



# Innovation in Healthcare Team Feedback

## Development of an innovative feedback tool for interdisciplinary healthcare teams in the clinical environment

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### Abstract

Healthcare delivery is evolving from individual, autonomous practice to collaborative team practice. However, barriers such as professional autonomy, time constraints and the perception of error as failure preclude learning behaviours that can facilitate organizational learning and improvement. Although experimentation, engaging in questions and feedback, discussing errors and reflecting on results can facilitate learning and promote effective performance, the cultural barriers within healthcare can prevent or inhibit this type of behaviour among teams.

At the University Health Network's Centre for Innovation in Complex Care, we realize the need for a tool that facilitates learning behaviour and is sensitive to the risk-averse nature of the clinical environment. The vehicle for the Team Feedback

Tool is a web-based application called Rypple ([www.rypple.com](http://www.rypple.com)), which allows team members to provide anonymous, rapid-fire feedback on team processes and performance. Rypple facilitates communication, elicits feedback and provokes discussion. The process enables follow-up face-to-face team discussions and encourages teams to create actionable solutions for incremental changes to enhance team health and performance. The Team Feedback Tool was implemented and piloted in general internal medicine at the University Health Network's Toronto General Hospital from early May 2009 to July 2009 to address the issues of teamwork and learning behaviour in the clinical environment. This article explores the opportunities and barriers associated with the implementation of the Team Feedback Tool.

### **Paradigm Shift: From Solo to Team Practice**

The healthcare system is experiencing a paradigm shift in how patient care is provided. Healthcare, which was traditionally delivered by silos of individual, autonomous healthcare professionals, is now often delivered by collaborative team practices (Shine 2002). Healthcare delivery is intrinsically interdisciplinary and requires physicians, nurses and allied health professionals to provide patient care by collaborating in teams (Manser 2009). Critical trends in healthcare delivery such as increasing knowledge, interdependence and specialization suggest there is a need for interdisciplinary collaborative learning (Nemhard and Edmondson 2006). Although the need for interdisciplinary healthcare teams is understood, exchange between disciplines can be mired due to differences in vocabulary, understanding, approaches and interests (Hall and Weaver 2001).

Interdisciplinary healthcare teams have been shown to positively impact patient care. Sommers (2000) illustrates positive patient outcomes associated with an interdisciplinary collaborative practice for chronically ill seniors such as reductions in hospital re-admissions, office visits and costs. Furthermore, Manser's (2008) literature review of teamwork in healthcare proposes that effective teams are vital for assuring patient safety and preventing adverse events.

Although effective interdisciplinary healthcare teams have been shown to be associated with positive patient outcomes, they are still faced with challenges and barriers.

### **Learning Behaviour and Interdisciplinary Team Barriers**

Edmondson (1999) defines group learning as being an ongoing process of adaptive change which is characterized by experimentation, engaging in questions and feedback and discussing errors and results. These learning behaviours allow teams to reflect on previous experiences which could result in positive change. However, there are cultural barriers within healthcare surrounding professional autonomy, failure, turnover and time constraints which can preclude or inhibit these types of behaviours.

### **Professional Autonomy and the Fear of Speaking Up**

Shine describes the shift in healthcare delivery, stating, "The 20th century physician prided himself or herself on autonomy, as opposed to the requirements in the 21st century for teamwork in health care" (2002: 92). Emphasis on the individual professional in healthcare can impede organizational learning and can therefore hamper organizational improvement. While individuals who do not speak up may feel personally protected against the potential consequences of doing so, learning opportunities are missed and the team is harmed as a result (Edmondson 2003). As such, medical education and training must focus on change and team performance. To do this, Shine (2002) recommends introducing interdisciplinary cultures and professions to medical students

throughout their training so they can learn to collaborate.

Hierarchical structures in healthcare teams can also result in communication deficiencies among members which impede their learning behaviours and team effectiveness. The willingness to speak up freely is dependent on an individual's psychological safety, which Kahn describes as "feeling able to show and employ one's self without fear of negative consequences to self-image, status, or career" (1990: 708). Research shows that interdisciplinary surgical team members who perceived their environments to be psychologically safe were more likely to provide feedback and therefore learned faster in comparison to those who did not (Edmondson 2001). Psychological safety may be difficult to attain when hierarchical structures are in place, which may prevent individuals from speaking up freely. The fear of speaking up and asking for help may prevent significant learning opportunities from occurring (Kroll et al. 2008). However, as Walton states, "When the hierarchy is balanced in favour of teaching and learning rather than the exercise of power, everyone will become a resource" (2006: 230). Some clinicians are employing novel techniques such as assertiveness training on their health teams, recognizing the need to provide safe environments that enable healthcare professionals to speak freely (Walton 2006).

### **Failure and Infallibility**

Failure can have major implications in a clinical environment and, as a result, is feared by many healthcare professionals. Cannon and Edmondson (2001) conceptualize failure as a divergence from avoidable and unavoidable expected outcomes, including interpersonal misunderstandings and conflicts. The identification of failures can facilitate learning and minor failures provide early warning signs, which if addressed may help circumvent major future failures (Cannon and Edmondson 2001). However, the admission or acknowledgement of failure can be difficult for healthcare professionals, as medicine tends to be what Shine calls a "blame-and-shame" profession, "in which the individual physician is supposed to know everything and not acknowledge when he or she is wrong or makes errors" (2002: 93). Furthermore, some may believe that learning behaviours such as admission of error and requesting help may demonstrate incompetence (Edmondson 1999). Quality improvement efforts may also be hampered due to the high stakes which exist in the healthcare setting. Because human life is at stake, failure can inhibit team members from engaging in behaviours like brainstorming and experimentation (Nemhard and Edmondson 2006) – behaviours that could facilitate group learning (Edmondson 1999).

### **High Turnover and Time Constraints**

Another obstacle to developing interdisciplinary healthcare team performance, particularly in educational acute care settings is the frequent turnover rate of team members. An example of

this type of setting is general internal medicine (GIM) at the University Health Network's (UHN) Toronto General Hospital (TGH). The interdisciplinary GIM teams at TGH each consist of an attending physician, medical residents, allied health staff and medical students. Nurses are not specifically team aligned in this environment and work with all of the teams on an on-going basis. Within these teams, the transient members (typically the attending physicians, residents and students) generally experience monthly or bi-monthly turnovers, whereas the membership of allied health staff can last years.

Healthcare professionals typically work long hours and have the most face time with their teams when discussing patient care. As a result, the team feedback process may be avoided by some simply because they do not have the time to engage in meaningful discourse.

Cultural issues in healthcare such as professional hierarchies, risk-aversion, time constraints and the relatively short lifespan of many interdisciplinary health teams create barriers to team process improvement. This presents a unique opportunity to discover new methods and tools to encourage the implementation of innovative ideas, mitigate the barriers for healthcare professionals to provide feedback and catalyze team development despite teams' short life spans to enhance team performance and ultimately patient outcomes. Time constraints, high turnover rates and the myriad of cultural issues in healthcare are barriers to real-time feedback that can prevent teams from dealing with issues while they are still relevant.

### Team Feedback Tool

Ongoing interdisciplinary team improvement can be significant for enhancing performance, processes and more importantly, patient care. However, the necessary tools need to be developed to encourage learning behaviour and to address the barriers which exist in the healthcare environment that prevent team development.

UHN's Centre for Innovation in Complex Care's (CICC) mission is to improve global healthcare through innovation and the dissemination of new best practices.

We recognize the need for a tool that elicits feedback, facilitates discourse and promotes learning behaviour among health team members. It is also crucial that this tool be sensitive to the unique barriers and risk-averse nature of the clinical environment. The CICC spearheaded the development of the Team Feedback Tool to address the issues of teamwork and feedback in the clinical environment.

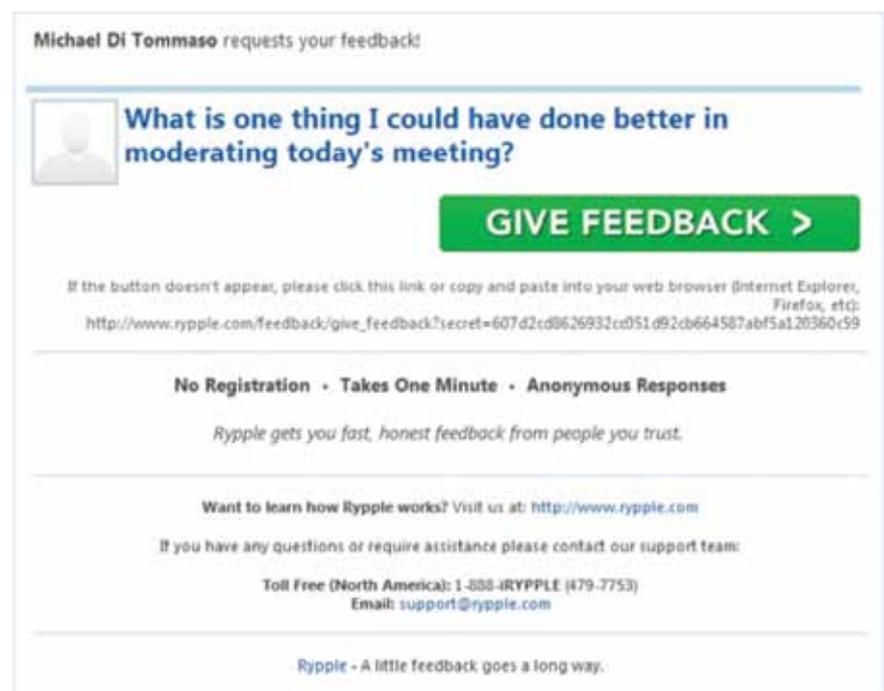
### The Setting

The Team Feedback Tool was piloted in GIM at TGH, a teaching hospital affiliated with the University of Toronto, from early May to July 2009. The GIM service consists of four teaching teams and one hospitalist team. The tool was piloted on three teaching teams, each consisting of one attending staff, one senior resident, junior residents, medical students, one pharmacist and one social worker. Other allied health members such as occupational therapists, spiritual care professionals and physiotherapists each belong to multiple teams, while the nurses on the ward are not specifically team-aligned. The team's constructive feedback about the tool and process regularly shaped the tool's design to best suit the healthcare professionals' needs.

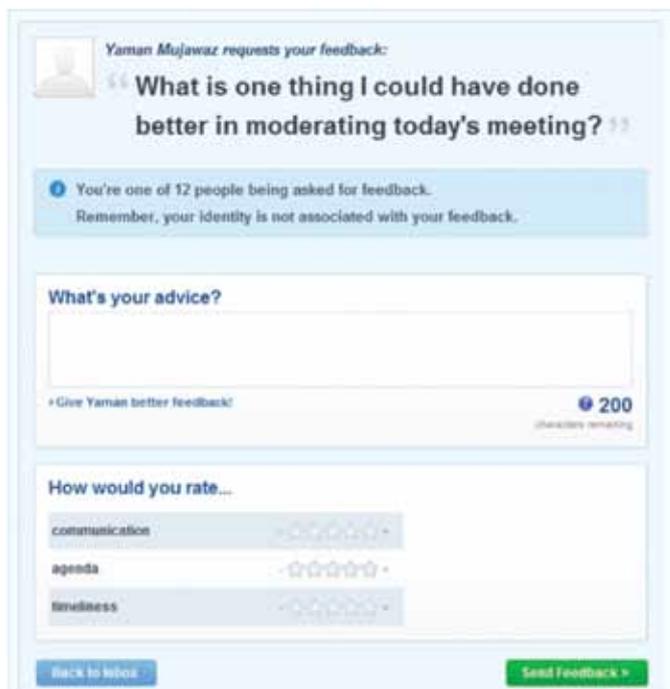
### The Vehicle

As a clinician, one of the authors recognized the barriers to team

**FIGURE 1.**  
**Rypple question sent through e-mail asking for feedback**



**FIGURE 2.**  
**Providing feedback by responding to a Rypple question**



Note the character limit and three attributes, which are rated on a five-star Likert scale.

**FIGURE 3.**  
**Aggregated team feedback with quantitative and qualitative data**



communication, feedback and learning in the GIM environment. Upon initial assessment of the reasons for these barriers, anonymity and convenience were immediately recognized by our research group as key components for any vehicle focused on enabling team discourse and learning. Our team members had experience using an existing online application called Rypple for personal professional development both in hospital and academic settings. As Rypple requests anonymous feedback to one focused question, the authors found the application addressed many of the barriers identified above. Based on personal success with the application in the healthcare setting, our team set out to pilot its utility as a health team-based tool. Because convenience was identified as a major barrier to team communication, the research group chose Rypple over other online survey applications, such as Survey Monkey ([www.surveymonkey.com](http://www.surveymonkey.com)), which allows users to create extensive, multi-question surveys.

Rypple ([www.rypple.com](http://www.rypple.com)) is a website that allows users to request feedback from a group of trusted colleagues, called “advisers,” by prompting them each for feedback through a question sent through e-mail (Figure 1). These “advisers” are then able to electronically provide anonymous feedback to the sender. The anonymity Rypple provides is transparent and is a key ingredient in providing users with a safe, comfortable platform in which to ask for and provide feedback.

Users are limited to 200 characters when asking a Rypple question and when providing feedback (Figure 2). The anonymity and short character limit encourages honest and direct responses to feedback inquiries. The short character limit can further strengthen the anonymity of the feedback – by forcing “advisers” to be concise, the character limit can alter their writing styles. Furthermore, Rypple demands focused feedback inquiries and responses by asking “advisers” a single question, whereas other

web-based survey services, such as Survey Monkey, allow users to construct and distribute extensive multi-question surveys which can be time consuming. Users typically spend less than a minute responding to a Rypple question. Rypple allows users to obtain both quantitative and qualitative feedback. For example, a user can request feedback on the question “What is one thing we can do to improve our team’s performance?” resulting in qualitative feedback from “advisers.” For a more quantitative measure, a user can request their “advisers” rate different attributes (e.g., communication, efficiency, professionalism) on a five-star Likert scale for each attribute (Figure 3). Users who ask consistently about the same attributes can see trend analyses based on the feedback they have received, for example, an increase or decrease on the Likert scale for efficiency over time.

There has been a significant uptake of Rypple use by the corporate sector. However, business and healthcare environments experience different barriers to team feedback and have different approaches and motivations for providing feedback and implementing change. We chose Rypple as the vehicle for the tool because it immediately addressed certain barriers to team learning in the clinical environment. For example, the anonymity it provides could mitigate hierarchy issues and the fear of speaking up. Moreover, the timely manner in which Rypple can be used could be ideal for healthcare professionals with time constraints. Real-time feedback provided through Rypple could also enable teams to discuss issues while they are still relevant. Although Rypple provides features that may address issues in the business sector, some features may not be appropriate or user-friendly in the clinical environment. To test this, we implemented Rypple on GIM teams with the goal of mitigating the barriers to interdisciplinary group learning and improving team performance and patient care. Together with Rypple and GIM healthcare professionals, we committed to exploring those needs to develop an optimal system with Rypple, which addresses the unique barriers to group learning in healthcare. We refer to our implementation of Rypple, the identification of barriers to its usage in healthcare and the development of an optimized feedback tool for healthcare teams as the Team Feedback Tool.

### **The Process**

The implementation of the Team Feedback Tool was initiated by communicating the project goals to selected teams in GIM. Rypple accounts were then created on the teams’ behalf and one team member was selected to moderate each feedback cycle. Each cycle consisted of selecting a Rypple question, distributing it to the team members, moderating the discussion session that followed about the feedback responses to the selected questions and incorporating what was discussed into future questions. Each feedback cycle lasted two weeks – one question was sent to team members weekly, and 15-minute feedback sessions were held

bi-weekly based on the feedback that was collected. Following the discussion session, a new moderator was selected by group consensus or on a volunteer basis, and a new cycle began.

### **Outcomes**

Participating health team members provided us with constructive feedback to help continuously improve the quality of the tool. Since the introduction of the Team Feedback Tool, some healthcare professionals noted an improved sense of “teamness” and enhanced communication on their respective teams. One team member used Rypple to convey the benefits of the tool, in response to the following question:

Q: “Looking back to May and June, how did (we) perform as a team? What did we do well in? What can we improve on? Would you do it again?”

A: “Rypple helped us to develop, grow and become more aware. Raised good issues. For next time – helpful to get to know each other more on a personal level; watch tone; remember all are equal members.”

Some team members using the tool valued the anonymity, simplicity and brevity that Rypple offered as well as the opportunity to further discuss team issues during face-to-face feedback sessions. Other feedback from healthcare professionals noted the value of the feedback sessions because it gave the team a dedicated period of time to discuss current issues and strategize resolutions that would not have been addressed without a scheduled meeting. Some of the issues included the lack of team communication on patient discharge planning; inappropriate calls to the medical teams’ mobile devices from healthcare professionals; and the desire for the team to get better acquainted at a more personal level. During feedback discussions, teams devised strategies aimed at resolving these above issues, such as using a common communication tool to relay discharge information; defining what constitutes as an appropriate and inappropriate call and using Rypple to ask a team icebreaker question at the team’s inception, for example “What is one talent/skill/activity you are good at?” Some teams problem-solved and developed actionable solutions based on the feedback they received through Rypple (Table 1). For example, one medical team requested feedback from its members about how to improve the team’s culture and environment. Some feedback indicated that team members were not clear on each other’s names and/or roles. This feedback prompted a team discussion which resulted in the development of weekly allied health orientation teaching sessions. These teaching sessions revolved around patient cases and individual team members’ roles and skills in relation to the cases.

The development and implementation of the Team Feedback Tool was an iterative process and was continuously developed

**TABLE 1.**  
**Example of Team Feedback Tool process and outputs**

Question	Feedback	Actionable Solution	Outputs of Team Feedback Tool
"What is one thing we could do to improve our team's culture and environment?"	Establish a process for identifying and clarifying team member roles*	Develop weekly teaching/orientation sessions to identify and clarify team member roles	The question and resulting feedback identified a need for identifying team member roles.
			The feedback session provided a forum to discuss the problem.
			The team collaboratively decided on an actionable solution to the problem.
			The team developed and implemented a solution to the problem (weekly teaching sessions revolved around patient cases and individual team members' roles and skills related to the case).

\*Example of feedback from team feedback session.

during the pilot based on feedback and suggestions from health team members. We regularly engaged providers in discussions about their perceptions of the utility and effectiveness of the tool. Although no formal evaluation was made to quantify a correlation between the team's tool usage and whether there was a change in how members perceived their team performances, some healthcare professionals expressed that they perceived improvements in areas of communication, collaboration, leadership, overall team atmosphere and dynamics.

### Challenges

Although the Team Feedback Tool facilitated some improvements in team dynamics, there were challenges that were encountered during the tool's implementation such as frequency and fatigue, administrative tasks and effectively involving nurses in the process, which were barriers to the tool's success.

### Frequency and Fatigue

The frequency with which the Rypple questions were sent and the length of time allotted for discussion sessions proved to be an issue in the initial stages of the Team Feedback Tool's implementation. Most team members felt that the original process of answering two Rypple questions per week and attending one session per week was too demanding. Due to unanimous feedback following the first week of implementation, the process component of the tool was modified to one question weekly, followed by a 15-minute bi-weekly discussion.

Teams also experienced fatigue surrounding the tool and the process. This proved to be the case for several residents on the teams. Some residents admitted that they neglected to answer Rypple questions because they felt the questions were irrelevant. Furthermore, concerns were raised about how team process

improvement and feedback discussions would impact residents' evaluations. This could have been a barrier to engaging residents in the Team Feedback Tool.

Additionally, some participants noted difficulty in developing questions that resulted in useful and constructive feedback. This was mostly due to time constraints. To alleviate these issues, we worked with teams to develop a question library that would be accessible to them directly in the Rypple platform. Team members requesting feedback through Rypple could select a pre-loaded question tagged with key words, such as "health care," "teamwork" and "communication" to simplify selection. The questions were both generalized (e.g., What is one thing we can do to increase our team members' level of understanding of each other's tasks and responsibilities?) and healthcare specific (e.g., "What is one thing we can do to improve communication on patient transfer to long-term care facilities?). Team members were able to request feedback with either self-directed or pre-loaded questions. The goal of the question library was to reduce fatigue and to simplify use, however, further development and evaluation is required to understand its impact on the process.

Fatigue also occurred at times when feedback questions were repetitive, or what team members found to be too general. Some team members admitted to not replying to a feedback request because they felt the questions were too similar to previous questions asked. One team experienced a decline in their response rates due to these issues. Frequency and fatigue are issues that could prevent usage of the tool and need to be addressed in future tool developments.

### Administrative Tasks

The administrative tasks associated with managing a Rypple account such as uploading team members' e-mail addresses,

forming and sending questions, consulting feedback and initiating the discussion, proved to be taxing for some participants. Rypple questions are sent via e-mail. Due to the high turnover rates, team members' e-mail addresses change frequently, resulting in constant account management to ensure all team members receive the Rypple questions. Furthermore, new moderators accessing the platform for the first time may be unfamiliar with and uncertain of the utility of the platform, resulting in more time spent organizing the feedback process.

### **Effectively Involving Nurses in the Process**

There was interest from nursing to be involved in the Team Feedback Tool pilot; however, they acknowledged that because nurses are not team-aligned it would be difficult for them to participate. In addition, their access to the Internet on the ward is limited due to their duties throughout the day and varying work schedules. To address this issue, one nurse who had frequent Internet access was assigned to each team to represent the nursing perspective and contribute to the discussion. This method had limitations. Pulling one nurse from the floor to represent an entire staff population could be burdensome for the nurse designate and alienating for the rest of the nursing staff. Incorporating nurse feedback in team-specific discussions proved to be difficult, as nurses interact with each team on a daily basis. Access to technology was also a major issue for nursing engagement in this process. Unlike the attending physicians and residents, nurses do not necessarily have mobile, web-based technology. Access to desktop computers on the ward is limited and is a barrier to accessing email and the Rypple website. Although in this healthcare context nursing is not specifically team-aligned, they are an important part of each team. Their input and participation in feedback sessions is thus paramount in designing an effective process for the Team Feedback Tool and for obtaining truly interdisciplinary feedback. More work is needed to explore different methods of effectively involving nursing. This work is under way.

### **Future Work**

The feedback received from the preliminary implementation of Rypple in the clinical environment provided valuable insight and presented many opportunities for creating an optimal team-based feedback system for healthcare. We will continue to develop the tool, perfect the process to meet the needs of the interdisciplinary health teams in GIM at TGH, better address administrative demands of the tool and include and engage nurses and residents in the process. Additionally, we hope to implement the Team Feedback Tool across multiple teams in order to generalize the process to suit multiple needs in various healthcare environments.

### **Conclusion**

Healthcare delivery is evolving from professional autonomous

practice to team practice (Shine 2002), yet there are cultural barriers which negate learning behaviours that can facilitate organizational learning and change. These behaviours are paramount because they allow interdisciplinary teams to reflect on experiences which could result in positive change and improvement. Furthermore, higher performing teams have been associated with positive patient outcomes, whereas ineffective team interactions have been found to contribute to adverse events.

Edmondson (1999) suggests that organizational improvements and effective performance on individual and team levels may be gained by promoting learning behaviours such as experimentation, engaging in questions and feedback and discussion of errors (Edmondson 1999). The Team Feedback Tool may be able to facilitate organizational improvement by eliciting feedback, promoting discussion and facilitating communication and psychological safety. Further work is needed to evaluate the tool's impact on team performance and to understand the complex barriers in healthcare that prevent teams from consistently improving behaviour, processes and performance. We will continue to develop and improve the Team Feedback Tool to address these barriers and to create a process that is generalizable and adds value to various healthcare team interactions and performances. **HQ**

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