

The American College of Academic International Medicine 2017 Consensus Statement on International Medical Programs: Establishing a system of objective valuation and quantitative metrics to facilitate the recognition and incorporation of academic international medical efforts into existing promotion and tenure paradigms

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ABSTRACT

The growth of academic international medicine (AIM) as a distinct field of expertise resulted in increasing participation by individual and institutional actors from both high-income and low-and-middle-income countries. This trend resulted in the gradual evolution of international medical programs (IMPs). With the growing number of students, residents, and educators who gravitate toward nontraditional forms of academic contribution, the need arose for a system of formalized metrics and quantitative assessment of AIM- and IMP-related efforts. Within this emerging paradigm, an institution's "return on investment" from faculty involvement in AIM and participation in IMPs can be measured by establishing equivalency between international work and various established academic activities that lead to greater institutional visibility and reputational impact. The goal of this consensus statement is to provide a basic framework for quantitative assessment and standardized metrics of professional effort attributable to active faculty engagement in AIM and participation in IMPs. Implicit to the current work is the understanding that the proposed system should be flexible and adaptable to the dynamically evolving landscape of AIM – an increasingly important subset of general academic medical activities.

Key Words: American College of Academic International Medicine, consensus statement, global health, international medical programs, international medicine, promotion and tenure

Access this article online

Website: www.ijciis.org

DOI: 10.4103/IJCIIS.IJCIIS_64_17

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Cite this article as: Peck GL, Garg M, Arquilla B, Gracias VH, Anderson III HL, Miller AC, *et al.*, On behalf of the ACAIM Consensus Group on International Medical Programs. The American College of Academic International Medicine 2017 Consensus Statement on International Medical Programs: Establishing a system of objective valuation and quantitative metrics to facilitate the recognition and incorporation of academic international medical efforts into existing promotion and tenure paradigms. *Int J Crit Illn Inj Sci* 2017;7:201-11.

FOREWORD

The American College of Academic International Medicine (ACAIME) represents clinicians from every specialty and from every discipline of the health sciences. Our membership includes practitioners from around the world. The following consensus statement is intended to represent the physician voice to and from every field of medicine.

INTRODUCTION

Over the past decade, there has been an increasing desire within the United States (US) academic community to enhance international presence and impact.^[1,2] A broad range of global efforts has resulted in a growing number of multidisciplinary, interprofessional, international medical programs (IMPs) that bring together academic participants from both high-income countries (HICs) and low-and-middle-income countries (LMICs). Such IMPs encompass both undergraduate medical education (UME) and graduate medical education (GME).^[3] Parallel to this trend, new faculty entrants into academic medicine are moving away from the traditional model of “publish or perish” and are increasingly embracing novel ways of contributing academically, forcing our educational systems to adapt and accommodate this growing demand for alternative and more diverse ways to engage in scholarly pursuits.^[4,5] As the growing number of health care trainees and professionals gravitate toward nontraditional career paths such as academic international medicine (AIM), the need for a system of formalized metrics and quantitative assessment becomes evident. Our goal is to provide a basic framework for such a platform, with the implicit understanding that this is only the first step on the journey to a more universal acceptance of AIM, and that the proposed paradigm will be evolving quickly and dynamically in the near future.

The proposed framework for assessing faculty efforts related to AIM and IMP participation should be a shared responsibility between primary stakeholders. Professionals involved in the development and implementation of IMPs must clearly articulate the nature/scope and value of the intended international effort(s) to their organizational leaders. Institutions choosing to engage in AIM and to participate in IMPs should make efforts to translate such activities into metrics based on a program’s potential academic value, economic viability, and sustainability. As an indirect reward, institutions that embrace the paradigm of bidirectional HIC-LMIC collaboration may be more likely to attract diverse and highly motivated faculty.^[1] An academic institution’s ability to quantify the return on investment (ROI) attributable to IMPs is inextricably tied to establishing equivalency between various currently accepted academic activities and their “international

analogs.”^[1,6-9] Transformative, collaborative efforts go well beyond academia, attracting a diverse group of global participants (e.g., funding organizations, governments, health systems, multidisciplinary committees, scientific groups, and institutions of learning). Parallel to this emerging trend, academic organizations are beginning to “translate” IMP-related efforts into the language of economic productivity and value creation, thus engineering a framework that assigns measurable “work equivalents” to knowledge, education, external image, and bidirectional exchange within the much broader contexts of population health management, disease management, public–private partnerships, and corporate social responsibility (CSR) impact.^[10-13]

ACADEMIC PROMOTION AND TENURE PERSPECTIVE

Institutional promotion and tenure (P&T) policies and guidelines tend to be limited in terms of the inclusion of AIM efforts as formal evaluation criteria and/or pathways for promotion. Although P&T guidelines at specific institutions may incorporate objective and/or subjective classifications and contribution weights related to AIM, there is no universal agreement and inconsistencies persist. One possible reason for this state of affairs may be that faculty efforts within various IMPs are not reported or tracked as rigorously as activities performed at home institutions. It may therefore be difficult for P&T committees to determine the relative impact of AIM activities when compared to other, traditionally more accepted types of faculty contributions. Academic volume-based metrics, rather than value-based metrics, may be biased toward favoring “the more the better” paradigm in regard to publications, teaching, research, and clinical care. Further, the lack of easily quantifiable and categorizable recording of IMP-related effort(s) may lead to disconnect between faculty and administrators who are held accountable to a well-defined set of traditional metrics. All too often, the international effort by individual faculty is documented with a few added entries on the curriculum vitae and perhaps a published report outlining the overall IMP experience. For this reason, institutions are encouraged to develop formal criteria for advancement that specifically incorporate AIM activities, including academic deliverables and any relative weight(s) of such deliverables toward the faculty’s individualized P&T considerations. Furthermore, the implementation of a framework that assigns measurable “work equivalents” to bidirectional efforts that promulgate knowledge, education, image/brand, and team impact at the international level should become an accepted benchmark in academic medicine.

For the new generation of culturally sensitive academic medical professionals, it is very important to ensure

that social responsibility takes center stage and becomes integrated within the academic mission itself, both at the individual and institutional levels. One way to channel this positive energy is through active engagement in AIM and participation in IMPs, preferably as a dedicated career path, including the formal recognition of AIM activities within new or existing institutional P&T tracks. The identification of objective, yet dynamically evolving metrics will allow proper accounting of faculty time and effort dedicated to IMPs. This, in turn, will create a synergistic interplay between sustainable AIM careers and the acute need to address global needs related to disparities in health care delivery resources. Given the acute need for a comprehensive framework to categorize, quantify, and qualify faculty efforts related to AIM and IMPs, The ACAIM Multidisciplinary Consensus Group on International Medical Programs sets out (a) to distill a set of practical recommendations on measuring and valuing AIM/IMP faculty efforts and (b) to create a justification for universal implementation of the proposed academic productivity accounting system across US health care institutions. Following successful implementation, as envisioned by ACAIM leadership during the 2016 inaugural meeting,^[2] the proposed system of values and metrics should be (a) applicable across the full spectrum of health care institutions, (b) embraced in uniform fashion by institutional P&T committees, (c) accepted as a platform to facilitate multidisciplinary and interprofessional international work, and (d) serve as a foundation toward recognizing AIM and IMP "value equivalency" with other currently accepted scholarly academic pursuits.

QUANTIFICATION OF VALUE AND EFFORT: THE RELATIVE VALUE UNIT

The "total relative value unit" (total-RVU) system, also known as the resource-based relative value scale, is utilized by the Center for Medicare and Medicaid Services (CMS) to reimburse physicians and health care facilities for services rendered.^[14,15] As defined by CMS, a total-RVU consists of three components including a "physician work RVU" (pwRVU), a "practice expense RVU" (peRVU), and a "malpractice expense RVU".^[14,16,17] These three combined factors are multiplied by a geographic practice cost index to determine the total-RVU for each current procedural terminology (CPT®, American Medical Association, Chicago, Illinois) code to reflect a physician's "billable services." A total-RVU reflects the relative level of clinical time, mental effort, technical skill, judgment, stress, and amortization of the physician's education.^[18] In general, pwRVUs quantify the volume of work or effort expended by a physician to actively treat patients. There is a growing emphasis around the world to incentivize physicians based on defined

clinical pay-for-performance measures.^[19-21] However, these and other technical considerations are beyond the scope of the current discussion.^[22]

Although academic institutions assume inherent inefficiencies within the pwRVU component, these "inefficiencies" may actually be "accounted for" in terms of educating and training future members of the US medical workforce – an underfunded mandate within the health care system. Given the above considerations, the concept of "academic RVU" (aRVU) begins to emerge. Included in this aRVU paradigm are activities such as teaching, research, and administration. If one applies the definitional understanding of pwRVU to the aRVU, one may be able to conceptually support effort-specific recognition of academic work and its various previously outlined subcomponents (e.g., time, professional skill and judgment, etc.).^[10] If applied appropriately and objectively, aRVUs may provide a valid and standardized approach to measure scholarly "work effort" in an elegant way that is simple and creates a stable accounting environment which is applicable and understood both academically and administratively.

CONCEPTS OF RELATIVE VALUE UNIT TRANSFORMATION AND RELATIVE EQUIVALENCY OF NONCLINICAL CONTRIBUTIONS

Clinical care, research, and education (training) are the three pillars of traditionally understood academic medicine.^[23] Academic productivity applicable to P&T requires the demonstration of mastery across multiple skill sets, including clinical excellence; teaching effectiveness for both learner knowledge and skills; objectivized 360° feedback from supervisors, peers, and learners; established record of programmatic and curricular development; track record as an educator, leader, and/or mentor; clear evidence of research, scholarship, and funding support; and a track record of peer-reviewed publications.^[5,24] It has been pointed out that "while health care systems undergo major clinical care transformations, the traditional RVU system remains unchanged and is unlikely to meet the ever-changing and ever-increasing demands and challenges of today's academic mission" without modifications.^[23] A wider adoption of the aRVU that incorporates various forms of nonclinical and/or nontraditional activities represents a solution to the broader "productivity accounting" conundrum of academic medicine [Table 1].

Potential adaptations of the aRVU system can easily include factors within the broader area of "academic

Table 1: Currently accepted components of the proposed academic relative value unit

Publications	Education	Research	Administration
Academic value	Academic value	Academic value	Estimated effort
Author rank (e.g., first versus senior)	Estimated effort	Estimated effort	Institutional value added (e.g., process or quality improvement)
Estimated effort	Quality of work (e.g., student evaluations, number of attendees)	Funding (e.g., industry versus NIH and other competitive mechanisms)	Role (e.g., course director, lecturer, assistant)
Journal impact factor	Time spent	Principal versus coinvestigator	Time spent

NIH: National Institutes of Health

productivity.”^[25] However, various current iterations of the aRVU system focus mainly on institution-specific local, regional, and national participation, with much less emphasis on international activities.

OBJECTIVE FACULTY METRICS AND ACADEMIC EFFORT VALUATION SYSTEM IN INTERNATIONAL MEDICINE: A FRAMEWORK THAT REFLECTS PROFESSIONAL AND ORGANIZATIONAL IMPACT

To address the need for standardized tracking of scholarly efforts by academicians, Mezrich and Nagy proposed a system for measuring academic productivity using aRVUs,^[25] as outlined in the previous section. The core components of their aRVU model include “publication RVU” (pubRVU), “administrative RVU” (admRVU), “education RVU” (eduRVU), and “research RVU” (resRVU) [Figure 1].^[25] The pubRVU considers faculty time effort, academic value or goals, authorship rank, and journal impact factor. The admRVU incorporates time/effort, academic value or goals, and administrative role/title. The eduRVU includes classroom effort based proportionately on noncredit and credit hours, academic value or goals, and quality. Finally, the resRVU considers research-related time and effort, academic value or goals, funding-type modifier, and investigator status (e.g., principal vs. coinvestigator).^[25] The aRVU model considers a sum of pubRVU + admRVU + eduRVU + resRVU as a structured guide for resource allocation toward the achievement of individual, multidisciplinary, and interprofessional group goals and to identify potential change across the entire organizational landscape, beginning at the divisional or departmental level. Goals and successes in the aRVU paradigm are better delineated and more easily tracked, with the added ability to generate a very tangible and granular “report of activities” that can help guide organizational decision-makers. To recognize AIM efforts within this framework, organizations will have the flexibility to either: (a) assign activities from each predefined type of academic pursuit (e.g., pubRVU, admRVU, eduRVU, and resRVU) to an “international” category using the equivalency paradigm introduced in this manuscript

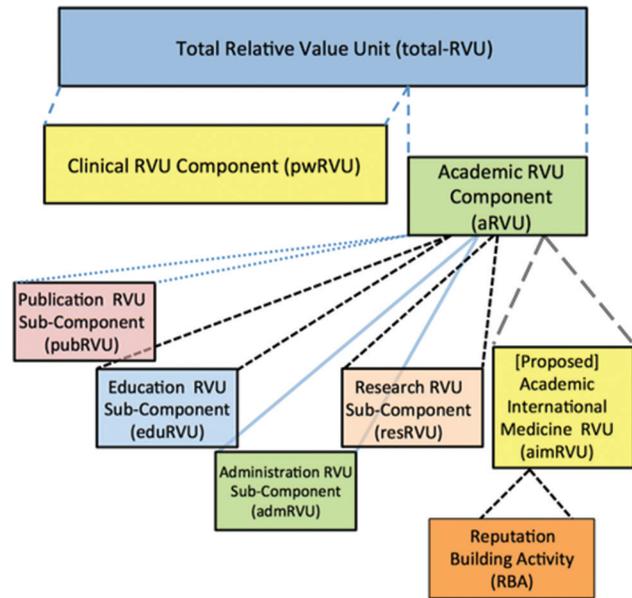


Figure 1: Simplified schematic representation of the total relative value unit (RVU) structure, with detailed breakdown of the total relative value unit into its primary subcomponents – physical work (clinical) relative value unit and academic relative value unit (aRVU). These subcomponents are further divided into publication relative value unit, education relative value unit, administration relative value unit, research relative value unit, and the (proposed) academic international medicine relative value unit (aimRVU) with a reputation-building activity (RBA) subcategory

or (b) create a separate RVU subtype (e.g., “AIM RVU” or aimRVU) that incorporates reputation-building activities (RBAs) [Figure 1].

ALIGNING INTERNATIONAL REPUTATION-BUILDING ACTIVITIES AND METRICS

The potential applicability of aRVUs encompasses individual organizations and institutions, groups and societies, schools and colleges, as well as faculty and/or peer groups. As outlined above, total-RVU can be designed and customized by assigning specific weights to various subcomponents, including the application of predefined multipliers to each constituent item to accentuate its relative importance. The aRVU model can be easily adopted to support administrative efforts related to categorizing, tracking, quantifying, and qualifying the value of faculty participation in IMPs. In addition to more accurate accounting for activity types

and their corresponding values, the aRVU provides a robust platform for more objective recognition of faculty effort. Finally, the aRVU system can also be extended to incorporate the measurement of international RBAs or an institution-specific set of activities that are aligned with organizational mission(s) to help elevate the clinical, academic, as well as CSR-related impact. Specific multipliers can be assigned to individual metrics to facilitate strategic planning and to accommodate faculty tracks and to counteract subjectivity in the “international effort” assessment and valuation process. Categories of RBAs all stem from the collaborative efforts within IMPs and include partnerships between institutions, joint projects, scientific investigation, and extramural funding.^[26] One important and often overlooked institutional benefit related to IMPs is the social media brand creation, thus fostering unique value and faculty recognition through RBAs, reputational building metrics (RBMs), and aRVU conversion.^[27] Table 2 list examples of “RBAs” that provide a foundation for corresponding metrics (RBMs) [Table 3].

There is also emerging support for allocating RBA credits toward broadly defined “academic contribution” and P&T considerations, featuring the ability to provide nonclinical time allocation not otherwise outlined within the traditional clinical RVU model.^[28] As such, RBAs may serve as conduits for the development and growth of educational, training, and research infrastructure for IMPs. Under the RBA umbrella, a certain amount of documented and sustained AIM effort would optimally trigger the provision of dedicated nonclinical faculty time or financial support for projects to be completed.^[29]

ALIGNING NATIONAL AND INTERNATIONAL PROFESSIONAL AND INSTITUTIONAL METRICS

The establishment of metrics for professionals and institutions from HICs provides a framework for more effective support of collaborations essential to the durability of IMPs. Individual and institutional partners from LMICs play a critical role in guiding the sustainability and effective implementation of IMPs. As outlined in the ACAIM mission statement, the goal is to provide structure and coordination that results in the creation and propagation of partnerships and efforts dedicated to the promotion of bidirectional reciprocity.^[2] IMP planning and implementation requires careful consideration of cultural and socioeconomic factors pertaining to hosting institutions, including personnel and patients. As in any complex relationship, preconceived expectations must be appropriately managed regarding equitability in programmatic benefits and value creation. The development of IMPs must include the assessment of factors specific to all geographic

Table 2: Examples of international reputation-building activities

- Active participation in AIM activities around the world. Involvement may include adjunct faculty appointment(s), forming collaborations that gradually lead to bidirectional exchanges, and the implementation of interinstitutional memoranda of understanding
- Participation in joint international projects/studies involving other institutions. Examples may include joint grant applications to both governmental and nongovernmental funding sources
- Contributions to manuscripts and other scholarly work involving AIM, IMPs, with active involvement of overseas faculty
- Participation in bidirectional lecturer exchanges, electronic communications, and consultations, as well as social media events
- The formation of international groups to facilitate joint research efforts, collaborative clinical protocol development, and health care policy work
- Hosting international professionals and/or learners at one’s institution, including the provision for bilateral expert exchanges
- Meetings with international governmental and nongovernmental organizations, including medical schools and hospital departments
- Participation in health system strengthening at the international level, preferably involving IMPs

AIM: Academic international medicine, IMP: International medical program

Table 3: Examples of international reputation-building metrics

- The number of manuscripts attributable to international collaborations, preferably in international journals (the inclusion of journal impact metrics should be considered)
- The number of teaching hours at international institutions, preferably involving established IMPs. This may also include the number of international lecturers’ hours at one’s home institution – a reflection of effective bidirectional involvement
- The number of MOUs involving overseas institutions. Such MOUs should be attributable to a particular faculty member (or group). Once international relationships are established, regular reporting on the status of each collaborative effort/IMP should take place on a regular basis
- In addition to manuscripts and other scholarly publications, the number of international webinars and/or other media productions may be considered
- Organization of a conference or another type of educational event that incorporates bidirectional knowledge exchange and/or international speakers. Emphasis should be placed on such activities involving new or established IMPs. Additional consideration should be given to any associated CME offerings
- Number of meetings (and the associated time commitment) directly involving international governmental and nongovernmental organizations and/or departments. In addition, any indirect and direct benefits and outcomes of such meetings should be considered for formal recognition
- Documented successes in implementing health systems strengthening initiatives at the international level

CME: Continuing medical education, IMP: International medical program, MOU: Memorandum of understanding

regions involved, institutional characteristics, and individual needs in the LMIC. Established metrics should help guide institutions and individuals to better support international collaborations and to avoid discontinuity in the provision of IMP services. There is a trend among IMPs to partner with an increasing number of institutions, each with varying goals and expectations, leading to a large number of bidirectional programming. This, in turn, requires more accurate accounting of activities, their types, faculty time invested, justification of potential benefits, and willingness to partner across institutional, regional, and national lines.^[2]

The strategic, bidirectional, and synergistic effort allocation is exemplified by growing numbers of GME programs participating in the development of IMPs in clinical areas where international residency rotations help more readily fulfill quantitative US training requirements in a directed manner to avoid case log deficiencies among program graduates.^[30-34] Specific to the IMP framework, US-based residency programs have to fulfill formal requirements set by the Accreditation Council for Graduate Medical Education before partnerships with international sites can be formalized. These requirements include the supervision of US residents' surgical case performance during international rotations.^[35] Clinical care and training should emphasize ethical and culturally sensitive behaviors. Although significant commitment is required from participating international faculty, this paradigm was shown to be highly effective and universally supported by all stakeholders, promoting synergistic bidirectional benefits.^[31]

There has been a significant growth in providing organized didactics through existing IMPs^[36] at the UME level as well. Global initiatives such as the World Health Assembly Resolution 68.15 encourage the development of international rotations, within the existing educational framework.^[37] These developments, in turn, help facilitate interprofessional collaborations, mentorship, long-term capacity building, and further growth of IMPs. Institutional stakeholders should encourage programmatic development that encompasses both UME and GME participation, preferably with continued evaluation of competencies and milestones occurring in parallel.^[38,39] Finally, any curricular program development within existing IMPs should adhere to established norms, including the Kern's six-step approach that begins with problem identification, needs assessment, and ends with evaluation and feedback.^[40]

Continuing medical education activities, sometimes referred to internationally as "teaching the teachers," are another example where IMPs can provide the framework for the introduction of objective metrics for performance. This also creates a foundation for future didactic development that includes content validation and quality assurance. As outlined earlier in this report, detailed recording of IMP operational performance should be carried out on a regular basis, thus allowing for accurate tracking and recognition of faculty effort and its magnitude, leading to increasing standardization across diverse geographic and institutional settings. The number of learners, clinical education/training encounters (including duration), research projects in education/training, and administrative commitments to education and training (including time involved), should all be tracked and categorized to align national and international partners, institutions, and formal bidirectional access to relevant intellectual property

and techniques. Finally, long-term sustainability of IMPs requires that faculty efforts, regardless of their geographic location, can be translated into RBAs, RBMs, and ultimately aRVU equivalents. To remain consistent with the bidirectional nature of IMPs, a similar approach should be developed for participating faculty from LMICs.

ALIGNING FUNDING AND METRICS

With continued growth, the influence of IMPs tends to spill over into other spheres of the social and economic arena, interfacing with both governmental and private sectors. By actively promoting health and well-being, IMPs can influence the entire socioeconomic fabric of local communities. Not infrequently, private benefactors and industry sponsors play a pivotal and synergistic role in long-term sustainability of IMPs that ultimately benefit their population. The lack of diversification in IMP funding sources has the potential to negatively affect both the viability of existing programs and the ability to form new IMP ventures.^[41,42] To enhance sustainability, "bridge funding" should be available within institutional budgets for faculty members who are actively involved in AIM. Finally, prospective students, trainees, and faculty are more likely to expect formal organizational support for AIM and IMPs as an alternative and innovative form of participation and/or academic contribution. Thus, institutional investments in these areas will likely increase long-term global organizational attractiveness, competitiveness, and reputation.^[43-45]

Seed grants from one's institution (department, hospital, and/or university) or professional societies constitute an important mechanism of financial support.^[46] One excellent example of how financial support can be optimized and aligned with institutional and individual priorities is the University of Toledo Kohler Travel Grant program, which offers small grants of up to \$1500 to initiate international collaboration efforts.^[47] After the exploratory phases of the project are completed, individual needs assessment is performed, including faculty-generated report of their activities, successes, and/or failures. The subsequent creation of formalized, bidirectional exchanges can help facilitate further growth and development of institutional AIM efforts, with the eventual creation (or joining of) existing IMPs.

ALIGNING PROFESSIONAL CLINICAL TIME AND METRICS

Although the implementation of IMPs reflects a long-term commitment to developing sustainable international initiatives, the predominant constraint is the continued imbalance between primary institution's clinical revenue

generation and the opportunity cost of professional services rendered abroad. Clinical productivity rendered internationally by IMP faculty should be tracked using standardized activity logs so that appropriate teaching or clinical credit (or equivalent thereof) can be awarded by the originating institution. As outlined earlier in this document, ACAIM encourages the use of either the aRVU model that assigns equivalence to academic activities performed internationally or the implementation of aimRVUs that represent a form of productivity tracking unique to AIM efforts. Appropriate licensure and/or credentialing should be required for all faculty members performing clinical duties internationally in IMPs and should not be superseded by the heavy clinical burden in LMICs due to patient safety concerns. In addition, IMP faculty who are proctoring trainees internationally (including participants from either HIC or LMIC) should earn commensurate educational credit as long as these activities are properly documented and adhere to appropriate standards of quality. As always, patient safety and care should be the top priorities for all health care providers regardless of their level of training or the location of service provision.^[48]

When faculty time is reimbursed using an extramural award allocation, a department can more easily translate such effort(s) into the “full-time equivalent” (FTE) accounting paradigm. Within this framework, a direct hourly rate may be scaled, depending on a multitude of institutional (e.g., actual time allocation) and extrinsic (e.g., National Institutes of Health salary cap) factors. The same faculty’s professional “clinical time” is largely devoted to clinical RVU generation, and usually represents a fixed effort allocation (e.g., 80% total time). This results in an automatic “20% time allocation” toward aRVU generation. Ultimately, any nonclinical activity that is allocated in the form of aRVUs must be accounted for within the health system, usually in the form of “salary support” from either internal (e.g., tuition and institutional taxes) or external (e.g., extramural funding) sources. One of the greatest challenges to the implementation of a quantitative effort-based model in the setting of IMPs is the accounting for faculty time required to effectively conduct duties and responsibilities associated with international medical work. One solution that has become incorporated in grant applications for international work requires a commitment from departmental leadership to dedicate a set percentage of clinical faculty’s effort to activities outlined within the funding mechanism’s parameters. Institutions that recognize this important responsibility tend to be at the forefront of academic thought leadership, tend to attract and retain the best faculty, and tend to provide an example for others to follow.^[9,49-54] Time accounting is largely dependent on the academic track and the individual faculty member’s expected pwRVU production. A standard format utilized by academic institutions to offset clinical

productivity using nonclinical sources of revenue involves “purchasing,” a percentage of pwRVU effort commensurate to the academic time allocation dedicated to the intended international nonclinical activity and/or newly developed aimRVU.

METRICS EQUIVALENCY MODEL: JUSTIFYING STANDARDIZED VALUATION OF FACULTY PRODUCTIVITY AND EFFORT

After exploring various components of the aRVU system and its equivalents, it is important to examine the relative equivalency of nonclinical activities and IMPs in terms of “value added” to the sponsoring institution’s mission, its relation to faculty development, and resultant professional satisfaction that serves to retain high performers and ultimately define organizational culture and enhance institutional reputation. The optimal framework to measure diverse faculty interests when considering P&T eligibility and academic productivity within the aRVU paradigm consists of institutional consideration for “equivalency” across a broad range of predefined academic deliverables.^[5] It is this approach that provides the best frame of reference for assigning value to scholarly activities performed by faculty engaged in IMPs [Figure 2]. Below is a detailed rationale for this approach, directly comparing costs, benefits, and alternatives to each proposed option and type of academic contribution. For the sake of uniformity, faculty time is assigned an hourly compensation rate of \$150.00 (US currency), but this may vary according to institution, circumstance, and/or discipline. This rate can then be

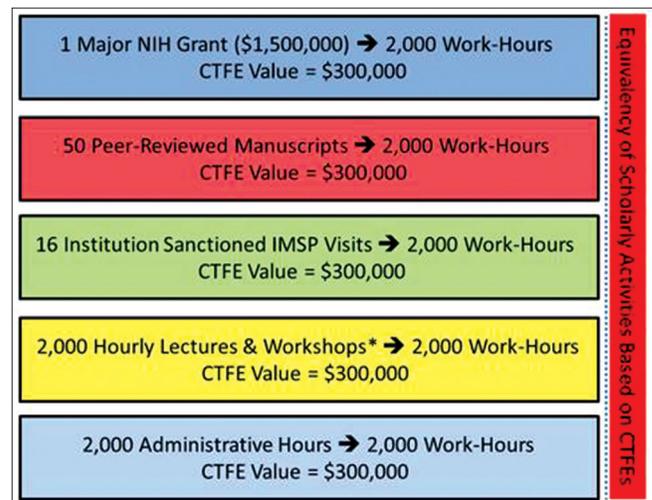


Figure 2: A simplified schematic demonstrating clinical time financial equivalents-based equivalency of various scholarly activities within the proposed P&T framework: One major National Institutes of Health grant is equivalent to 50 peer-reviewed manuscripts or 16 institution-sanctioned international medical programs visits. Equivalent administrative and educational contributions are also shown for comparative purposes. Legend: CTFE = Clinical time financial equivalents; P&T = Promotion and tenure; Clinical time financial equivalents value = \$150 hourly faculty rate × number of hours; * = Includes time dedicated to pre- and post-activity preparation/assessment

multiplied by the number of hours worked to arrive at the “Clinical Time Financial Equivalents” (CTFE).

Grants

According to the National Science Foundation, it takes approximately 120 (CTFE of \$18,000) hours to complete a grant application for “modest-sized research, development, or implementation proposal” that results in funding of approximately \$50,000/year sustained for 3 years.^[55] For a larger, approximately \$1,000,000 grant application, the estimated amount of time required is 1000–2000 person-hours (CTFE of \$150,000–\$300,000).^[55] The magnitude of the project clearly correlates with the amount of effort required to successfully complete it. One must also be mindful of the fact that only 10%–30% of grant applications submitted (depending on grant type, project size, and application competitiveness) will ultimately be funded.^[56] At the level of the institution, this commensurately “dilutes” the actual ROI for the revenue line-labeled “grants and funding.” In terms of organizational benefits, some of the funding obtained from grants acceptance can be spent on either reinvestment back into research or investments in other organizational priorities (e.g., IMPs, infrastructure, nonresearch faculty, and marketing).

Manuscripts

In terms of manuscript preparation, for a relatively experienced academician, it takes approximately 40 h (CTFE of \$6000) over a period of 2–3 weeks to complete the writing process.^[57] This is an equivalent of approximately one workweek in terms of FTE effort. Consequently, if a typical university expects 10–20 first-authored or last-authored manuscripts for P&T, it would amount to approximately 400–800 h (CTFE of \$60,000–\$120,000) of actual effort, distributed over a certain period of time. Unless formally funded, these efforts most often occur on “organization’s time” and are likely to involve investigator-initiated projects that are internally funded. In terms of total “work contribution” applicable to P&T, this is comparable to writing several small grant applications, one large grant application, or an equivalent number of hours devoted to preparing and delivering educational content.

Teaching

Educational activities take substantial and often variable amounts of time to prepare, followed by practical application (e.g., lecturing) and the final assessment phase (e.g., quantitative and qualitative evaluations). It has been estimated that for a reasonably proficient educator, it takes approximately 2–4 h of preparation and a comparable amount of time for subsequent evaluation (CTFE of \$600–\$1200).^[58,59] Others have proposed a system of weights, to be multiplied by the amount of time spent on corresponding educational activities.^[59] For example, a weight of 2.0 can be assigned for lecturing or serving as an inpatient attending physician, a weight of 4.0

assigned to course directorship, and a weight of 10.0 for preparing a grand rounds lecture.^[60] These activities are then compiled into a “teaching portfolio” that chronologically reflects all relevant activities and their relative weights.^[59] When one applies this information to a fairly typical set of teaching expectations for P&T, the amount of effort reflected in a typical “teaching portfolio” is surprisingly similar to that of either publications or grants – approximately 500–1000 h (or weighted equivalents) of expected activity (CTFE of \$75,000–\$150,000). This, again, amounts to roughly 6 months of “full-time” teaching work, based on a 2000-h work-year.

Administrative

A “typical” faculty member is likely to become engaged in a broad variety of administrative tasks as they advance in experience and seniority through the organizational hierarchy. Such tasks are instrumental to effective organizational functioning, yet considered nonproductive in the pwrVU frame of reference. This also must be considered within the context of P&T, where various academic promotion tracks either require or strongly encourage administrative contributions. Considering that a typical committee meets once a month, for approximately 1–2 h, and a typical faculty member attends at least 2–3 different committees, the approximate amount of time devoted to this type of activity amounts to an average of 24–72 h/year in committee meetings only. When similar amount of clerical work is added (assuming a fairly typical faculty workload), the total equals anywhere between 48 and 144 h (CTFE of \$7200–\$21,600) or an effort equivalent to 1–3 manuscripts or a small grant application.

International medical programs

Faculty participation in IMPs provides a unique opportunity to contribute, learn, and serve as a conduit for personnel recruitment, retention, and satisfaction. A typical IMP-based rotation may require anywhere between 2 and 12 weeks, with most ranging from 4 to 8 weeks spent internationally (usually 1–3 times/year). Whilst participating in IMPs, as envisioned by ACAIM, faculty members should be engaged in clinical care, educating students and other trainees, attending administrative and other organizational meetings (as appropriate), actively developing professional relationships that lead to bidirectional exchanges, program growth, health systems strengthening, and reputational benefits for involved institutions. Given the above parameters, typical faculty commitment to international work amounts to approximately 160–320 h/year (CTFE of \$24,000–\$48,000), of which variable proportions will be designated to teaching, administrative tasks/activities, research, and/or clinical duties. This amount of time corresponds approximately to an effort required to complete 4–8 manuscripts or two small grant submissions.

Based on the framework presented above, institutions should view AIM and IMPs as components of “valid and equivalent” faculty advancement track for P&T purposes. To ensure that expectations are met for all involved stakeholders, individual participants who are committed to AIM will inherently be held to a set of academic standards that will likely be more stringent than the currently accepted norms. Consequently, the formalized new system of IMP participation, focused on building bidirectional international programs and academic value creation, will also mean that both institutions and faculty participants will be willing to accept and embrace the proposed, standardized system of academic value-based metrics (either aRVUs or aimRVUs) presented in this document. Figure 2 provides an outline of the equivalency paradigm for different subcomponents of the aRVU. Figure 3 is a simplified schematic demonstrating how AIM-based P&T track could be incorporated into the current system of faculty promotion, based on the equivalency postulate. Finally, ACAIM proposes the modified aRVU system that either creates a dedicated aimRVU allocation for efforts performed by faculty during IMP engagement or an alternative system that creates equivalency between domestic and international academic pursuits, using existing P&T valuation standards [Figure 4].

CONCLUSIONS

This consensus statement outlines a realistic, objective, and easily implementable framework for the incorporation of AIM- and IMP-related faculty pursuits into existing

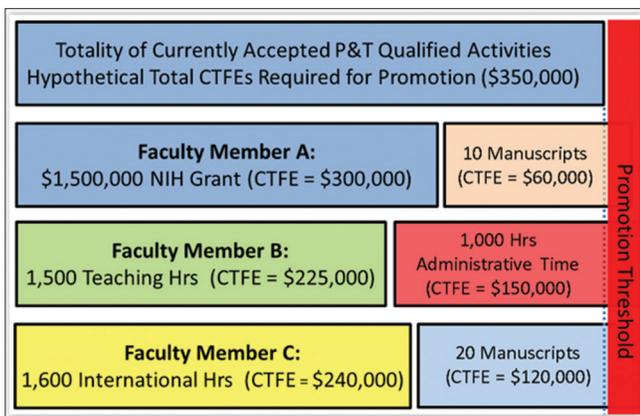


Figure 3: An example of a simplified promotion and tenure profile for three faculty candidates: Faculty Member A attained a major National Institutes of Health grant and published 10 manuscripts, thus exceeding the promotion threshold; Faculty Member B is an outstanding educator, with multiple teaching awards and 1500 documented teaching hours. She/he is also an administrative director in a departmental division, with 1000 h of documented service to the organization; Faculty Member C is a national expert in academic international medicine, with 1600 h of well-documented contributions to various international medical programs affiliated with her/his university. She/he is also a prolific writer, with 20 peer-reviewed manuscripts. Note that all three candidates met or exceeded the institutional promotion threshold. Legend: CTFE = Clinical time financial equivalents; Hrs = Hours; P&T = Promotion and tenure; Clinical time financial equivalents value = \$150 hourly faculty rate × of hours

P&T paradigms, utilizing generally accepted methods of quantifying academic efforts and contributions. The need for such system of formalized metrics and qualitative assessment of academic productivity is evident as the growing number of students, residents, and educators gravitate toward nontraditional forms of academic and professional engagement. Most importantly, the proposed system is based on equivalency between international medical pursuits and other currently accepted categories of activities that fulfill P&T eligibility criteria. ACAIM is committed to advocating for formal recognition of both institutional and individual efforts dedicated to AIM and IMPs. Effective advocacy requires accurate tracking of activities and fair valuation of associated efforts. A fair and balanced academic system that fosters synergy creation between institutions, faculty members, and international participants represents the most optimal solution to solving the current, unacceptable status quo.^[2,61]

Acknowledgment

This consensus statement is being published across all ACAIM-sponsored periodicals (International Journal of Critical Illness and Injury Science and International Journal of Academic Medicine) as requested by the combined ACAIM Boards of Governors and Directors, as well as the Multidisciplinary Consensus Group on International Medical Programs. Justifications for parallel publication of this important material include wider dissemination of knowledge and significant differences in readership distribution of both periodicals. The parallel publication of this document has been approved by editors of both journals and by all coauthors of this scholarly work.

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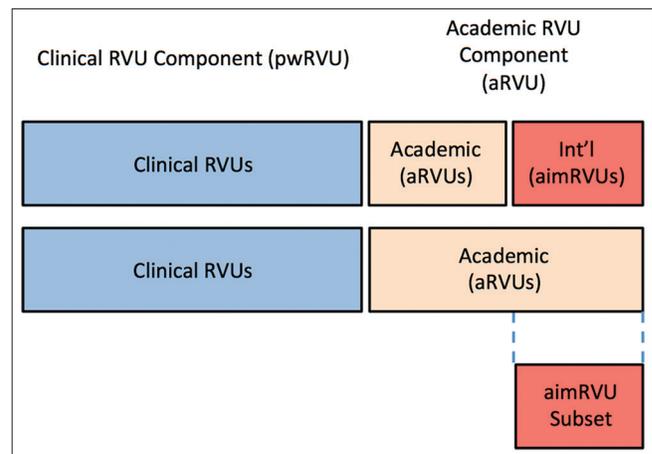


Figure 4: Two potential ways of incorporating academic international medicine relative value units (aimRVUs) into the overall total relative value unit system: [Top] aimRVUs are reported as a separate category within the total relative value unit paradigm; [Bottom] aimRVUs are reported as a subset of the aRVU component. Legend: aimRVU = Academic international medicine relative value unit; aRVU = Academic relative value unit; RVU = Relative value unit; tRVU = Total relative value unit (clinical + nonclinical)

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The authors would also like to acknowledge the following individuals for their support during the consensus planning and drafting process: Juan A. Asensio (Omaha, NE); Charles H. Cook (Boston, MA); Susan D. Moffatt-Bruce (Columbus, OH); Mayur Narayan (New York, NY); Kiran C. Patel (Tampa, FL); Ziad C. Sifri (Newark, NJ); and Franz Yanagawa (St. Luke's University Health Network, Warren Campus, Phillipsburg, NJ).

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Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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