Examination of the effects of interprofessional collaboration on health care provider and team productivity in primary health care

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Background

- A global health human resources (HHR) crisis, with shortages in all health care provider (HCP) groups, is imminent.

- The requirements for HCPs should be dependent on the needs of the population and the ability to provide services to meet those needs.

Background

- HHR planning (HHRP) is about having the ***right*** number of HCPs in the ***right*** place at the ***right*** time[1]

- When undertaking needs-based HHRP it is important to consider ***how*** HCPs work together and the impact that team delivered care has on workforce productivity.

Background

- Interprofessional collaboration (IPC) has been promoted as a means to enhance the quality of care and create HHR efficiencies.

Therefore…

- It is important to establish *if* IPC occurs, the extent to which it occurs, and its effect on HCP productivity.

Research Questions

1) How do HCPs define IPC? What are HCPs' perceived level of personal and team productivity (efficiency, effectiveness) when working in a team environment?
2) To what extent do HCPs demonstrate performance of IPC competencies, as assessed using the Interprofessional Collaborator Assessment Rubric (ICAR)?
3) How did the self-IPC competency assessments change HCPs' definitions of IPC? What are HCPs' perceptions of personal and team productivity after completing the assessments?

Productivity – an operational definition

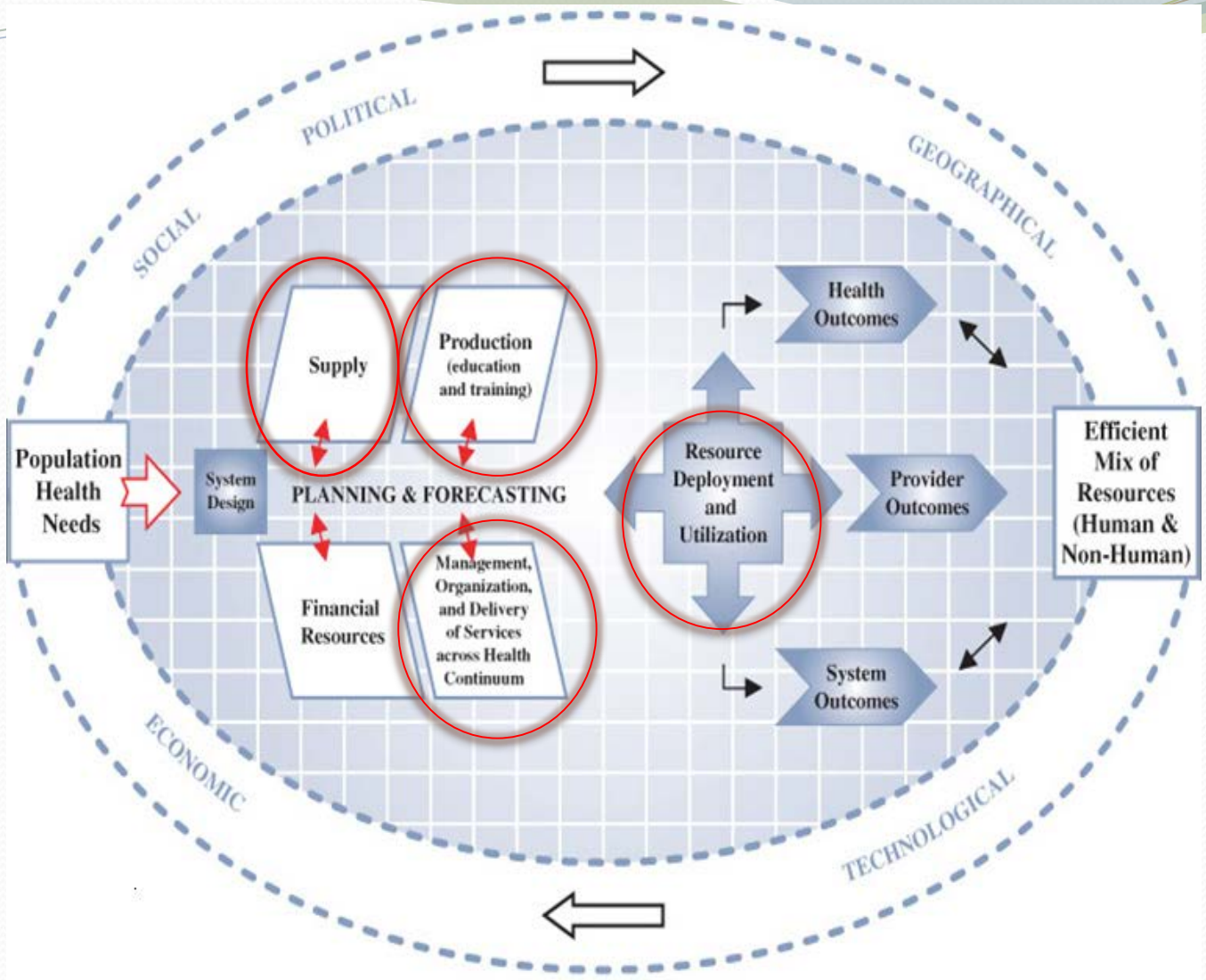
The ***sense*** of being efficient and effective when one's knowledge, skills, and attitudes are incorporated into practice

Theoretical Underpinnings

- Health System and Health Human Resources Planning Conceptual Framework[2]

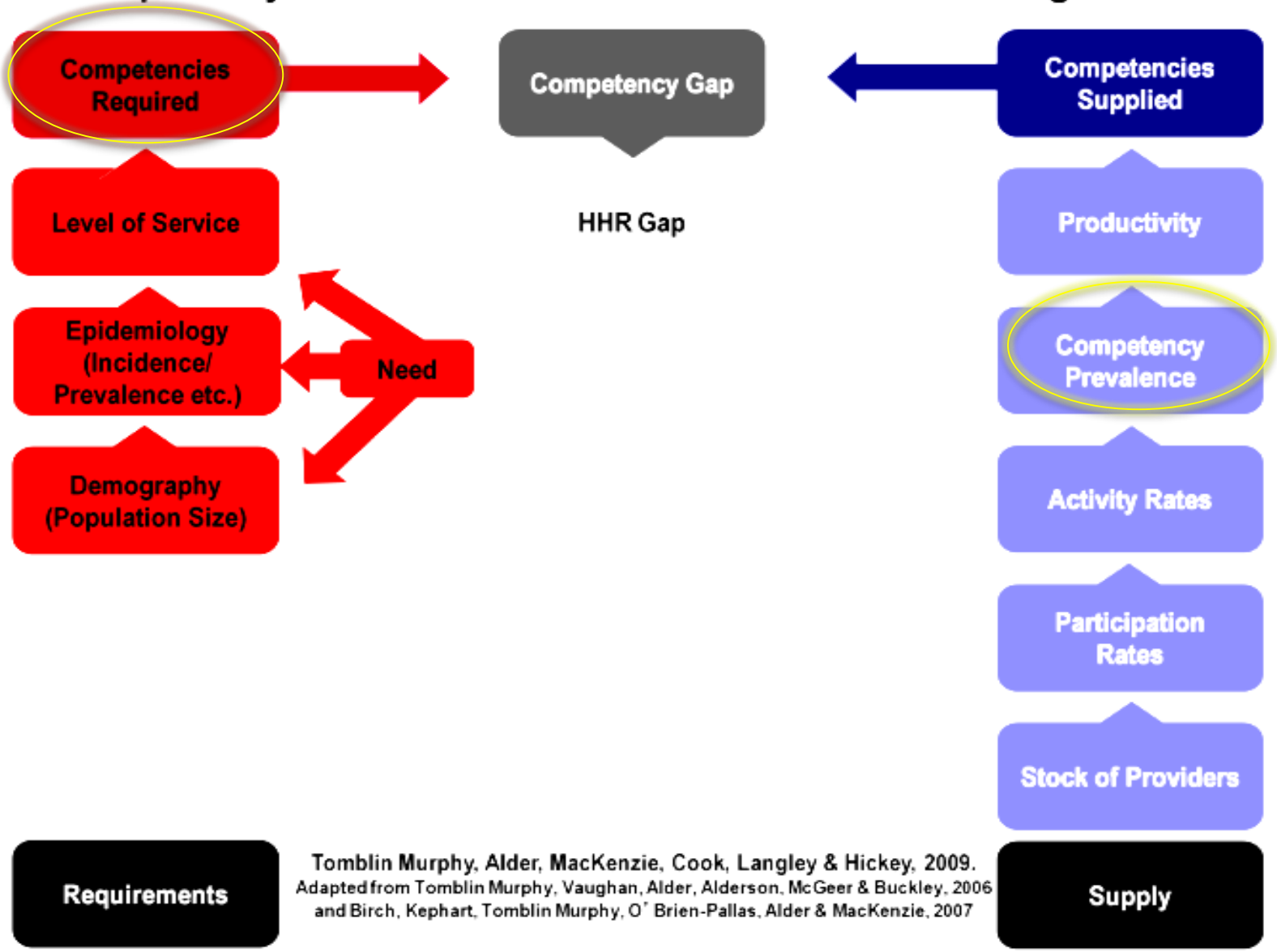
- Service-based HHRP framework (previously called the Competency-based HHRP framework)[3]

Health System and Health Human Resources Planning Conceptual Framework



Health System and Health Human Resources Planning Conceptual Framework (Tomblin Murphy & O'Brien-Pallas, 2006)

Competency-Based Health Human Resources Planning Framework



Tomblin Murphy, Alder, MacKenzie, Cook, Langley & Hickey, 2009.
Adapted from Tomblin Murphy, Vaughan, Alder, Alderson, McGeer & Buckley, 2006 and Birch, Kephart, Tomblin Murphy, O' Brien-Pallas, Alder & MacKenzie, 2007

Methodology

- Embedded mixed-methodology
- Fixed, typology-based
- Qualitative priority
- Sequential data collection and analysis

QUAL (quan)=complementarity

Design

- Setting - Community Health Centres (CHC)
- Data collection:
  - qualitative strands (RQ 1&3): face-to-face interviews
  - quantitative strand (RQ 2): ICAR self-assessments
  - ICAR tool:
    - 6 competency categories
    - 31 behavioural indicators
    - 9-point Likert scale (< 4 = not performing; ≥ 5 = performing; N/O = not observed)

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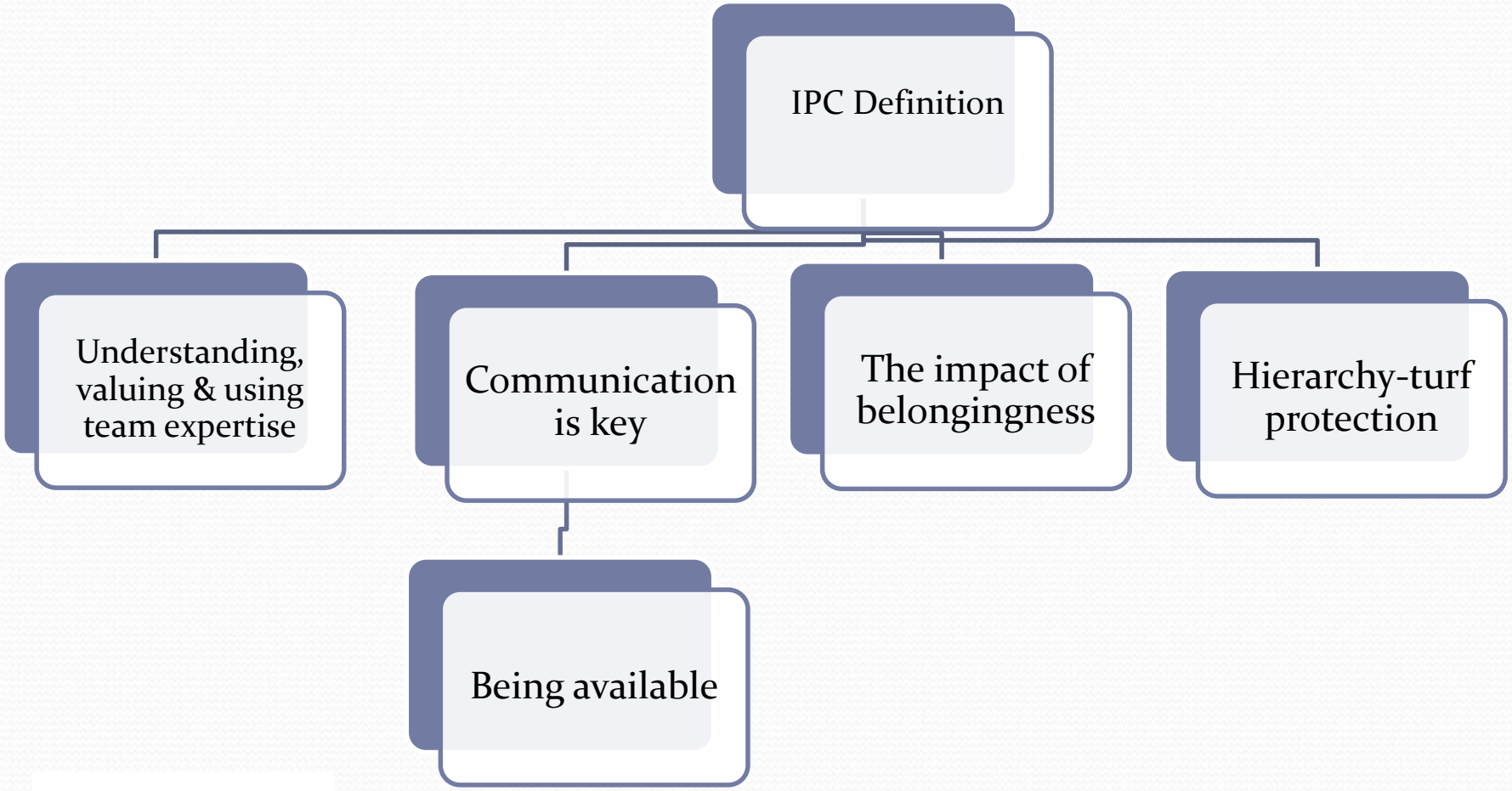
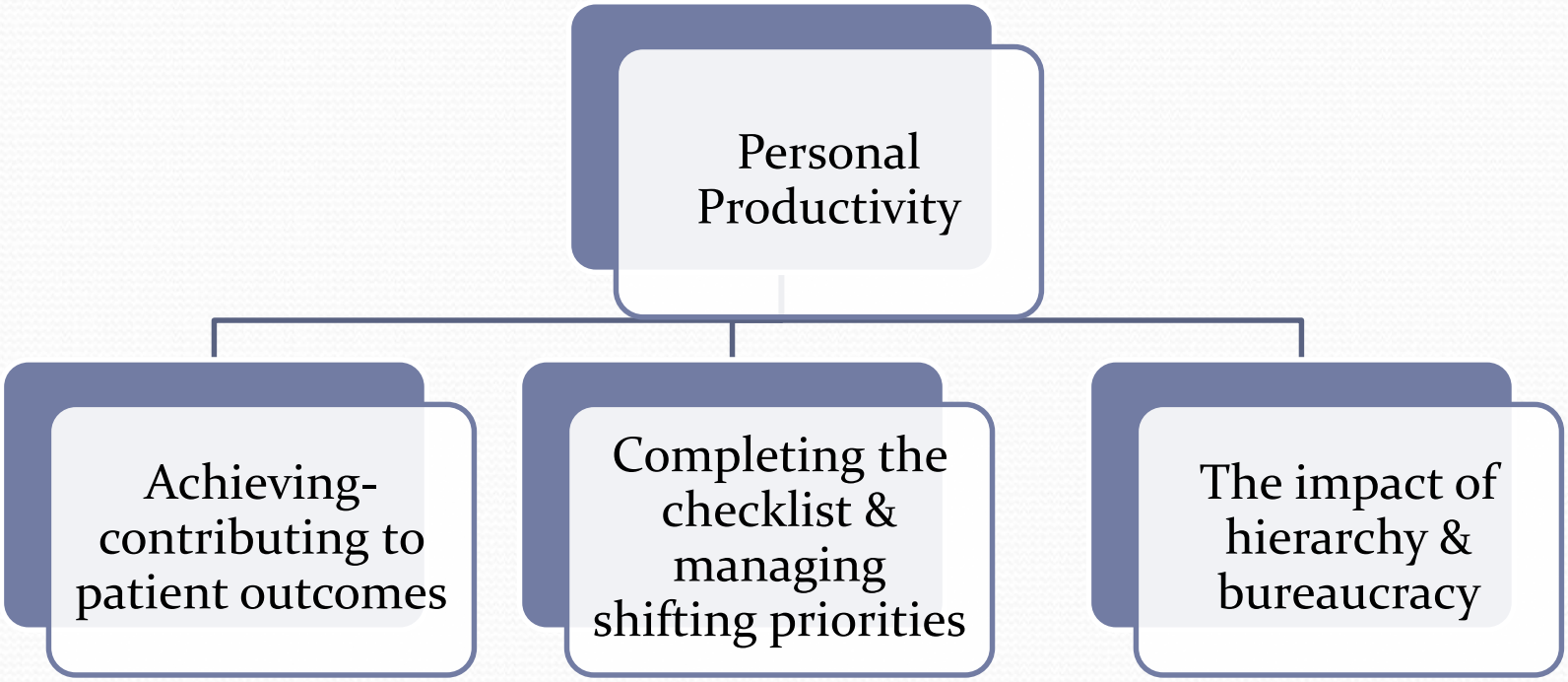
Participant Demographics (n=15)

- Professions: SW, pharmacist, RN, FPN, NP, physician, PT, and 'other'
- Gender: 2 males; 13 females
- Age: 31 to 64 years
- Employment: 73% FTE; 27% PTE/casual
- Work experience: 53% $\geq$ 21 years
- Years with team: 53% >6 years

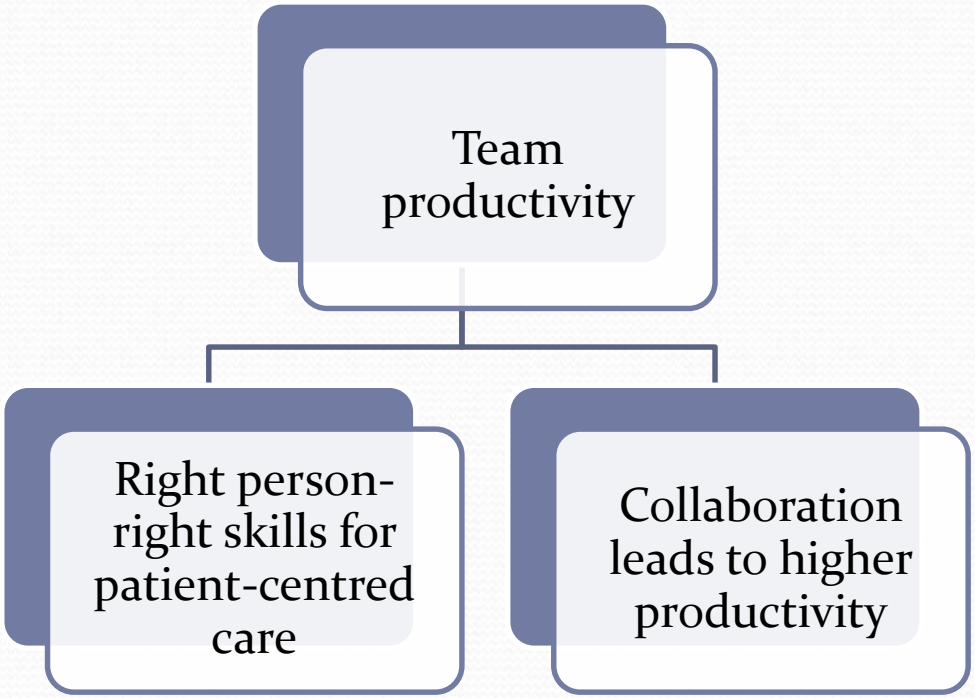
RQ1: How do HCPs define IPC?



RQ1: What are HCPs perceived levels of personal productivity?



RQ1: What are HCPs perceived levels of team productivity?



Interprofessional Collaborator Assessment Rubric

Instructions: For each of the statements below, circle the number which corresponds to your performance or the performance of another health care provider on your team.

1	2	3	4	5	6	7	8	9	N/O
Well Below Expected		Below Expected		Expected	Above Expected		Well Above Expected		Not Observable

Communication: Ability to communicate effectively in a respectful and responsive manner with others ("others" includes team members, including the patient/client, and health providers outside the team).

1. Communicates and expresses ideas in an assertive and respectful manner.
2. Uses communication strategies (e.g. oral, written, information technology) in an effective manner with others.

I/the health care provider...										N/O
Communicates with others in a confident, assertive, and respectful manner.	1	2	3	4	5	6	7	8	9	☐
Communicates opinion and pertinent views on patient care with others.	1	2	3	4	5	6	7	8	9	☐
Responds or replies to requests in a timely manner.	1	2	3	4	5	6	7	8	9	☐
Uses communication strategies (verbal & non-verbal) appropriately in a variety of situations.	1	2	3	4	5	6	7	8	9	☐
Communicates in a logical and structured manner.	1	2	3	4	5	6	7	8	9	☐
Explains discipline-specific terminology/jargon.	1	2	3	4	5	6	7	8	9	☐
Uses strategies that are appropriate for communicating with individuals with impairments.	1	2	3	4	5	6	7	8	9	☐

Collaboration: Ability to establish/maintain collaborative working relationships with other providers, patients/clients and families.

1. Establishes collaborative relationships with others in planning and providing patient/client care.
2. Promotes integration of information from others in planning and providing care for patients/clients.
3. Upon approval of the patient/client or designated decision-maker, ensures that appropriate information is shared with others.

I/the health care provider...										N/O
Establishes collaborative relationships with others.	1	2	3	4	5	6	7	8	9	☐
Integrates information and perspectives from others in planning and providing patient/client care.	1	2	3	4	5	6	7	8	9	☐
Shares information with other providers that is useful for the delivery of patient/client care.	1	2	3	4	5	6	7	8	9	☐
Seeks approval of the patient/client or designated decision-maker when information is shared.	1	2	3	4	5	6	7	8	9	☐

RQ2: To what extent do HCPs demonstrate performance of IPC competencies?

- Mean scores for all competency categories ranged from 6.38 to 7.05
- Median score of 7.0 for all survey responses
- Participants perceived that they were demonstrating the knowledge and skills attributed to IPC at the *'above expected'* level.

- 99% of Behavioural Indicators (BIs) were scored ≥ 5, indicating that participants believed they were collaborating at the '*expected*' level
- 1% of BIs were scored < 5:
  - 4 scored at 4 (*'Below Expected'*)
  - 1 scored at 2 (*'Well Below Expected'*)

- No participant averaged a score < 5
  - Lowest overall average score = 5.32
  - Highest average score = 8.1

Cronbach's alpha & biserial correlations of the competency categories

- Cronbach's alpha for the entire ICAR survey = 0.980
- Cronbach's alpha ranged from 0.86 (*roles and responsibilities)* to 0.97 (*patient/family-centred approach)*
- Pointwise-biserial correlations ranged from 0.83 (*conflict management)* to 0.96 (*communication*)

Pointwise-biserial correlations of the Behavioural Indicators

- pointwise-biserial correlations indicate a strong positive relationship of BIs with competency category scores (0.704 to 0.989)

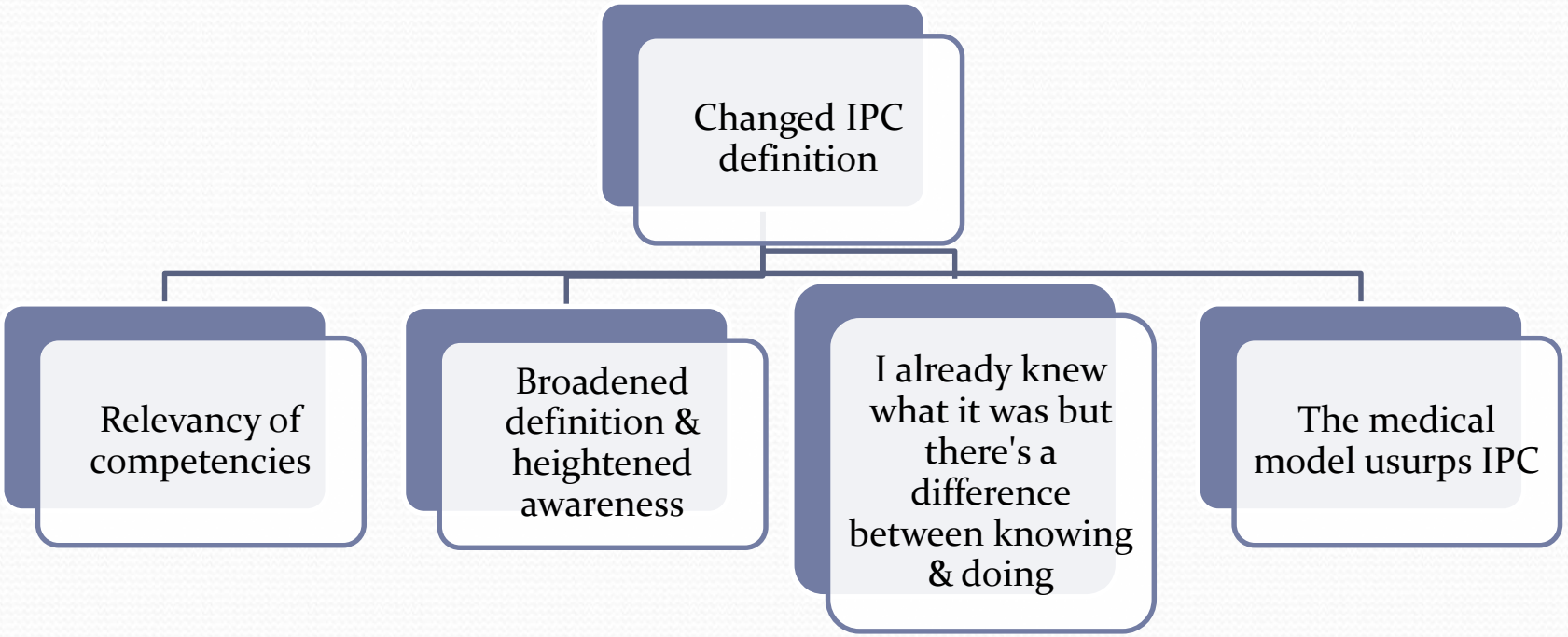
- pointwise-biserial correlations of BIs with the overall ICAR survey scores reveal only five BIs under four competency categories that have scores less than 0.7

Sample size calculations with *fpc* factors

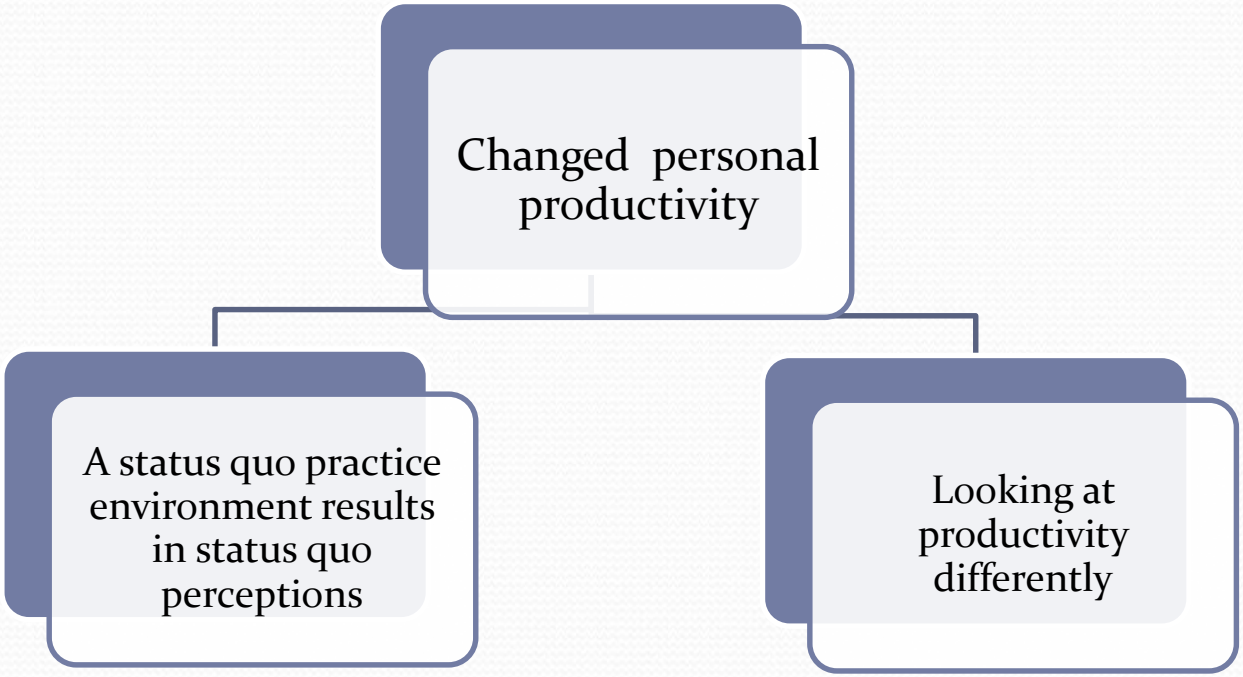
Assumed Difference	Confidence Level	No *fpc*[a]	*fpc* for each group N = 200	*fpc* for each group N = 100	*fpc* for each group N = 50
10%	95%	389	133	80	45
10%	90%	307	122	76	44
10%	80%	224	106	70	42
20%	95%	95	65	49	33
20%	90%	75	55	44	31
20%	80%	55	43	36	27
30%	95%	40	34	29	23
30%	90%	32	28	25	20
30%	80%	23	21	19	16

[a]fpc = finite population correction factor

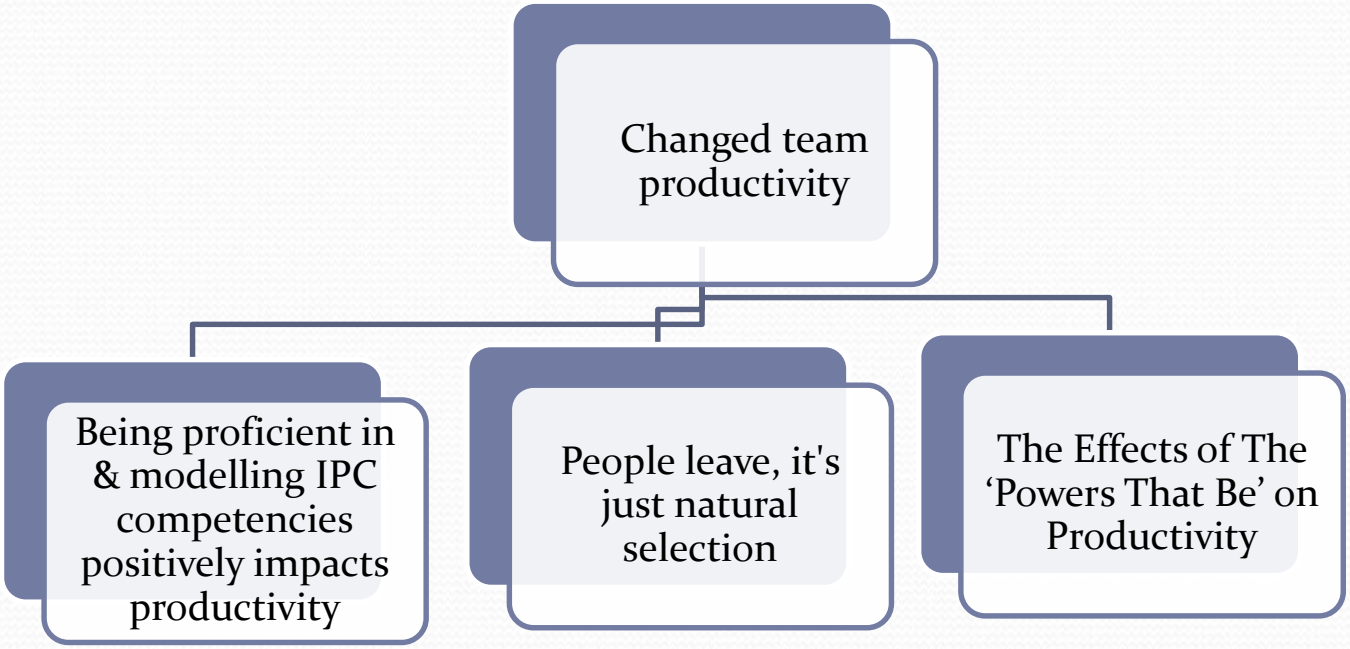
RQ3: How did the competency assessments change HCPs definitions of IPC?



RQ3: What are HCPs perceptions of personal productivity after completing the ICAR assessments?



RQ3: What are HCPs perceptions of team productivity after completing the ICAR assessments?



Integration

- HCPs had no difficulty identifying the essential components of IPC…
- From a self-assessed perspective, there appears to be no gap between the service requirements (IPC care) and the services supplied (working collaboratively)…
- Yet participants identified many barriers that prevented them from IPC practice and negatively impacted their productivity.

Implications

Practice

- develop partnerships between academia & practice environment
- change in organizational philosophy/culture
- role-modelling IPC competencies
- foster & support innovation for new models of care

Implications

Policy

- service-driven needs-based HHRP in consultation with HCPs
- challenge funding/remuneration structures that prevent IPC
- accreditation agencies adopt standards that includes IPE and IPC
- develop accountability agreements & processes that are linked to performance.

Implications

Education

- pre- & post-licensure IPE required
- IP facilitator development for faculty
- equitable, adequate & ongoing funding that supports IPE

Implications

Research

- understand ‘need’ from patient perspective
- explore impact of IPC on productivity in different scenarios/practice settings
- further research to validate the accuracy of the IPC competencies

Final Thoughts…

The significance of considering the competencies that are owned by the workforce and applied to their job cannot be overstated – it is of utmost importance that planners match health care need (requirements) with available HCP competencies (supply) if we are to get it right.


Thank You

References

- [1] Birch, S., Kephart, G., Tomblin Murphy, G., O'Brien-Pallas, L., Alder, R., & MacKenzie, A. (2007). Human resources planning and the production of health: A needs-based analytical framework. *Canadian Public Policy, 33* (Suppl), S1-16.

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- [3] Tomblin Murphy, G., MacKenzie, A., Alder, R., Langley, J., Hickey, M. & Cook, A. (2013). Pilot-testing an applied competency-based approach to health human resources planning. *Health Policy and Planning, 28* (7), 739-749.

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- [5]Canadian Institute for Health Information. (2011). *Canada's health care providers, 2000-2009 – A reference guide.* Retrieved November 13, 2015 from https://secure.cihi.ca/free_products/CanadasHealthCareProviders2000to2009AReferenceGuide_EN.pdf