Published in final edited form as:

J Interprof Educ Pract. 2017 December ; 9: 99–103. doi:10.1016/j.xjep.2017.09.002.

Project SARET: An interprofessional education (IPE) lens examines substance use disorders research education for health professional students

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Abstract

The NIDA funded Substance Abuse Education, Research and Training (SARET) Program addresses the compelling need for health professionals prepared to engage in substance use disorders (SUD) research. The goal of this interprofessional project, structured by an Executive Committee of co-investigators from the disciplines of medicine, nursing, social work and dentistry, is to increase the skills of students from each discipline for interprofessional research collaboration and early career-development opportunities in SUD research. The development of web-based modules, interprofessional seminars and a model mentorship program were designed as well, for dissemination and evaluation by other health professional schools. The educational format is 6 interactive web-based learning modules, providing an overview of core content on Substance Use Disorders (SUD), summer or year-long mentored research experiences with NIH-funded researchers and small interprofessional seminars and site visits. Assessment consists of self-

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There are no conflicts of interest. Documents can be forwarded on request.

Resources: SARET modules are available at no cost on the website <http://www.compass.med.nyu.edu/category/saret>. Non-NYU students can access and complete these, including pre- and post-tests.

reported annual student learning outcomes and external editorial and advisory board project and curricular materials review. These reviews encourages the updating of materials and provide flexibility for participating “champions” at other schools who use the modules. Quantitative and qualitative outcomes of student research activities and data on dissemination of modules support the fit between project content and interprofessional teaching modalities. The learning modules are available without charge to individuals, students, faculty or health professional programs from the project’s website.

Format

The SARET program, funded in 2007 as an R25 interprofessional initiative by the National Institute of Drug Abuse, is comprised of 1) interactive learning modules on basic concepts and methodologies used in research on SUDs 2) summer or year-long individual mentored research experiences, and 3) inter-professional faculty and student seminars and field trips. A fourth component 4) partnering with other professional schools for module dissemination, was added at the 5-year mark. Stipends support all summer and year-long mentored laboratory/field research experiences for students.

Target Audience

To realize SARET’s overall goal, increased skills of graduate students in the health professions for early career-development opportunities in SUD research, an executive committee (EC) member markets the project, ensures that program information is disseminated in their respective schools and recruits and advises students on applications. The 7 person executive committee is composed of the Project Director (MD), Curriculum Director (MD), a project manager (Public Health) and one co-investigator each from Dentistry, Nursing and Social Work. Twelve graduate students, representing the four participating disciplines, are selected for an 8-week summer experience. Pairs of faculty (each from a different discipline) with the project manager, conduct 20-minute, interviews with each applicant, ensuring that the selection process is interprofessional. Applicants are rated independently on the same traits, discussed by interviewers to reach consensus and then final candidates are presented to the full EC. Participants are selected based on the “core competencies” deemed essential for engaging in an interprofessional versus a discipline-specific project: graduate-level study, graduate research courses, and/or participation in research. Additional criteria are: commitment to SUD education and research; demonstrated interest in program goals; demonstrated initiative, maturity, and creativity; likelihood of project completion; and high-quality written and oral communication. The EC seeks a group of participants balanced by discipline, but the criterion of “potential for successful completion” supersedes membership in any discipline. Each EC member serves as an “anchor” for students of that discipline during and post project, based on students continuing interest.

Objectives

SARET’s overarching goal is to increase the skills and interest of health professional graduate students from medicine, nursing, social work and dentistry in early career-

development opportunities in substance-abuse research. Students report achieving the following outcomes: a) increased interest in SUD-related research, b) increased SUD knowledge c) increased appreciation of other disciplines d) increased comfort in interprofessional communication.

Project Activities

Launching the SARET program The 2010 publication of *Health Professionals for the 21st Century*,¹ describes a paradigm that enables health professionals to break out of educational silos and hierarchies, develop programs to for practice, and increase the interdependence of professionals.¹ Ideally, interprofessional educational (IPE) themes are incorporated throughout the curriculum and are integrated vertically and horizontally to encompass both “meso” (faculty-level) and macro (system-wide) changes.² The IPE model retains tenets to solidify professional identity but also to provide opportunities for IPE and collaborative work.³

SARET was designed by an interprofessional executive committee (EC) from four participating schools, the members of which endorsed a definition of IPE that “allows for differing philosophical perspectives that give rise to processes for developing and using discipline specific knowledge”,⁴ and emphasizes both collaborative and discipline-specific benefits. The EC’s function requires members to embrace this definition and IPE core competencies and the EC “team” was built on shared interests in SUD research, education, professional, and ethical values. Mutual understanding and respect, and candid, effective, open communication were evident,² and the group comfortably achieved the project’s initial curricular aims. Social work joined as a fourth discipline in the second 5-year grant cycle, broadening the scope of education and research. Members of the EC, noting their personal and discipline-based biases, provide honest feedback and are committed to socializing students to think critically and engage beyond their professional fields.¹ All teaching materials, educational modules, progress reports, and annual evaluations are discussed by the EC, and a project manager carefully monitors and records suggestions to close the feedback loop. From the start, a project manager with public-health credentials has strengthened that role and contributed to the project’s success. EC members have project time commitments ranging from 10–20% annually.

Governance of SARET rests with four entities: an Executive Committee, Internal Advisory Board, External Advisory Board, and an Editorial Review Board. Members of these groups are experts in SUD education and/or research; they are charged with ensuring the integrity of the project’s curriculum and mentoring experiences to align with the project’s aims and the best educational and inter-professional evidence. An Editorial Review Board was added to strengthen assessment; and an External Advisory Board was expanded to include representatives of participating disciplines. The Internal Advisory Board members are lead educators from each of the four schools whose roles are to “champion” the project, encourage faculty participation and engage departments/schools as learning laboratories and supporters of student participation. These “champions” are key to any school undertaking a similar project.

Members of the advisory boards are senior in their disciplines, chosen for the depth of their knowledge and positions from which to carry out “culture changing” initiatives.⁵ However, the fact that group members are steeped in the traditions, learning and teaching strategies, ethics and shared beliefs of their disciplines, can interfere with transitioning to an IPE approach; “tribal” perspectives can disproportionately weight opinions.¹ Shifting the paradigm from traditional learning methods to IPE is essential.

Interactive web-based learning modules were developed by consulting medical faculty and EC members. These provide overviews of SUD core content and related research methods on which students draw for interprofessional discussions. The six modules are: Exploring SUD Research (brief interviews with NIH funded investigators in SUDs); Personal Impact (a health professional’s Severe Alcohol Use Disorder and recovery); Epidemiology of SUDs; Screening; Neurobiology of Addictions; Evidence-based Treatment Modalities. Information Technology (IT) support was essential to collaborative module planning, design, production, delivery, and evaluation. IPE was emphasized in early and revised modules to benefit from cross-discipline perspectives. Each module contains content, references and pre- and post-tests. The combined completion time is about one hour. Students are encouraged to discuss the modules in the weekly seminar and to identify discipline specific vs. interprofessional perspectives in roundtable presentations. The success of this initial design of instructional materials strengthened the confidence of SARET’s EC in the strategy and process of creating learning products less heavily weighted toward single discipline learners.¹ Crafting an interprofessional curriculum requires collaborative (versus cooperative) exchange to produce innovative and transformative learning approaches.⁶ Drawing on principles of adult learning⁷ and seeking innovative approaches, the EC rejected traditional strategies i.e. lectures and readings; and based on IPE, successfully pushed the boundaries to embrace the goals, needs, and experiences of participating disciplines. A competency-based approach to learning research was sought, including the promotion of critical thinking and IPE content on research ethics.¹ Selected IPE components shifted the focus of learning strategies and tools to build out the information gained from the modules in seminar discussions. Videos and audio clips used to create the six interactive, web-based modules contained representative discussions and presentations by members of all the disciplines i.e. case discussions, summaries of research projects and interprofessional roles in treatment. Faculty in many health professional disciplines can use the modules in teaching and mentoring students, individually or the set of six, to tailor education to specific research approaches.

Seminars

The SARET participants meet weekly for an IPE seminar and for speaker presentations facilitated by EC members and the project manager. Seminar goals are increased exposure to the educational components of the project, including discussion of the web-based modules, commonly used language, and to the perspectives and problem-solving approaches employed by other disciplines. Student presentations of mixed discipline teams, faculty seminars and joint projects support collaborative study and interprofessional exchanges on research questions and explorative modalities. The mentees discuss educational content, including the SARET modules, and presentations by researchers, policy makers, and educators, give feedback on visits to SUD research and treatment sites, and review personal

research progress and poster development. Facilitation of discussion versus instruction by EC members strengthens the interaction and the evaluation feedback loop. Students in the four disciplines collaborate in projects and roundtables on topics and research related to SUD, engage as teams and undertake field trips to research and clinical sites. Because EC members, the project manager and guest speakers collaborate to present and co-lead seminars, EC members themselves expand their knowledge of the philosophies, approaches, and strategies that other disciplines bring to research.⁵

Mentored Research Experiences

Each student is matched by interests with an accomplished (i.e., NIH- or other federal grant-funded) SUD researcher; and must conduct a small, independent research project under the mentor's research umbrella topic (e.g., *smoking, SUD screening, epidemiology of drug use, heroin use in women*). Each student's work is presented in a final poster session. The EC embraces the goal of an inter-professional team of mentors and invites researchers with strong reputations for quality research from participating schools (e.g., psychologists; primary care and psychiatric physicians; nurses; social workers; dentists; and basic science researchers). Objective criteria guide the selection of researchers from all disciplines fostering a consensus on the values essential to scientific discovery, informing education with broad perspectives of social and biomedical science, ethics and health policy.⁸ "Cross-profession" mentor/mentee assignments are opportunities for students to learn the essential values, education and the research methodologies practiced outside their disciplines. The one-to-one mentoring experience uses interactive learning methods⁷ between mentee, mentor, and members of the research team and exposure to the structures and implementation of research programs. Mentors are key role models at the "micro level," as they engage students in research, generate enthusiasm through dissemination of their work, and encourage an IPE "ethos".⁵ Mentors and faculty emphasize critical thinking and collaboration with students, and stress the value of "team" as essential to understanding, using, and translating science within an ethical framework via referrals to university/medical center research sources (librarians, statisticians and mentor-generated assignments) and database searches and literature reviews, as well as publication preparation.¹ The limited numbers of health professionals engaged in SUDs research is a serious challenge to interprofessional projects in research education and research. There are few nursing, social work, and dentistry researchers to serve as mentors, resulting in a higher proportion of medical researchers. While federal funding agencies advocate the adoption of IPE, funding still awards to primary investigators (PI) in a single school, automatically creating a hierarchy. We have worked to dilute our vertical hierarchy by requiring good communication with our respective administration/grant funding offices. In addition, information on funding streams has increased transparency and team ownership of the project. Our PI also facilitates an open climate for interprofessional collaboration by endorsing group decisions.¹

Assessment

Students complete oral and written evaluations on the primary project goal, interest in SUD research, and on their interprofessional experience (Appendix 1). Example of questions used to elicit qualitative responses are: *Given that the SARET Program is an interdisciplinary*

collaboration among medicine, dentistry, nursing and social work, how effectively do you think the modules address the interprofessional learning objective of the overall program? What did you get from your SARET experience? Was this what you hoped to get? In addition, individual mentors provide feedback on students' performance in the mentored research experience. A second assessment component consists of the External Advisory Board and the Editorial Review Board's reviews of curriculum and curricular products. These assessment outcomes have 1) increased online availability of the SARET interactive modules 2) prompted the addition of health professional colleges/schools as collaborating partners and 3) guided revision of modules. Several evaluation benchmarks for the program activities are designed to demonstrate SARET's progress from an interdisciplinary experience to the recommended model of IPE as context for learning SUD research.¹

Evaluation

Since SARET's inception, the 76 participants in the summer mentored research program have included 24 dental, 23 medical, 18 nursing and 11 social work students. Further, 2 dental, 4 medical, 1 nursing, and 1 social work student have been year-long participants. A follow-up survey to participants from 2008–2014 was sent to 65 summer participants and 54 (83%) responded; the rate did not vary by discipline. Over half of respondents were still in training: e.g. completing residency, medical, nursing, dental or social work school, or PhD programs. Closed ended questions used a 4 point Likert scale ranging from "Strongly agree" to "Strongly disagree". Addressing the primary project goal, interest in SUD research, the overwhelming majority of respondents to closed-ended questions reported that the mentored research experience increased interest in SUD-related research (96%; 50/52) and knowledge about SUDs (100%; 52/52). (Note: denominators vary according to number completing responses to given items). Forty-six percent (24/52) report currently being somewhat or very involved in research and 29% (15/51) report specific involvement in SUD research.

Regarding interprofessional attitudes, respondents to closed ended questions stated that the experience increased their appreciation of (96%; 50/52) and comfort communicating with (90%; 47/52) other disciplines. Qualitative data from annual evaluations from 2010–2015 indicate that participants recognize and positively evaluate components of IPE. They report wanting more IPE opportunities for work and for learning with the students of other disciplines. SARET participants reported that students of other disciplines offered "completely different perspectives," that contact with other disciplines fostered a "more creative approach to research and analysis," and that inter-professional aspect was their "favorite part." For example, students said that they "enjoyed the "comments and experiences" voiced by those in other disciplines, which enable them to understand the "constraints that colleagues in other disciplines have." Students also found IPE experiences "to be fruitful" and "a unique opportunity to engage and learn from students of other disciplines." Specifically, between 2010–2015, SARET participants positively evaluated work with students of other disciplines in an IPE model. Feedback on qualitative questions mentions new knowledge of other professional discipline roles, and greater clarity in understanding their own professional roles.

External evaluation of the web-based SARET modules by other schools and the external advisory and editorial boards affirm their relevance and applicability across disciplines. Early external school partners and champions participated in annual conference calls. General feedback was solicited in open ended questions and supported wide use of the web-based learning modules in all 4 disciplines. Partners supplied quantitative data on the numbers of users accessing the six modules and the courses at schools into which the modules were integrated. Four years into SARET, partnerships existed with outside medical (2), dental (2), and social work (1) schools that agreed to incorporate the modules into relevant courses, i.e. neurophysiology, population health, and ethics.

Initiation of these partnerships has expanded the use of these modules to two additional medical schools. Incorporating feedback from SARET's EC members, students, and the Editorial Review Board, the modules were modified to include more social science integration.⁸ At our home university, NYU, to date, the modules are used in 10 nursing, 5 medicine, 3 dentistry, and 6 social work courses (Table 1). Table 2 describes internal, "early partner" and other external use of the modules. SARET guest seminars and web-module learning scenarios now include a range of practitioners and researchers, and more social science terms and methodologies. Data (Table 1) suggest that the IPE tone, teaching strategies, and modules are being well received by student viewers in all four disciplines. To date (January 2017), the modules have been used by 11,256 NYU students, and 15,712 viewers external to the school, supporting student and faculty acceptance and use of core SUD knowledge presented.

Annual conference calls with the External Advisory Board are mechanisms for board members' detailed oral feedback on the annual project progress reports. Board members respond to open ended questions on project changes and the Project Team provides clarification and extenuating information. This mechanism has led to the refinement of some of the strategies for dissemination, addition of disciplines/schools to the original group of three, etc.

In addition, Editorial Review Board members were each assigned two modules to review yearly. They were queried by check list on accuracy and clarity of content as well as technical issues. They also provided qualitative feedback on module content, suggestions for improvement, and whether the modules met our objectives for content appropriate for an interprofessional audience.

Impact on Students and Participating external school Partners

SARET influences the educational climate at the "micro" level (what faculty can do) and the "meso" level (what faculty can promote) in our large, northeastern university.⁵ While our university recognizes IPEC (Interprofessional Education Collaborative), and IPE, *SARET* operationalizes policy targeting the attitudes, knowledge, and skills of health professionals to increase interprofessional collaboration and advance SUD education.⁵ SARET offers students "hands on" opportunities to learn research methodologies for SUDs, supplementing the very limited offerings on SUDs nationwide. The SARET Program is a substantive example of an NIH-supported initiative that advances an interprofessional platform for

health professional education in SUDs research. Over nine years (two funding cycles), the project team introduced faculty and students from medicine, nursing, dentistry, and social work to interprofessional collaboration by faculty and mentors, and to diverse student attitudes and beliefs, cultivating a shift from discipline-specific to inter-professional education. While the primary style remains management-focused leadership (based on the knowledge, skill, and experience of each discipline, and education and/or research within that discipline) has shifted to functional leadership (leadership rotates to the team members most knowledgeable in addressing an issue). Such successful paradigms could drive future funding initiatives to support educational/training experiences for students in the healthcare disciplines. SARET's success has been recognized in continued federal funding, within the participating schools/ colleges, and by relationships among faculty and students in each professional group, strengthened in seminars and other learning experiences. As noted by the IOM, the evaluation of IPE and development of research mentors and IPE faculty will require unified and enthusiastic efforts as well as the allocation of skills and resources to health professional education. The SARET project has moved us toward an envisioned IPE approach; continued efforts will advance our schools in this model.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This work was supported by National Institutes of Health, National Institute of Drug Abuse (R25 DA022461).

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Table 1**Student Evaluation of Inter-professional Components of SARET**

Other disciplines offered “completely different perspectives,”
Contact with other disciplines fostered “more creative approach to research and analysis,”
That inter-professional aspect was my “favorite part.”
“Enjoyed the comments and experiences” voiced by those within other disciplines
Enabled students to understand the “constraints that colleagues in other disciplines have.”
Students found IPE experiences “to be fruitful”
“A unique opportunity to engage and learn from students of other disciplines.”
(Main or lasting impact?) “Interdisciplinary team approach to problem solving” “Showed me that interdisciplinary research is important...there is not much collaboration between medicine nursing and dentistry”
“I appreciate the experience of working with nurses and dentists”

Table 2

Curricular integration of SARET modules at the home school

Module title	Course(s) into which module was integrated, by school
Exploring Substance Abuse Research	Dentistry: Dentistry as a Profession; Professionalism & Ethics in Healthcare Nursing: Population-Focused Nursing Care; Theories Nursing & Social Sciences; Professional Nursing; Substance Abusing Client Social Work: Clinical Practice with Substance Abusers; Evidence-Based Mental Health Practice: Substance Abuse & Co-occurring Disorders Seminar; Social Work Research I
Personal Impact	Medicine: Ambulatory Care Clerkship; Practice of Medicine; Summer Undergraduate Research Program (SURP) Dentistry: Ethical Foundations of Dentistry; Professionalism & Ethics in Healthcare Nursing: Contemporary Clinical Practice: Advanced Practice Roles, Substance Abusing Client Social Work: Clinical Practice with Substance Abusers; Evidence-Based Mental Health Practice; Substance Abuse and Co-occurring Disorders Seminar; Social Work Research I
Epidemiology	Medicine: Addiction "Inter-Clerkship Intensive" Nursing: Population Focused Care Social Work: Clinical Practice with Substance Abusers; Substance Abuse Co-occurring Disorders Seminar; Social Work Research I
Screening	Medicine: Practice of Medicine; Ambulatory Care Medicine Inter-Clerkship Dentistry: Multidisciplinary Practice Nursing: Professional Nursing; Mental Health Across the Lifespan; Psychiatric-mental Health Nursing (UG) Social Work: Clinical Practice with Substance Abusers; Evidence-Based Mental Health Practice: Substance Abuse and Co-occurring Disorders Seminar; Social Work Practice I; Social Work Research I; Integrated Behavioral Health Seminar; Substance Abuse and Co-occurring Disorders Seminar.
Neurobiology	Medicine: Neuroscience Nursing: Advanced Pathophysiology; Advanced Pathophysiology II, Mental Health Across the Lifespan, Substance Abusing Client Social Work: Clinical Practice with Substance Abusers; Substance Abuse and Co-occurring Disorders Seminar; Social Work Research I
Treatment Modalities	Medicine: Addiction "Inter-Clerkship Intensive" Nursing: Psychiatric Mental Health Nursing (UG); Substance Abusing Client Practicum Social Work: Clinical Practice with Substance Abusers; Evidence-Based Mental Health Practice; Substance Abuse and Co-occurring Disorders Seminar; Social Work Research I; Social Work Practice II