of attendance will be sent to you to personalize, along with the link for the evaluation.

Thank you for attending today's event.

This **Group Learning** program has been certified by the College of Family Physicians of Canada and the Nova Scotia Chapter for 1 Mainpro+ credit.