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October 26, 2021

Organizational Structure – Four Flows

The "Four-flows" model, developed by Robert McPhee and Pamela Zhug (2000) in their theory of Communicative Constitution of Organizations, argues that organizations and relationships within the organization are developed through the process of communication in four different areas or "flows": self-structuring, institutional positioning, membership negotiation, and activity coordination.

THE ORGANIZATION

The organization in question is the operations department at [redacted] The name of the department highlights the critical importance of the department as its function is why the entire organization of [redacted] exists. Its core function is to provide the services to the clients that the organization is expected to do. Operations involves interfacing with clients in a customer service capacity, managing data such as patient information and radiology images, coordinating with radiologists to have those exams interpreted, and then communicating findings to physicians.

SELF-STRUCTURING

The operations department is structured on the goal to provide the product and services to clients that thy are paying the organization for, namely reading medical imaging, and reporting those findings back to the clients by an expected turnaround time outlined in the client contract. These policies and rules are deployed and communicated to employees through summary documents called "facility guides", emails regarding specific facilities, and messages written in Microsoft Teams chats. Certain policies and rules can be enforced through the proprietary software the department uses to manage radiologist workflows, and process patient exams. Procedures on how to seek information from clients, how to handle phone calls form clients, and how to communicate critical findings on patients are taught as a part of onboarding new employees and can be adapted based on personal, group, or organizational experience. Though the work environment is non-traditional compared to other healthcare organizations, professional behavioral norms in communication and compliance with local, state, and federal laws are expected.

INSTITUTIONAL POSITIONING

The operations department in its customer service capacity is positioned directly to interact with other organizations and their stakeholders. Networking with these stakeholders is an important skill for any member of the operations team because the immediacy can encourage compliance to what the department needs to fulfill its obligations, such as images or patient data. Strategic communication and public relations skills are also of high value in the instances where there is conflict. A common occurrence of conflict with clients are delays into reporting due to high volume. Strategic communication must be employed to placate the client for long enough to resolve the delay.

Despite being an organization that has a remote non-traditional structure, the organization strongly values being seen as normative within the medical field. It is an unofficial policy within the department to not give clients any idea that the team operates remotely, wanting to project an image of a call center environment to clients to ensure the organization is seen as “legitimate” to publics that have negative opinions of remote work environments.

MEMBERSHIP NEGOTATION

Initiation into the department begins with the onboarding process and being given the title of “operations technician”. This title was developed by the organization management to communicate a level of technical expertise and special knowledge to a position that goes beyond what a customer service representative, data entry clerk, or administrative assistant would know. The socializing and integrating of a new employee into the organization starts very early as the team discussion on Microsoft Teams is an essential function of the work environment. The training process adapts the trainee to understanding how the chat is used, the meaning of medical terminology and jargon (e.g., RIS, PACS, F/U, CTRs, etc.) and the occasional not work-related chatting and instant messaging allows the employee to build relationships with team members and feel integrated into the department and organization.

ACTIVITY COORDINATION

Aside from the Supervisor who is responsible for monitoring employees and addressing major issues with clients or staff, The operations team leads are tasked with ensuring the smooth operation of a shift; which includes managing the workflow of radiologists, addressing technical issues, and organizing and directing team members if there are issues with the workflow, and contributing to operations technician tasks. The assistant team lead is an operations technician given some access to some technical resources used by team leads in case the team lead needs to delegate tasks from their own workload.

The operations technicians make use of radiology information systems (RIS), and radiology imaging systems (PACS) for four major workflows:

Report processing: Staff are asked with monitoring the RIS for any incoming exams, verifying the information is accurate and that images to be interpreted are complete and to send them to a radiologist. If the information is incomplete, then staff must contact facility to obtain necessary information. Once everything is complete it can be sent to a radiologist for reading.

Radiologist support: Staff are tasked to monitor Teams for any messages from a radiologist that may be seeking support in getting more imaging, prior reports on a patient, or to initiate contact with a provider for them.

Customer service: Staff are tasked with responding to incoming calls from clients and address their needs which may involve confirming if a study has been received, its report status, and to speak to a reading radiologist.

Critical value notification: This is the highest priority task for any member on a shift to immediately take on a critical report and to contact the facility for reporting of the critical findings. Who the findings can be reported to is determined on a per-contract basis but often times it is always reported to a registered medical professional such as an RN or a physician.

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Organizational Structure

ABOUT [redacted]

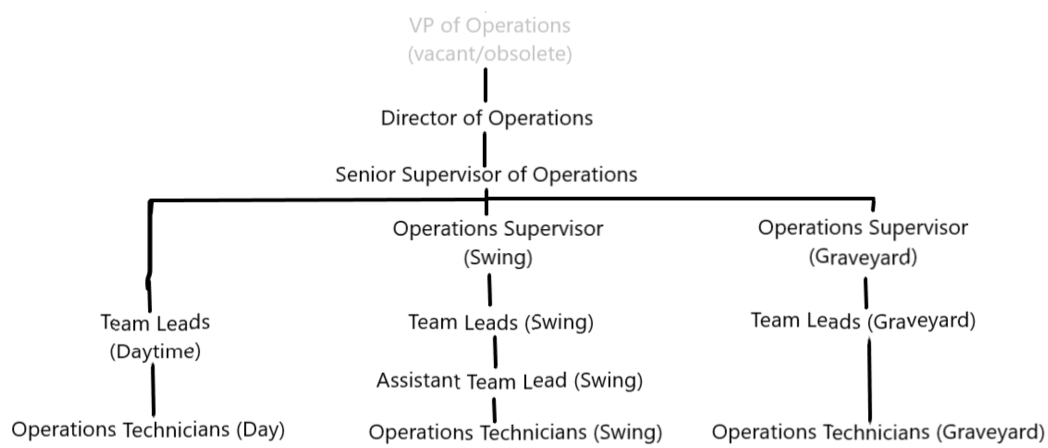
[redacted] is a full-service teleradiology solutions provider that operates around the United States. The primary product that the organization is known for is the service of providing clients with radiologist interpreations of various types of medical imaging for outpatient facilities, medical groups, and major hospitals where having a local radiologist on staff is not available or cost-efficient.

OPERATIONS TEAM

The focus of this case study will be the operations department at [redacted] The departamental name communicates how crucial it is to the existence of the organization because it is responsible for the key functions of providing the product and service to the client. The operations team is responsible for the reception and processing of exams to ready for radiologist interpreation and to distribute the information back to the clients, with direct verbal communication if a patient has a critical finding. The operations team is also the public face to the organization that most clients and publics outside the organization interact with on a daily basis for the purposes of customer service.

The role titles within the department communicate expectations and responsibilities expected of the role-holders. Beneath the department head of the director, there are supervisors for each individual shift with one of them holding a senior position confirming additional power and responsibilities on top of their usual duties as a supervisor. The team lead title communicates that this person is responsible for the effective maintenance of each shift, de-escalte conflict with clients, and is expected to manage human and technical respources to ensure the team's success. The assistant team lead is given some but not all access to technical resources and systems to aid team leads if some of their work needs to be delegated. The operations technitian role is a combination of the functions of a customer support represenative with a data entry clerk; the name was given to give meaning and value to the role that is seen as greater than an administrative assistant role, or as one radiologist employee called them: "secretaries".

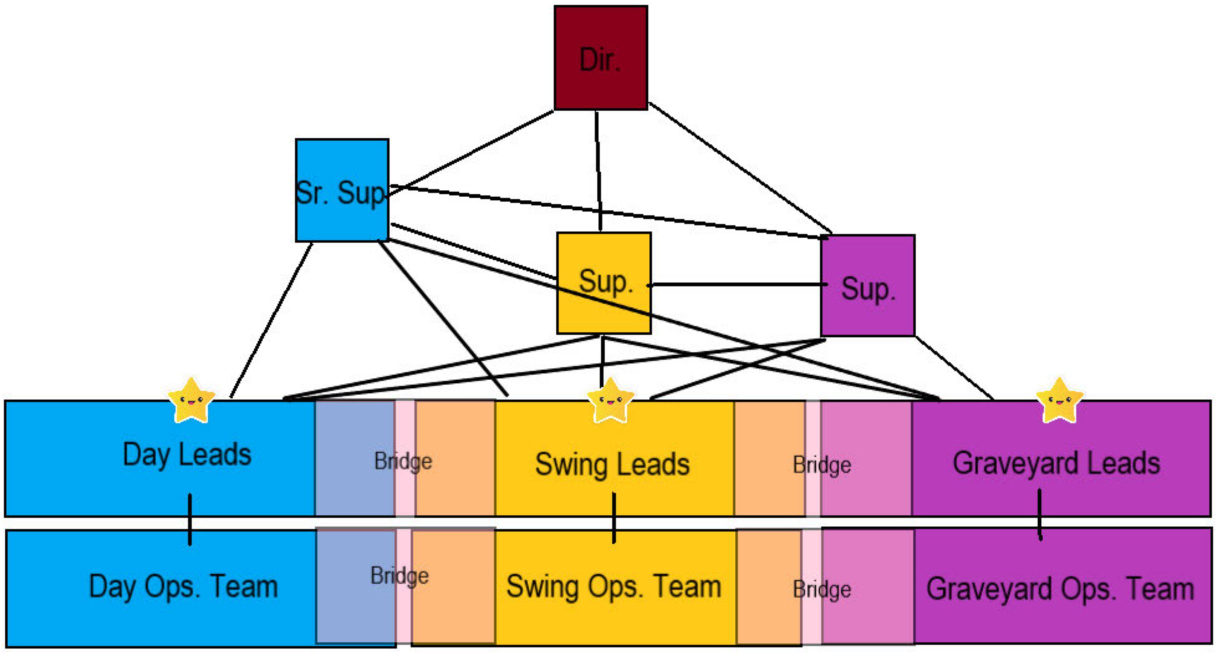
ORGANIZATIONAL STRUCTURE



The organizational structure of the Operations department of [redacted] is a hybrid structure that combines structures of a rigid bureaucratic hierarchy with the flexibility of a matrix in practice. Unlike other departments in the overall organization, the operations department currently lacks a vice president position that has gone unfilled after the departure of the previous vice president of operations. In its place two new roles were created: director of operations and senior supervisor of operations. These new positions were filled by supervisors who were promoted, and their positions were filled by team leads who were promoted. This system of advancement follows traditional norms of hierarchical organizations that promote from within by "climbing the corporate ladder".

Although the organizational chart shown above depicts each shift as isolated teams reporting up the hierarchy, there is significant cross-pollination of information and employee resources between the teams. Scheduling of employees on each shift is staggered throughout the earlier and later portions of each shift. This strategy serves two purposes: to create flexibility in scheduling for employees, and to shift employees towards and away from time periods where additional support may or may not be needed. Supervisors also often switch shifts or organize around covering PTO for each other so there are frequent opportunities for supervisors to supervise and interact with teams beyond their own. The scheduling flexibility results in both low and mid-level employees having frequent opportunities to interact and collaborate with other teams and leaders, allowing them to build relationships across teams and to easily share information and ideas with each other.

INTRAORGANIZATIONAL NETWORK ANALYSIS



The Operations department is an intraorganizational network within [redacted] that comprises of 30 employees who mostly work exclusively in a remote capacity and work on a proprietary radiology information system (RIS), and a radiology image storage database (PACS). Team members communicate with each other primarily through Microsoft Teams, email, and telephone calls. Teams is used to communicate in real time about who is doing what task, relay information and requests from clients, communicate with radiologists, and document issues and interactions during a shift. Email is used to document and pass on information between shifts or to contact a radiologist who is off shift to address an issue. Phone calls between team members is often used to communicate messages that would be inefficient to post on the team chat.

In contrast to the rigid homogenous structure of [redacted] organizational chart, the dynamics of communication within the department are very fluid and interdependent. Within each subgroup separated by shift, there are dense tight knit connections between technicians, leads, and supervisors. But because of shift staggering, there are a few team members who are working with more than one team over the course of a shift which provides opportunities to exchange knowledge and build relationships with members of other shift subgroups. Technology in large part helps build capacity for allowing this kind of sharing of human resources and information.

Because [redacted] operates in an exclusively remote environment using Microsoft Teams to communicate through a shared set of channels between shifts, group and departmental knowledge is available to all members of the department. Digital communication environments like this facilitate sharing of information and resources to such a degree that the lines of differentiation between the shift subgroups are nearly eliminated. The definition of what "team" a member is on eventually becomes tied to what time an employee clocks in rather than who they are working with or what is being done.

Content in the communication between employees can include the following:

- **Incoming calls** – Operations staff receive a call from a client requesting information or status of an exam that was ordered or calling regarding some issue needing to be addressed; the team then documents this in the chat or seeks support in helping address the issue.
- **Communicating tasks** – Operations staff communicating they are working on documenting a certain patient, assigning tasks, or seeking support in completing a task.
- **Documenting interactions** – such as calls being made, or critical findings being reported.
- **Support seeking** - team members asking others for support in addressing issues or questions not related to an immediate client need, such as needing IT support, or locating information.
- **Non-work-related talk** – Talk focused on developing interpersonal relationships such as humor, support, and self-disclosure.

NETWORK ROLES

The highly interconnected networks of communication between members and the nature of the department's focus make it difficult for isolates and gatekeepers to exist. The team leads are often the "star communicators" because their responsibilities in managing team resources and directing the team during a shift and keeping in contact with supervisors. Team leads can also serve as bridges to other teams both synchronously and asynchronously through reports and messaging to communicate information. All operations technicians and team leads also serve as liaisons between clients and the organization due to customer service being a key role of the department.

DYADIC AND INDIVIDUAL DIMENSIONS

Dyadic relationships within the department offer consistent levels and time together to build relationships between employees where everyone is accessible through email or instant messaging on Teams. Low turn-around time at the organization means that relationships between employees develop strongly through time and can offer a sense of trust and camaraderie. Digital communication offers multiplexity in communication allowing for text, audio, and visual communication depending on the need. The openness of these relationships however can be restricted by technology. Teams chats and phone calls are subject to being audited for review, which impacts the level of honesty and openness people feel they can have for fear of punishment.

For individuals, the shared nature of the communication environment on Teams as a core process of the organization means that it is impossible for an employee to feel out of the loop. Accessibility to other team members is easily done through Teams messaging, email, and phone calls. But the quality and range of the connections a member can be influenced by extrinsic factors such as the workload level – if a shift is busy then the ability to build richer relationships with people is limited.

NETWORK ADVANTAGES/DISADVANTAGES

The strength of this kind of network lies in how flexible the organization can be with people and information. The ability to blend team members within other groups allows for smooth transitions during shift hand-offs and giving team members more flexibility in their scheduling. Using technology as the communication environment allows the entire team to share information with each other that allows the entire department to function cohesively with a shared understanding.

A potential issue with the department's bureaucratic but also fluid structure is a possibility for confusion when it comes to who to seek to address issues. For example if an email outlines a new policy, it will ask team members to address the chain of command (i.e., their supervisor) for any questions; does this mean the team member addresses their particular shift's supervisor or just the supervisor that is currently on call – and what if their supervisor is on vacation? In a shift with multiple leads and an operations technician asks a question for help, there isn't a clear expectation of who is to answer first – which leads to a delay response.

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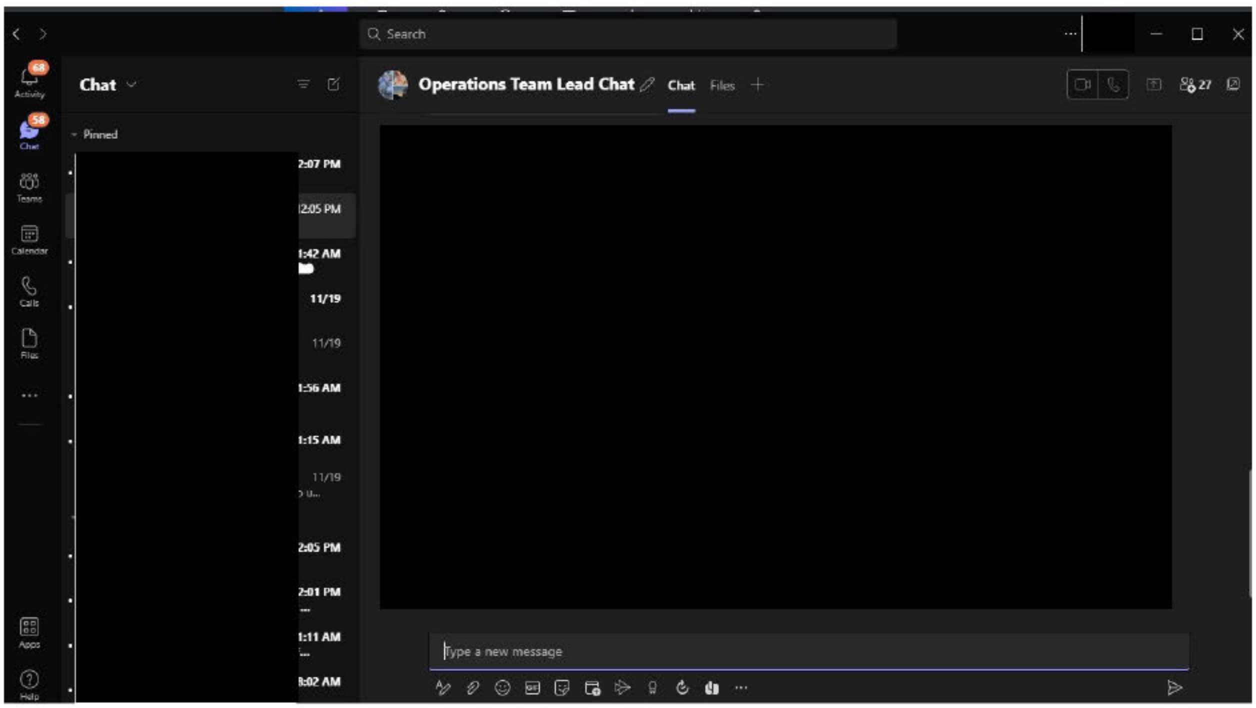
Org. Data – Artifact Analysis

ARTIFACT 1: MICROSOFT TEAMS WORKSPACE



Over the years [redacted] has evolved form face to face communication of a traditional office environment, to using instant messaging platforms like Yahoo! Messenger and Skype, and finally to Microsoft Teams as an integrated platform for organizational communication and management of information. Initially, computer mediated communication (CMC) had been used for simple text-based exchanges of information and needs; but as the technological capacity and need for decentralized non-physical workspaces grew, the department and the organization adapted to utilize the platform to manage organizational knowledge as well as facilitating communication within the organization.

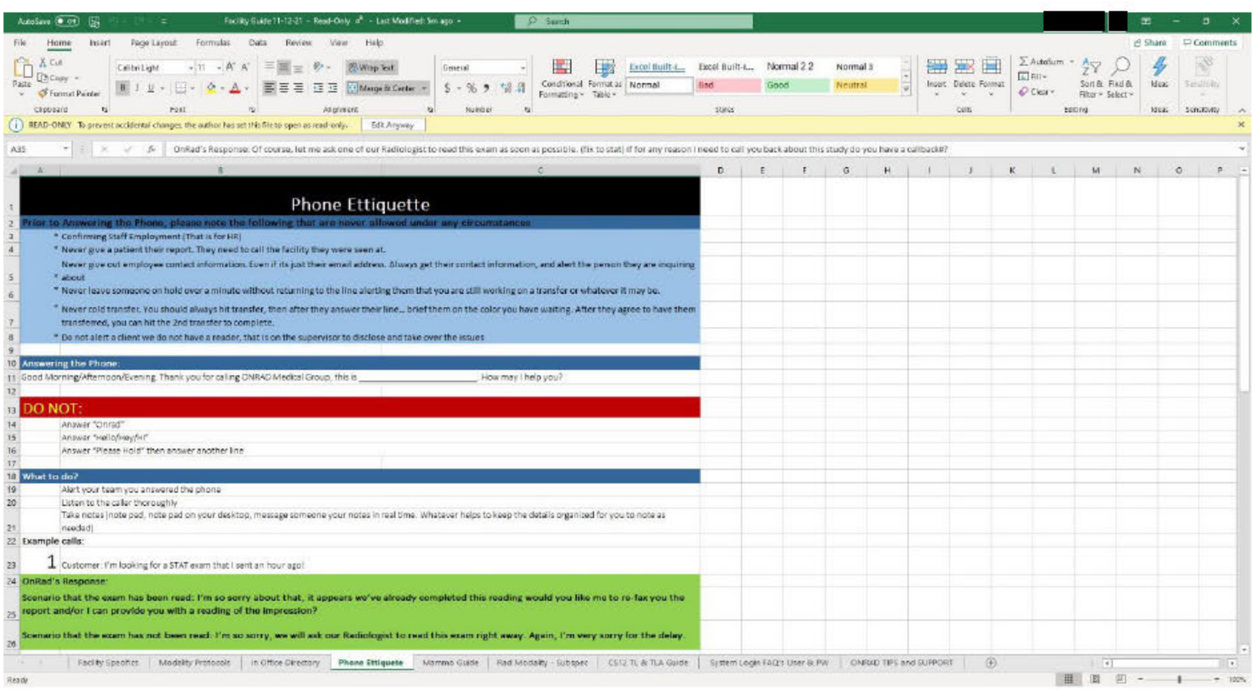
The dynamics of online communication in “chatrooms” impact communicating and developing social relationships outside the context of work tasks by making personal interactions either fully public through talking in the group chat, or private through private messaging. Serendipitous run-ins are impossible in this environment so social interaction must be a conscious decision to seek out and engage others.

ARTIFACT 2: STAFF ASSIGNMENTS WITHIN A TEAMS CHAT

Staff Member	Worklist Assignment	Task	1st Break	Lunch	2nd Break	RAD Chat assignment
[redacted]	Validator		3:30pm	6pm	8:30pm	[redacted]
	Validator	Addendums	5:30pm	6:30pm	9pm	
	Ordered	F/U CTRS	5:40pm	7pm	9:30pm	
	Backup TL/Validator	Staff Grid/RAD Audit/ RAD Chat Monitor	5:50pm	7:30pm	10pm	
	Primary Lead	Emails/OUTPT	6pm	8pm	10:30pm	
	Validator		10:15pm	12:30a	3am	
	Validator		12am	2am	4:30am	

This table is a message communicated by Team Leads to the operations team to assign roles within a shift, assign specific members the tasks of upkeeping a document that tracks important items (e.g., amendments, follow-ups to critical findings, error tracking, etc.), and when the scheduled breaks are to be taken at. Typically, these schedules are created in advance by the supervisors but need to be occasionally adjusted when employees call out of work. This communicative process creates the temporary structure of employee roles and responsibilities and defines who possesses authority during the length of the shift.

ARTIFACT 3: FACILITY GUIDE EXCEL SPREADSHEET



This is the "Facility Guide" an excel document that contained a tabled view of all organizational clients, and the specific needs and obligations of their individual contracts such as expected turnaround time, and who is allowed to communicate to client physicians. Over time, more and more information relating to protocols, in-office contacts, and helpful guides have been added to this document. This is an example of the operations department attempting to collect and display collected organizational knowledge in a searchable format for team members. On its first iterations, the Facility guide was one of the few documents that would be distributed to the team via email daily and at the time it made sense that a frequently updated and referenced document should also include important knowledge for the team.

This artifact is also an example of the organization's struggle to distribute and maintain organizational knowledge across the department. The guide has expanded far beyond its original intent to include content that is not relevant to its core function; It contains text-heavy amounts of information that make Excel an unsuitable medium for this kind of information. More appropriate adaptations to this organizational need would be to leverage the wiki functions offered within Teams, SharePoint, or newer workspace tools in development like Notion or Microsoft Loop.

ARTIFACT 4: EMAIL REGARDING FUTURE USE OF WEBCAMS

New Communication Equipment

[redacted]
Sat 11/13/2021 5:19 AM
To: Operations Department

Team -
Many of you may have already received new equipment for your work stations which includes a webcam. We are in the process of working out a new meeting system as well as form of communication while on shift.

Before the holidays, we plan on having all the details ironed out and explained by the end of this month. Till then, please hold onto your new webcams since they will be required equipment by end of year.

Thank You,
[redacted]

The information in this electronic mail may contain sensitive, confidential, protected health information intended only for the addressee(s). Any other person, including anyone who believes he/she might have received it due to an addressing error, is requested to notify the sender immediately by return electronic mail, and to delete it without further reading or retention. The information is not to be forwarded or shared unless in compliance with ONRAD policies on confidentiality and/or with the approval of the sender.

Reply | Reply all | Forward

This email was sent out by the Senior Director of Operations regarding an upcoming change in the department's use of computer mediated communication. Until recently, all meetings have either been in-person, or done through phone conferencing. This email indicates a shift in change in policy that will use technology to attempt a depth of communication that is closer to face-to-face. Because the organization has grown so quickly and the employee base now spans much of the Inland Empire, Orange County, and into Arizona's Maricopa County, many employees in the operations team have never even seen each other's faces aside from any potential user pics set in Microsoft's ecosystem. This policy change aims to bridge that gap and increase the richness of communication within the team by making video conferencing an official practice within the organization.

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Org. Data - Observations

SHIFT CHANGES AND ESTABLISHING ROLES

- Outgoing Team lead begins and completes the hand-off process notifying the incoming team lead of any new directives from supervisors or executive officers and any current issues the team needs to be aware of. This is typically done by phone call, but sometimes discussed in chat.
  [redacted]
- Incoming team lead welcomes the incoming shift by posting the assignments for that day of which team member is responsible for which tasks, which logs to keep, which radiologists they are to be keeping track of and maintaining communication with, and when their scheduled breaks are.
  - Roles established
    - Primary Team Lead – This role is held only by employees with the Team Lead job title. The supervisor designates one team lead to be the person responsible for running the shift, monitoring all parts of the workflow, guiding the team, and addressing any issues with staff, radiologists, and clients.
    - Backup Team Lead – The backup leads are other team leads who are on shift but fulfilling other non-team lead functions but are responsible for stepping in and handling issues that require a team lead but when the primary team lead is unavailable.
    - Validator – Person is responsible for monitoring incoming faxes and incoming studies, confirming that the information received on a patient's exam is accurate and correcting information as necessary. Person is also responsible for all incoming customer service calls and reporting abnormal critical findings to clients.
    - Ordered – Typically a single person whose sole task is to monitor the studies that have been completed by "validators" or directly from client facilities, verify and complete information one last time and to approve exam for reading by radiologists.
    - Arrived – This role is done by backup team leads who are responsible for monitoring and coordinating the flow of exams, adjusting radiologists' worklists, and ensuring exams meet established turnaround times. They are also responsible for providing customer service support via telephone as well.

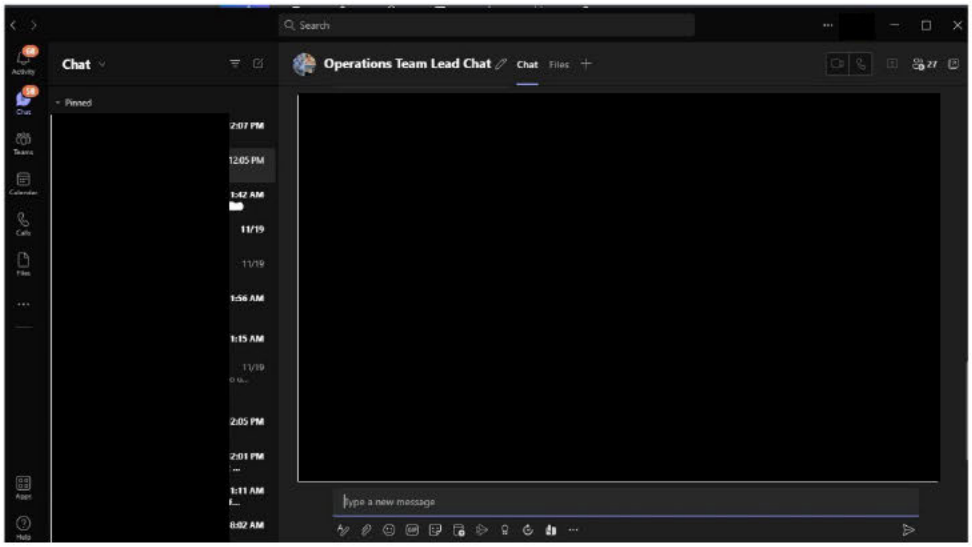
- Responsibilities established
  - Addendums – The team member assigned to this is responsible for maintaining and excel spreadsheet hosted on Microsoft Teams that documents every request for an amendment for an exam requested by a facility. The member is also responsible for following up with any radiologists through email or teams messaging about any outstanding amendments that have not been completed. This role serves as a form of accountability and quality control for the department.
  - F/U CTRS – "Follow-up Critical Test Results"; The member tasked with this list is responsible for sending out a department-wide email at the end of each shift detailing which critical findings on patients still needed to be reported to clients that could not be completed during the shift. This situation occurs when there is difficulty reaching a provider or the facility is non-responsive.
  - Staff Grids and Rad Audits – This task is usually done by Team leads as a quality control process that tracks employees who have made errors in processing or dictating patient reports.

CUSTOMER SERVICE/TELEPHONE INTERACTIONS

- Employees are expected to answer the telephone with a variation of "Good [morning/afternoon/evening], [redacted] this is [name], how can I help you?"
- Employees are requested to "smile with their eyes" and to maintain a courteous and professional demeanor.
- Though the organization is remote, policy forbids employees from talking about this. Employees are expected to maintain the image of the department and company as a traditional workplace where all employees are working in. This is to project and maintain an image of legitimacy and stability to clients and other healthcare publics.
- Majority of phone calls are from clients asking for status of studies, requesting expedited readings, or requesting to speak to radiologists.
- Clients requesting STAT reads or complaining about the length of time it is taking to receive a report are responded to with scripts like "I'm sorry for the delay, I will alert our radiologists to have this expedited for you."
  - The messages given to clients that imply a personal intervention and directly communicating with the radiologist are not reflective of how the actual expedition process occurs.
    - Actual process is the call is logged to a specific "Calling for STAT" chat in Teams that is monitored by Team Leads and use that list to mark studies on the radiologist's worklist "CALLED FOR" accordingly based on workload.
- Employees are never permitted to reveal any details about the workload the organization has or if a client's studies are being delayed by internal problems (e.g., lack of credentialed staff on that shift), even if the client suspects it and directly asks. Employees are expected to deflect such questions and assure the client that the situation is being worked on and to use emotional intelligence to find some way to soothe the client.

- If client is too upset or aggressive for a team member to handle it is escalated to a team lead, and then to the supervisor.
- Strategic use of "is there anything else I can help you with?" is used to politely end calls, or to reject requests for operations staff to do things that should be handled by other staff at client facilities.

CONSTRUCTION OF COLLABORATE ENVIRONMENT WITHIN MICROSOFT TEAMS



The operations department at [redacted] uses Teams chats for two different purposes based on the communication used: rooms and feeds. Visibility of some of these rooms are job role restricted.

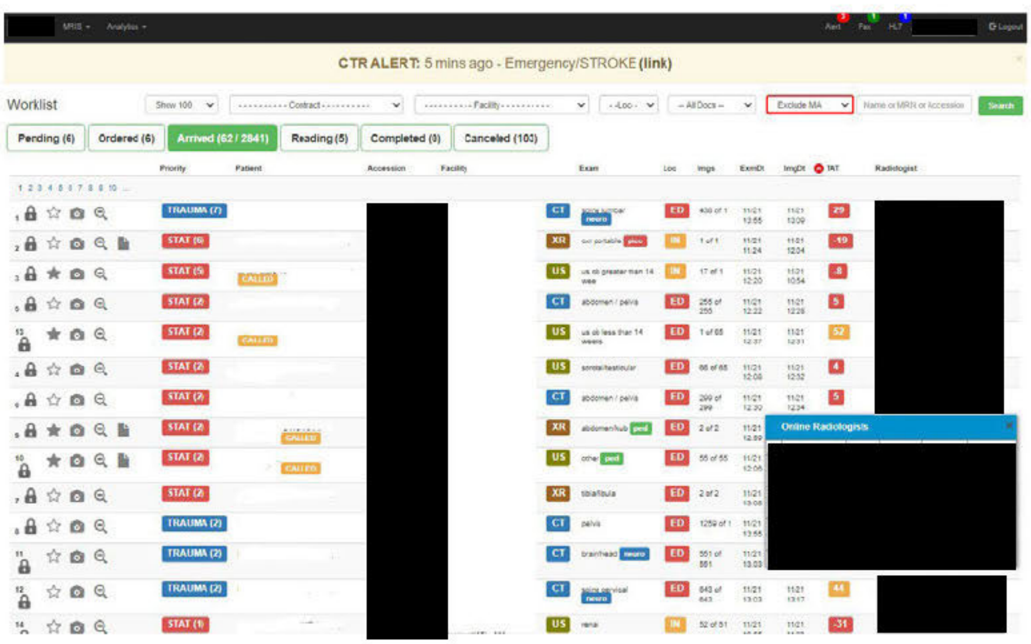
- **Rooms**: These chat spaces serve as a major space for communication and collaboration through real time messaging.
  - **Operations Chat – Main** serves as the largest "workspace" that involves all employees in the department.
  - **Operations Team Lead Chat** is exclusively for team leads to communicate with other leads and supervisors on higher level issues.
  - **Hybrid IT Chat –** Serves as an interdepartmental space to communicate technical issues with the IT department.
  - **Radiologist Chat –** Each radiologist has their own individual room to communicate with the operations team about any issues that occur or any requests to speak to a client physician.
- **Feeds:** These chat spaces are used for tracking of information that requires follow up or documentation on items that would be otherwise lost in the stream of conversation in the main chats.
  - **Site calling for STAT Chat –** Tracks studies that facilities have called looking for reports on. Team leads use this information to coordinate and prioritize studies to be read.

- **F/U CTR Chat –** Tracks studies that have been approved for follow up reporting the next morning or business day.

Types of messages within chats

- Most messages within the main chats are a stream of names from team members. This means that a member is taking ownership of a particular patient and preparing their exams and validating their information to send to reading.
- Occasionally members may post about phone calls they received that need to be brought to the attention of the team or the team lead, such as a client having trouble sending images. (e.g., [redacted] just called saying they're getting failed messages when sending images.")
- Employees make use of SMS type language to communicate (e.g., "lol", "lmao", "brb", "omg", etc.)
- Employees also use medical shorthand when possible, when communicating within chats and while documenting information for radiologists. For example, a patient's history could be described as "c/o CP w/ SOB x4d, R/O PE; Hx: CV+, No Sx" translates into "Complaints of chest pain with shortness of breath for four days, rule out pulmonary embolism; History of COVID, no surgical history."
- Teams' "reactions" are used to respond to messages: Thumbs up for agreement/compliance, hearts for gratitude and appreciation, and others used as responses to convey emotion.
- Sometimes memes are used to convey humor about issues occurring on shift, to cope with frustration, or off topic conversation.

WORKFLOW IN PROPIETARY RADIOLOGY INFORMATION SYSTEM (RIS)



The Radiology Information System (RIS) along with the Teams chat environment is the other half of what creates the “workspace” for the operations department at [redacted] This website is where much of the “work” is done but makes heavy use of communication through symbols to organize tasks and resources.

- Under the header of this screenshot is a banner mentioning a “CTR ALERT: 5m ago, EMERGENCY/STROKE” – These messages are automatically posted whenever an exam marked as a stroke protocol is completed to ensure it is called immediately. These are treated with extreme urgency because even minutes of delay in treatment can significantly lower rates of survival for patients.
- The series of dropdown menus are filtering tools to help manage large lists.
- Underneath the dropdown menus are a series of buttoned tabs that illustrate the steps that an exam takes in the process of being read with numbers indicating how many exams are in that state to indicate workload.
- Underneath that is the list of exams, each of which have patient info tagged and color coded based on the type of exam it is. The tags from left to right columns are:
    - Stroke (Green), Trauma (Blue), STAT (Red), and Routine (Gray)
    - Patient name and medical record number. If an exam has been called for it will get the “CALLED” yellow tag, which also signals the system to place it on the top of radiologist worklists.
    - Accession (the unique exam identification), and the facility the study is from
    - Exam Modalities (MRI, CT, US, Xray, Nuclear Medicine, Mammogram) are all color coded for quick viewing, and the body part being imaged is displayed.
        - Additional colored tags are used to mark specialty studies such as neurology, pediatrics, and line placements.
    - The next column indicates where the patient is located. Emergency Room (ED/Red), Inpatient (IN/Yellow), and Outpatient (OU Green). The patient’s location affects the eventual TAT (Turnaround Time) clock which is also color coded for how much time there is left to finish it according to that facility’s contract. Colors change from Green to Yellow to Red based on danger of going past contracted turnaround times.

REFLECTIONS ON RESEARCH QUESTIONS

[redacted] operations department has adapted to the remote work environment by having the foresight to invest in digitizing as much of their organization processes as possible over the years of its existence. With cloud software suites such as Office365, communication platforms such as Teams, and the development of an in-house software solution for radiology workflows, [redacted] operations team has become completely paperless with no necessary physical centralized space. If an employee has a computer and an internet connection, they can be fully productive anywhere around the world.

Remote work environments present challenges to building and maintaining social connections because the internet-based workspace is centered around fulfilling workplace functions, leaving no natural space for natural interaction that would typically happen in a workplace such as the watercooler. [redacted] department culture has responded to this lack of casual conversation contact by allowing off-topic chatting within the discussion spaces. The lack of communication richness from having to speak in either text or voice is being addressed in the coming year 2022 with the introduction of video conferencing into the workflow.