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Teamwork related competencies for Internship: Issues & challenges in Assessment

Asela Olupeliyawa

MBBS, Master of Health Professions Education student
Supervisors: A/Prof. Chris Hughes & Dr. Chinthaka Balasooriya
SCHOOL OF PUBLIC HEALTH
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Outline of presentation

- Research on teamwork in healthcare and the junior medical officer dimension
- Exploring perceptions of teamwork related competencies and their teaching/ learning and assessment
- Issues in workplace based assessment of teamwork related competencies among medical students

Need for a targeted approach to teamwork training

- Research & advocacy on patient safety
 - Errors in healthcare due to teamwork failures among trainees
(Walton, 2004; Singh et al, 2007)
 - Garling Report – teamwork training essential (Garling, 2008)
- Benefits of improved teamwork training among healthcare teams
 - Reducing medical errors, improving technical performance, improving staff satisfaction (Morey et al. 2007; Pratt et al. 2007; McCulloch et al. 2008)



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Research Questions

1. What teamwork competencies are required of an intern to function safely and effectively in the clinical environment?
 - 1.1. What are the critical elements for an intern?
 - 1.2. What critical elements can be targeted in undergraduate education?
1. How well prepared are undergraduate students in these critical elements?
2. How can we better prepare and assess undergraduate students in these critical elements?



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Teamwork in healthcare – the literature on competencies: Literature Review

	Team training & dynamic domains of healthcare	Competencies emphasized additionally in Interprofessional practice	Competencies emphasized additionally in Undergraduate education
Shared understanding	<ul style="list-style-type: none"> Shared vision Shared mental models Situational awareness 	<ul style="list-style-type: none"> Understanding impact of professional background on roles & responsibilities Involving professionals in dispersed teams 	<ul style="list-style-type: none"> Understanding contexts such as patient handovers Knowing one's limitations
Team leadership	<ul style="list-style-type: none"> Decision making Conflict resolution Adaptability 	<ul style="list-style-type: none"> Prioritizing patient-centred integrative care 	<ul style="list-style-type: none"> Assertiveness Valuing others' expertise in decision making
Team support	<ul style="list-style-type: none"> Mutual trust Team orientation Performance monitoring Backup behaviour 	<ul style="list-style-type: none"> Willingness to collaborate with other professions Teaching other professions 	<ul style="list-style-type: none"> Dealing with other team members in patients' interests Teaching/ learning together
Communication	<ul style="list-style-type: none"> Feedback Closed-loop communication 	<ul style="list-style-type: none"> Communicating with respect/ clarity Regular review 	<ul style="list-style-type: none"> Clarity and accountability



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Teamwork Context for Interns: supervisor & student perceptions - methods

- 6 semi-structured interviews with supervisors of interns (UNSW staff)
- Purposive sampling: Medicine, Surgery, Chronic care, Emergency care
- Interviews structured according to the domains identified in literature review
- 4 focus group discussions with 25 students (4 to 8 students per group) at the point of graduation
- Purposive sampling: 3 groups from different metropolitan hospitals and a group from a rural hospital
- Discussion structured around critical elements identified through supervisor interviews

Teamwork Context for Interns: supervisor perceptions - team structure

- Hierarchical structure within the medical team
“vertical interaction”, “lowest peg”, “bottom of the totem pole”
- Intern as liaison with the interprofessional team and patients/ carers
“nursing staff will usually relay patient concerns to junior medical staff”, “senior medical staff may expect them to liaise with other members of the (multidisciplinary) team for discharge planning”, “often the patient will tell them things they won’t tell someone else”
- Intern as ‘external communicator’
“they need to have good interpersonal skills not just with their immediate teams but with the other people they need to interact to get the work done in the hospital”, “after hours cover is an issue because they’ve got no involvement to that team at all”



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Teamwork Context for Interns: supervisor perceptions – teamwork competencies

- Critical elements identified through preliminary interviews:
 - Knowing their own role and limitations and seeking support appropriately
 - Working and liaising effectively with nursing/ allied health professionals
 - Adaptability to changing situations
 - Proactivity
 - Advocating for the patient
 - Readiness to support other team members
 - Contributing for a positive team environment



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Teamwork assessment - the literature on undergraduate education

- Assessing communication and interpersonal competence (review)-

Ratings of direct observations & video/ audiotape interactions; patient questionnaire or survey; and examination of knowledge, perceptions, attitudes

(Duffy et al., 2004)

- Assessing professionalism (review) –

Observed clinical encounters, multisource feedback, patients' opinions, paper-based tests or simulations, and self/peer assessment

(Wilkinson et al., 2009)



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Assessment of critical components of teamwork for interns – student perceptions: Strengths

- Experiences, Reflection and Feedback

“presentations at team meetings, as a form of feedback, was pretty good for teamwork”

“written comments (in Mini CEXs/ learning plans) were great. What you did and what could be improved, was useful”

“In assignments with communication or teamwork as a focus, talking about the roles of different people and where teamwork breaks down was useful”

“Group projects was helpful to know what worked in a team and what did not”, “those late night calls and stuff teach you how to deal with people whom you’re not best friends with”



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Assessment of critical components of teamwork for interns – student perceptions: Challenges

- Need for workplace based, multi rater assessment

“half a day of being in a team meeting or talking to a team member teaches you so much more than so many assignments, but if we get assessed on assignments, if that’s not examinable, what’s the point?”

“teamwork assignments really didn’t indicate how you work in a team, as they were interviews with a few members of a team who hadn’t even met each other”

“I think it’s artificial when someone reads an essay on how you implemented teamwork”, “it comes down to how well a person can express himself”

“in the medical system there’s a hierarchy, in group projects it’s all horizontal”

“how are they going to watch you on teamwork, I guess that is why these assignments exist, but I’m not sure they do the best job”

“Although they (consultants) are the ones who sign you, they are not the ones who spend time with you”, “There can’t be a better person than the intern and the registrar to ask students to demonstrate teamwork and comment on them”



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Assessment of critical components of teamwork for interns – student perceptions: Challenges

- **Complexity – Reliability, validity and assessor training**
 - “it would be better to have done it or haven’t done it rather than variation between different expectations of different consultants”
 - “a simpler system may get less information with most ticking satisfactory”
 - “getting a mark out of it (mini CEX) is a bit silly as most clinicians tick what is they think is most appropriate without being familiar”
 - “none of the doctors who marked me up (learning plans) ever read anything, they were all busy, and kind of said, where do I tick?”
- **Errors of central tendency**
 - “If you’re given a P, P- or P+ you really don’t know. Every other student in some hospital are getting Ps and every other student in another hospital is getting P+”
- **‘Halo’ effect**
 - “I seemed to get good marks if they liked me regardless of whether I thought I did a decent job or not”



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Teamwork assessment – candidate tools for adaptation

- Professionalism Mini Evaluation Exercise (P-MEX)

Cruess, R., McIlroy, J., Cruess, S., Ginsburg, S. & Steinert, Y. (2006) The Professionalism Mini-Evaluation Exercise: A Preliminary Investigation. *Academic Medicine*, 81(10 suppl), s74-s78.

- 360 degree Multi-Source Feedback

Wilkinson, T. J. & Frampton, C. M. (2003) Assessing performance in final year medical students. Can a postgraduate measure be used in an undergraduate setting? *Medical Education*, 37, 233-240.

- Leadership & Team Behaviour measurement tool

Carlson, J., Min, E. & Bridges, D. (2009) The Impact of Leadership and Team Behavior on Standard of Care Delivered During Human Patient Simulation: A Pilot Study for Undergraduate Medical Students. *Teaching and Learning in Medicine*, 21(1), 24-32.



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Professionalism Mini Evaluation Exercise (P-MEX)

- Trialled at McGill University, Montreal among 3rd/ 4th year medical students in two consecutive clerkships
- A variant of Mini CEX: 24 item rating scale (exceeded/ met/ below expectations, unacceptable) of behaviours rated by senior residents and consultants during patient encounters in ward/ clinic, small group sessions, team meetings and sign out rounds.
- Exploratory factor analysis - Dr-pt relationship skills (12 items), time management (3 items), reflective skills (5 items) & interprofessional relationship skills (9 items)
- Generalizability analysis – 8 forms needed for criterion referencing



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P-MEX : Strengths & Challenges

- Feasible during 5th year clerkships/ PRINT vs opportunities for observation limited (>8 for summative) & not uniform
- Assessor training (?registrars/ residents) required
- All/ most professionalism competencies assessed – halo effect by patient communication skills vs assessing patient advocacy
- Reflective & interprofessional skills: recognizing limitations, feedback, respect, team support. ?adaptability, proactivity
- Lack of exposure to challenging contexts and lack of responsibility



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360 degree multi-source feedback

- Adaptation of Rating form of Royal Australasian College of Physicians for final year medical students (trainee interns) over an year at University of Otago, Christchurch
- 12 item global rating scale of 7 points (clearly incompetent to extremely competent), rated by senior doctors, junior doctors, nurses and self over 5 rotations
- Factor analysis – clinical skills (7 items) and humanistic skills (5 items including managing psychosocial aspects of illness, interpersonal/communication skills, respect, responsibility)
- Reliability high (Cronbach's Alpha – 0.97) & correlations between raters (even nurse:non-nurse) and correlation with traditional assessments (long cases, essays & supervisor evaluations) good



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360 MSF : Strengths & Challenges

- Feasible during PRINT & good response rate expected
- Multi-rater with views of nursing professionals
- Less opportunity for ratings by allied health professionals
- Assessor awareness (?interns/ nurses) required
- Errors in remembering back, snap-shot view
- Less opportunity to reflect on feedback – ?administer in consecutive rotations
- 2 factor structure: Halo effect e.g. shared decision making in clinical skills



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Leadership & Team behaviour Measurement tool

- Trialled at Rosalind Franklin University, Chicago among 3rd year medical student teams (2-3 members) during an emergency care simulation
- 4 items (workload management, communication, prioritizing/reassessing, vigilance) of 4 points (poor, marginal, standard, excellent) + leadership style rated by 3 raters (faculty) through observing recorded encounters
- Moderate to good inter-rater reliability (Kappa coefficient) for the 4 team behaviour items
- All 4 team behaviour items correlate well (Spearman coefficient) with blinded global rating of standard of clinical care
- Leadership style (single or flexible) not related with team behaviour or clinical care ratings



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Rating scales during simulations: Strengths & Challenges

- Opportunity to assess dynamic tasks where coordination and adaptability are essential
- Opportunity to structure the environment
- Critical elements in Action teams well described in items (? shared leadership/ decision making) – need to explore construct validity through factor structure
- Need to assess individual competence and give feedback during debriefing
- Issues of technical & human resources for simulation



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Teamwork assessment – future directions

- Professionalism Min Evaluation Exercise (P-MEX) -> T-MEX?
- 360 degree multi-source feedback -> multi-source team feedback?
- Rating scales of teamwork during simulation of challenging & dynamic situations



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