

Research Objectives for Psychiatry Residents

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Updated annually by Dr. Kamini Vasudev
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Preamble:

The primary purpose of residency training in psychiatry is to provide individuals with the knowledge and skills required in order to provide excellent clinical care. This requires an ability to continuously review and evaluate information regarding new techniques of treatment and assessment. It is, therefore, important that all residents develop core competencies in understanding the basic principles of research design and critical appraisal of research literature. In addition, some residents will be interested in pursuing research as an integral part of their career. It is important that the latter individuals be provided with opportunities to develop greater proficiencies in various research skills.

The specific goals and objectives for the research component of the residency program are, therefore, divided into “core competencies” which are relevant to all residents and “proficiencies” which are relevant to those residents with more specific training objectives in research. It is anticipated that the former will provide the necessary background for those intending to engage entirely in clinical practice, whereas the latter will be of particular interest to residents intending to undertake a career which includes a stronger research component such as an academic career, industry research, etc.

General objectives:

At the end of their training, all residents in psychiatry are expected to have acquired knowledge and skills to appraise research reports for overall soundness of design, appropriateness of conclusions, likely generalizability of findings, and applicability to practice of psychiatry.

In addition, for those residents with a particular interest in the development of proficiencies in research, opportunities should have been provided for the acquisition of knowledge and skills relevant to carrying out a research project.

Specific objectives:

Although research is of potential relevance to all the roles of a physician as outlined in the training objectives in psychiatry from the Royal College of Physicians and Surgeons of Canada, we will particularly emphasize the roles of medical expert/decision maker, health advocate and scholar in describing the specific objectives of the research component of our residency program.

A. Medical expert**1. Knowledge**

Core competencies: Residents will have basic knowledge and understanding of the following with reference to clinical implications of research in mental health:

The difference between basic types of research design such as correlational (including cross-sectional and prospective) and experimental (including clinical trials) designs and the implications of these differences for the types of inferences that can be made regarding etiology, treatment effectiveness, etc.

The concept of the internal validity of a study and its importance for understanding potential confounds in research design and methods of reducing or dealing with confounds

The concept of the external validity of a study and its implications for the generalization of research findings to different areas of clinical care

Levels and types of clinical trials and the purpose and rationale of each

The potential applicability of some research methods to clinical program evaluation

The concept of treatment efficacy and treatment effectiveness and the implications of a given clinical trial or other outcome study for evaluation of efficacy and effectiveness.

The concept of additive effects and/or interaction between variables and the implications of these concepts for investigating joint effects in etiology and treatment – for examples joint effects of biological and psychosocial risk factors or treatments.

2. Skills

Core competencies:

Residents will be able to critically appraise individual research reports and provide an appropriate assessment of the likely implications of a given study for understanding etiology of a psychiatric disorder or for evaluating the efficacy and effectiveness of treatment outcome studies

Residents will be able to carry out literature searches using computerized data bases and be able to supplement computer searches and appraise, summarize and integrate the results of the literature detected through such searches.

B. Health advocate:

1. Knowledge:

Core competencies: Residents will have basic knowledge and understanding of the following with reference to implications of research in mental health for population health and prevention of mental health problems:

Basic concepts of epidemiological research including incidence and prevalence rates, sampling methods, sensitivity and specificity of predictors, etc. and their implications for understanding distribution of mental illness and assessment of risk.

Levels of prevention such as primary prevention, indicated prevention, secondary prevention, etc. and examples of their applicability to prevention of mental illness and promotion of mental health

The use of quasi-experimental designs in evaluation of community interventions related to mental illness.

Methods and challenges in assessing quality of life for individuals with mental illness.

C. Scholar:

1. Knowledge:

Core competencies: Residents will have basic knowledge and understanding of the following with reference to carrying out research:

Ethical standards with respect to informed consent, confidentiality of information, conflict of interest, etc.

Basic elements and levels of measurement and evaluation of measures for reliability and validity

The logic of descriptive and inferential statistical methods, type I and type II error, p values, sample size and power calculations, and an overview of some basic parametric and non-parametric methods such as chi-square, correlations, t-tests, analysis of variance, and regression

The strengths and limitations of various basic research designs such as correlational and experimental/intervention studies.

Basic concepts related to evaluation of indicators related to illness costs and economic impact of interventions to treat and/or prevent mental disorders.

Proficiencies: Residents with a particular interest in and enthusiasm for pursuing independent research as part of their career should have the opportunity to develop knowledge of some or all of the following:

More advanced statistical methods such as multiple and logistic regression, analysis of covariance, data reduction techniques (eg. factor analysis, cluster analysis), survival analysis and multivariate analysis.

Methods of genetic research

Brain imaging methods

Measures commonly used for the assessment of symptoms in psychiatric disorders

Methods of psychometric instrument development

Developing and maintaining databases for clinical and research purposes

Elements of writing research proposals, reports and grant applications

2. Skills:

Core competencies:

The resident should be able to review and synthesize a body of research literature concerning a clinical issue or problem in psychiatry formulating appropriate conclusions about what is justified by the relevant literature, what are the major shortcomings in the existent research, what would be priorities for future research and implications of the research literature for clinical practice and/or our understanding of an issue in psychopathology.

Proficiencies:

- carry out a research project or take responsibility for a component of a larger ongoing research project under the supervision of an experienced researcher.

Write a consent form for human subjects that will be clear to the subjects or their relatives and express simply and frankly the purpose for which co-operation is being solicited.

- analyze data using appropriate methods and common computer programs for statistical analysis
- formulate appropriate conclusions on the basis of the data.

competently use one or more advanced research methods, for example those related to psychophysiology, imaging, psychometrics, genetics, formal modeling, etc.

write a research proposal

- write one or more papers for publication in a journal and/or oral presentation

apply for further training during a research fellowship

How will the learning experience take place?

CORE COMPETENCIES:

Basic aspects of the knowledge components of core competencies should be acquired through a variety of teaching and training activities. These include didactic teaching, attending monthly Research Update Group and Evidence based Journal club.

The skills component of the core competencies should be acquired through completion of a research project. All the residents enrolled in the program (2011 onwards) are required to complete a project during their residency training under supervision of a faculty member.

Didactic teaching: Topics covered are as follows:

PGY1 : Introduction to Research in Psychiatry

PGY2 : Principles of Research Design, Statistics, Writing a Research Protocol and REB application, Continuous Quality Improvement, Critical appraisal, Overview of Psychometrics

PGY3 : Biometric Methods, Qualitative Research Methods

Research Update group

PGY 1 to 4 are expected to attend this Group, which takes place once a month (2nd Thursday, 12 to 1 pm) at B-8 131, VH. This group provides a forum for residents to present research ideas and updates for discussion and to receive feedback. Active researchers within the Department are also invited to present their work. The Group provides residents with an opportunity to learn about research going on within the Department and link up with research mentors. The group facilitator makes every effort to keep the atmosphere informal, supportive and intellectually stimulating.

Evidence based Journal club

This takes place once a month (4th Thursday, 4.15 to 5.30pm) at B-8, 131, VH. It is facilitated by a resident and supervised by a faculty member. Attendance at these seminars is mandatory for PGY 2, 3 and 4 residents. Each resident is expected to have presented at least two papers during the three years. Using active clinical cases the resident facilitator converts clinical management knowledge gaps into an answerable question, searches the literature to identify the best available evidence, critically appraises the evidence, and applies the evidence to the case as appropriate. The resident facilitator presents all of the above as a power point presentation. The sessions are interactive and all the residents are expected to have read the paper beforehand. The presenter is evaluated by self, resident colleagues, and faculty facilitator participating in the session using the Assessment form. The evaluation covers the performance in the Evidence Based Practice process, as well as effectiveness as a facilitator and practitioner.

Completion of a research project during residency

Residents (enrolled 2011 onwards) are mandated to complete a research project under supervision of a faculty member.

The minimal requirement is to complete a quality improvement project. The selected project must require review by the Research Ethics Board. Alternatively, a systematic review/meta-analysis may also be considered. The residents must start their project at the latest by mid PGY2 year and finish at the latest by mid PGY4 year. It is expected that the project will be conducted over a period of 1 to 3 years and can not be conducted exclusively in a research selective or elective block. The residents are required to submit a report at completion of their project and present the findings of their project at the annual spring departmental research day (June) as either a poster or podium presentation.

Residents can become familiar with research opportunities available in the department in several ways:

- Look up the Research section and Annual Report at the Department of Psychiatry website, which provides details of ongoing research in various divisions of the department <http://www.schulich.uwo.ca/psychiatry/research/index.html>
- Watch out for the list of research/quality improvement projects available within the department; this list is e-mailed to the residents annually.
- Attend the Research Update Group, which is held once a month
- Consult with the Scholarly Portfolio lead and/or Director of Research to discuss appropriate mentors for any specific areas of interest that a resident may have.

Research Supervisor role

- ▶ The Department of Psychiatry provides MBR points to faculty members who supervise residents for a research/quality assurance project.
- ▶ The supervisors are expected to supervise and evaluate the resident on the basis of the observations made during the conduct of project; the written report and the presentation at the research day.
- ▶ The supervisors will provide feedback to their trainees every six months (June and Dec) until the end of the project when the final evaluation will be completed.
- ▶ The supervisors will ensure that the research project is progressing as per schedule and will address any challenges faced by the resident in timely completion of the project.
- ▶ If the supervisor has any concerns regarding the progress of the trainee, he/she is expected to bring this to the attention of the PGE Program Director, at the earliest possible time.

Lawson Mandatory Training Requirements for Clinical Research

All residents are mandated to complete training requirements, developed by Lawson health Research Institute.

As part of the Quality Management System, Lawson has developed a Training Requirement Toolkit. These requirements are designed to provide direction for education and training in accordance with Lawson's policies and Standard Operating Procedures (SOPs).

Contact the Quality Assurance and Education Team at QAEP@lawsonresearch.com to request your copy of the Training Requirement Toolkit.

Support/Resources available for residents

- ▶ ‘Research Update Group’ sessions are dedicated half and half to residents project update and faculty presentations
- ▶ Half a day per month (3rd Thursday afternoon) in the PGY3 year is available as protected time for research
- ▶ Funding for aspects of residents’ research projects may be available through applications to the Department of Psychiatry seed funding competitions.
- ▶ Residents have access to an academic fund of \$150 per year to support their scholarly activities, which can be used yearly or can be accumulated over the 5 years to be used as and when needed. Residents are regularly made aware by e-mail of other opportunities for academic awards, announced by Schulich School of Medicine and Dentistry, Canadian Psychiatric Association, Royal College of Physicians and Surgeons of Canada and other academic organizations in North America.
- ▶ Dr. Marnin Heisel, Director of Research is available to provide consultations re research methodology/statistics or mentorship
- ▶ The residents’ research representative works collaboratively with the Residency Program Committee to advocate for research related needs of the residents

Record of scholarly activities

Residents will be expected to complete a ‘Resident Research report form’ for the semi-annual review with the Program director. In this form they will summarize the scholarly activities conducted e.g. oral or poster presentation at a conference, abstract submission, and publication of papers as well as progress of their ongoing research project.

Evaluation of core competencies:

Attendance is mandatory at all of the above teaching and training activities and instructors are encouraged to provide residents with pre-post test self-assessment measures related to the material being taught.

The Residents’ project will be evaluated by the supervisor on the basis of the observations made during the conduct of project; the written report and the presentation at the research day (see assessment tool).

The supervisors will be expected to provide feedback to their trainee every six months until the end of the project when the final evaluation will be completed. If the supervisor has any concerns regarding the progress of the trainee, he/she is expected to bring this to the attention of the PGE Program Director, at the earliest possible time.

PROFICIENCIES:

Those residents who are keen on developing research proficiencies have the option of taking a research selective/elective.

Research selective/elective are available in the PGY1 year (minimum 1 block/4 weeks, maximum 2 blocks or 8 weeks) and during PGY4, 5 (**elective**: minimum 2 blocks/8 weeks,

maximum 6 blocks or 24 weeks; **selective** : minimum 3 blocks/12 weeks, maximum 6 blocks or 24 weeks). Selectives/electives may be used to gain experience in a specific research area, which may be an extension of the project the resident has already been involved in or a new area of interest. The selective or elective cannot be used to complete data analysis/writing up of a paper for publication for the mandatory research project.

If a resident is interested in a strong longitudinal research education/career parallel to the 5 year residency program, individual exceptions/arrangements are possible with the program director's and training committee's approval.

If a unique research opportunity requires a one year time allocation, an approval by the program director and the training committee is necessary.

When arranging a research selective/elective, the resident will be expected to submit a proposal (at least 3 months in advance) with a) title of the project, b) name of the supervisor (with supervisor's credentials e.g. publication in last 5 years), c) learning objectives for the selective/elective which should include the objective outcomes (eg. publication) as well as the knowledge and skills to be acquired during the period d) time frame and milestones for completion of project and e) details and rationale of the work to be carried out.

The acceptability and duration of a research selective/elective will depend upon approval of the individual resident's proposal by the supervisor.

The supervisor should help the resident establish goals with reference to the establishment of research proficiencies and provide ongoing feedback to the resident and the residency program director regarding the resident's progress toward these goals.

Funding for aspects of residents' research projects may also be available through applications to the Department of Psychiatry seed funding competitions.

It is recognized that the primary goal of residency training in psychiatry is to become an excellent clinician rather than research training. It is anticipated, therefore, that most training in research is likely to be undertaken after completion of the residency program. For those wishing to go on to complete an application for a research fellowship, the Director of Research will assist the resident to find an appropriate "mentor" who has some experience in filling out such applications and who may be able to meet with the resident on a regular basis for the last year of training in order to complete such an application. Data from a preliminary research may form the basis of such an application.

In some cases, applicants to the program may wish to complete a master's degree or Ph.D. during the course of their residency and/or subsequent to it. At the discretion of the Postgraduate Training Director, such an individual may negotiate with another department in order to achieve this goal.

Evaluation of proficiencies:

The evaluation of research proficiencies will primarily be the responsibility of the resident's supervisor in collaboration with any other research faculty with whom the resident works. As part of the process of ongoing feedback described above, the supervisor will provide a letter to the Director of the Residency at least once a year outlining the resident's progress in meeting his or her proficiency objectives. In addition, the resident who has undertaken to develop research proficiencies with a supervisor will produce a manuscript of publishable quality and or present a paper on their research at the Department of Psychiatry Academic Day. This manuscript or presentation will be evaluated on a pass-fail basis by a faculty member appointed by the Director of the Residency Program and the Director of Research with the evaluator giving detailed feedback.

RESEARCH PROJECT EVALUATION (Assessment tool)

Is this evaluation:

- Mid-project evaluation
- Final project evaluation

Date:

Name of person completing evaluation:

Location:

Other Supervisors:

Principal Training Objectives/Core Competencies

Objective 1:

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Please rate Objective 1	No	Yes

Objective 2:

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Please rate Objective 2	No	Yes

Objective 3:

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Please rate Objective 3	No	Yes

Objective 4:

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Please rate Objective 4	No	Yes

Objective 5:

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Please rate Objective 5	No	Yes

CanMEDS role: Medical Expert

	Not Relevant or Unable to Assess	Does Not Meet Expectations	Borderline	Meets Expectations
1. Critically appraises relevant literature; successfully integrates information from a variety of sources.				
2. Helps others learn through guidance, teaching and constructive feedback.				
3. Contributes to the development of new knowledge.				
4. Is knowledgeable about and applies good principles of research design (control, reliability of measurements, minimization of bias, etc).				
5. Knows how to locate relevant literature through use of appropriate computerized research databases.				
6. Has developed an appropriate breadth and level of knowledge of the relevant research literature.				
7. Readily recognizes threats to validity of a research design.				
8. Has developed an appropriate level of technical skills relevant to the area of research such as computer				

skills, data entry, animal manipulations, knowledge of imaging technology, psychometrics, measurement of behavior, epidemiological methods, etc.				
9. Has developed an appropriate level of skills in statistical analysis of data.				
10. Able to draw appropriate conclusions from and recognize the limitations of any research data.				
11. Able to appropriately link research findings to clinical issues.				
12. Has developed an appropriate level of skills in writing papers and delivering presentations concerning research.				
13. Has completed relevant draft papers, presentations in a timely manner.				
14. Shows real enthusiasm for research.				

CanMEDS role: Collaborator

	Not Relevant or Unable to Assess	Does Not Meet Expectations	Borderline	Meets Expectations
1. Develops and maintains networks and working relationships with supervisors, colleagues and peers in the research community.				
2. Recognizes and addresses interpersonal differences, misunderstandings and limitations that may contribute to interprofessional tension.				
3. Receives and gives feedback appropriately and demonstrates appropriate behavior to research participants, research				

staff and other investigators and colleagues.				
4. Contributes to research team activities.				

CanMEDS role: Communicator

	Not Relevant or Unable to Assess	Does Not Meet Expectations	Borderline	Meets Expectations
1. Listens effectively.				
2. Able to summarize, document, report and reflect on results of a study.				
3. Able to establish positive relationships characterized by understanding, trust, respect, honesty and empathy with research participants and colleagues.				
4. Preparation of documents such as protocols, ethics and grant submissions and papers for publication is complete, well-written and timely.				
5. Oral presentations such as seminars and conference presentations are organized and effective.				

CanMEDS role: Health Advocate

	Not Relevant or Unable to Assess	Does Not Meet Expectations	Borderline	Meets Expectations
1. Understands relevant health and safety issues and demonstrates responsible work practices.				
2. Can review and synthesize a body of research literature concerning a clinical issue or problem in psychiatry.				
3. Formulates appropriate conclusions from the relevant literature, including the major				

shortcomings in the existent research, priorities for future research and implications of the research literature for clinical practice.				
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CanMEDS role: Manager

	Not Relevant or Unable to Assess	Does Not Meet Expectations	Borderline	Meets Expectations
1. Makes effective use of information technology relevant to research.				
2. Exercises sound judgment in using resources in a cost-effective manner.				
3. Evaluates the effective use of resources.				
4. Able to set realistic priorities and use time effectively to optimize professional performance.				
5. Applies appropriate practice management principles.				
6. Coordinates the efforts of the health-care team.				

CanMEDS role: Professional

	Not Relevant or Unable to Assess	Does Not Meet Expectations	Borderline	Meets Expectations
1. Demonstrates integrity, honesty, compassion and respect for diversity.				
2. Fulfills medical, legal and professional obligations of a psychiatrist-researcher.				
3. Collaborative and respectful of patients' relationships; demonstrates gender and cultural awareness.				
4. Demonstrates responsibility, dependability, self-direction and punctuality.				

CanMEDS role: Scholar

	Not Relevant or Unable to Assess	Does Not Meet Expectations	Borderline	Meets Expectations
1. Commitment to the need for lifelong learning; develops and implements and ongoing and effective personal learning strategy.				
2. Acceptance and constructive use of supervision and feedback.				
3. Awareness of personal limitations and appropriate action when confronted with these limitations.				
4. Has awareness of issues relating to the rights of other researchers, of research subjects, and of others who may be affected by the research (e.g. confidentiality, ethical issues, attribution, copyright, malpractice, etc.).				
5. Appreciates standards of good research practice.				
6. Able to identify a career path as a research/investigator.				
7. Demonstrates self-discipline, motivation, and thoroughness.				
8. Demonstrates a willingness and ability to learn and acquire knowledge.				

	Not Relevant or Unable to Assess	Does Not Meet Expectations	Borderline	Meets Expectations
OVERALL Assessment of Resident's Performance				

Strengths:

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Areas for development:

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Other Suggestions/Comments:

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This evaluation was discussed with the resident on:

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Signing this form verifies that the resident has read this evaluation, but does not necessarily indicate agreement with the evaluator's score and/or comments.

Signature of Resident

Signature of Supervisor

(for the Evaluatee to answer...)

	No	Yes
Did you have an opportunity to discuss your performance with your preceptor/supervisor?		

Comments of Resident

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