Measuring Academic Productivity: Implementation of an aRVU Model

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Creation of an aRVU Model for the Dept. of Neurology
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- Inspired by a review of our department by John Kessler MD, Professor of Neurology, Northwestern University
- and based on an academic RVU system developed in the Department of Diagnostic Radiology, University of Maryland.

The relative value unit (RVU), developed by Medicare to guide reimbursements, assigns a value to each clinical activity.

We sought to develop an academic RVU (aRVU) system to assign a value to all non-clinical activities performed by faculty, i.e. research, teaching, administration, university service.

Goal: Provide individual faculty, Division Chiefs and Chair a transparent and quantitative measure of total productivity, i.e. wRVU + aRVU
aRVU Pros:

- Faculty receive recognition for all academic activities.
- Division Chiefs and Chair can adjust teaching & clinical responsibilities based on reliable and quantitative data.
- Provide quantitative data to Dean, administrators on faculty productivity beyond clinical wRVU.

aRVU – Cons:

- “Now we are lawyers”
- Effort to track all activities
Process

- Establish an aRVU for every activity, from writing a letter of recommendation to obtaining NIH funding.
- Faculty committee representing clinicians, researchers, educators.
- Delphi process – 3 rounds
Assumptions

✧ aRVU should have the same “units” as wRVU so they can simply be added to a total RVU (tRVU).

✧ One FTE = 4,500 tRVU per year

✧ One hour of academic work should equal between 2 and 3 aRVU. *The sorts of things neurologists do in the clinical world are in the range of 2 - 3 wRVU per hour.*

✧ The more creative the activity the higher the aRVU per hour. *Hypothesis-driven research should count more than giving the same lecture to residents year after year.*
Assumptions

- Major teaching responsibilities should receive credit for the considerable time spent on these activities. *The ACGME has a formula for %FTE for Neurology residency directors that we used to assign aRVU for this position.*

- Publications should be valued based on journal impact factor, type of publication, and position in the author order.

- Grants should be valued based on direct costs and % FTE supported by the grant.
Result

- Vice-Chair: 450
- EEG / EMU lab director: 450
- Resident mentoring / per resident per year: 50
- Committee membership - SUNY: 20
- Grand rounds presentation: 10
- Student examinations per session: 5
- Letter of recommendation: 4
- Supervising attending at journal club: 3
Result - Publications

- **Data publication**
  - Single author 290
  - 1st author 230
  - 2nd author 85
  - 3rd author 40
  - ≥ 4th author 25
  - Senior author 140

- **Case Report**
  - Single author 100
  - 1st author 80
  - 2nd author 50
  - 3rd author 30
  - ≥ 4th author 20
  - Senior author 65

Multiply value by $\sqrt{I.F}$
Result - Publications

- Since the range of impact factor (IF) is quite large, we adjusted by using the square root. For example, Annals of Neurology IF = 9.6 so our multiplier is 3.1.

- Data publication - 1st author \[ 230 \times \sqrt{\text{IF}} \]

- 1st author Annals of Neurology
  \[ = 713 \text{ aRVU} \]
Result - Grants

- **NIH grants:**
  \[ \text{effort supported by the grant} + \left( \sqrt{\text{direct costs}} \right) / 2. \]

- **Example**
  Grant supports 20\% FTE with $1M direct per year

  \[ aRVU = \left( \frac{4,500 \text{ / year} \times 20\%}{1,000,000} \right) + \frac{\sqrt{1,000,000}}{2} = 900 + 500 = 1,400 \text{ aRVU} \]

- Credit given for submitted grant proposals that were not funded. *To acknowledge time invested and encourage faculty to write grants.*
Outcome – IT WORKED!

Productive faculty delighted to see their academic efforts recognized.

Unproductive faculty not so happy.
Looking back after 3 years

Publications and grants probably valued too high: Maximum tRVU for clinician-educators ~ 4,500 while for researchers ~ 10,000
Looking back after 3 years

- Lump versus Split
  - Are all Vice-Chair duties equivalent?
  - Are all Division Chief duties equivalent?
  - Are all committees equal?

- Activities not included on original list - needs to be dynamic

- Regression towards mean of 2.5 aRVU / hour for all activities
Looking back after 3 years

wRVU does not include teaching time: Clinical work is faster without associated teaching
Looking back after 3 years

- Not immune to manipulation
  - Outright dishonesty: *e.g.* claiming aRVU for a research publication when in fact it was a letter to the editor.
  - Cutting corners: *e.g.* a fellowship director changes mid-year and both faculty take full aRVU credit for being director. Or, taking claiming credit for being committee chair and a member of the same committee.
  - Is that really possible?: *e.g.* 20 committees? Or 8 hours to prepare a routine lecture given to residents every year?
Conclusions

- aRVU system should be developed by diverse group of faculty with input from all stakeholders
- Must be dynamic and revised to accommodate new responsibilities and respond to identified weaknesses
- aRVU is an effective, fair, and quantitative method to measure academic work and productivity
- Useful to Division Chiefs and Chair to fairly distribute teaching / clinical activities
- Useful to Chair as transparent mechanism to determine bonus
- Can provide justification to administrators for components of salary support
The struggle itself toward the heights is enough to fill a man's heart. One must imagine Sisyphus happy. ---Albert Camus