# Academic Models

There are multiple methods that Academic-teaching practices have used to organize their operations. There is no specific standard. These models all pivot around a number of critical variables and each model puts together the variables in its own ingenious way. The critical variables:

- The frequency of presence of the faulty. Some faculty have high frequency: they are present for most , if not all half days of the "grid" (the grid is the 10 session weekly schedule, Monday AM + PM etc. ). Other practices have low frequency of faculty presence: only one faculty session per week.
- The planned linkage of faculty to "learners" ( Residents). Some practices have a clear linkage of specific faculty to a specific set of Residents. ( R1 + R2 + R3)
- The linkage of Residents to each other. Some practices have loose affiliation and linkage between Residents while other have grouped R1 + R 2 + R3 into specific groupings. ("teams")
- Panel. Some practices have no panel identification whatsoever while others have various forms of panel linkage: to faculty or not to faculty, to Residents or not to Residents. Very few have determined any mathematical, objective or operational limit on panel.
- Orphans. Some practices, while having some nascent panel identification, have many patients left without any specific linkage ("orphans") while others have eliminated any orphans.
- Plan for graduation. Some practices have a specific plan for the patients of the "graduating Resident while others undergo chaos each new July. The most organized plans begin the transfer of patients from the gradating R3 to the transitioning R1 + R2 on the same team and to the incoming R1 in the mid year of the graduating R3. The graduating R3 "loses" 3 sessions per week but the new R1 + R2 + R3 gain 3 sessions.
- Appointment types. Appointment types reflect the decisions made by the practice to channel or categorize workload. How a group chooses to operate, in a sense, their philosophy, is reflected in the appointment type choices. These choices and channels can be described as "demand streams", that is, how the practice has chosen to stream demand. Each appointment type has inclusion or exclusion criteria- what is appropriate or not for this appointment type? The patient appointment requests are evaluated against that criteria, categorized and driven or streamed to that appointment type. In practices where panel is important, the demand or workload is driven or streamed to individuals or to the team. Other practices, in an attempt to get Residents a complete rounded clinical experience, will categorize and streams demand by clinical condition i.e. appointment for Diabetes, for hypertension etc. Others develop a hybrid: some appointments based on urgency ( urgent, semi-urgent, routine) in conjunction with appointments of condition: Physical, well child, new OB, post partum, post hospital and the like. Generally, the more chaotic the operations, the more ambiguous the goals and the more confused the leadership, the more appointments types exist. The most efficient (cost/revenue ratio), the most satisfying the most effective ( closeness to achievement of goals) and the safest (clinical care and outcome) systems and practices will determine the panel, commit to panel management and drive the work to the linked provider or team. Workload/demand divided and

categorized by clinical condition or by urgency drives up cost and risk. With the right panel size and composition and with an intentional plan to build that panel for each Resident, the learner will achieve a complete and well rounded experience and at the same time achieve continuity with the same set of patients over the 3 year experience.

- "Urgent Care". Most of these models do not address patient delays for appointments and, as such, have to develop a mechanism for patients who are sick and either their providers are present which occurs frequently or the teams schedules are full which occurs frequently as well. Thus, most models carve out distinct urgent care mechanisms. They assign providers that duty on some rotational basis and consequently reduce continuity, increase cost, reduce satisfaction, increase the clinical risk and increase patient visits.

With the multitude of variables, there are multiple options for each practice and there are multiple ways to "see" these options. I think that panel linkage is the most critical variable and the variable that illustrates the differences most clearly. Using that variable as the prime differential, while there still may be multiple sub-options, these are the most common models:

## Faculty has the entire panel

- Faculty has the entire panel
- Residents have no panel or Residents have a sub-set of the faculty panel
- The aggregate panel may or may not be objectively determined by an equation
- Residents are clearly linked to the faculty and they work on the same days or sessions of the grid. In this way the faculty plus the associated residents are seen as a mini-team.
- Patients linked to that faculty can see any of the Residents
- Residents are encouraged to return appropriate patients to themselves and, as such, gain some "continuity" within the context of the team
- Continuity is viewed or evaluated primarily as continuity to team. Continuity can be measured to the faculty from the patient perspective: of the patients visits to the practice, how many of those visits saw the faculty **or** one of the associated residents
- Faculty sees patients alongside of Residents and may even have their own isolated faculty session
- The team of faculty plus Residents is responsible for the care of the patients
- There may be a separate mechanism for "urgent care" where care is random
- While there may be some orphans, these patients are often the new patients
- Appointment types: while there is some consideration of urgency, generally reflect a decision to stream demand to the individual or to the team.

- Residents are monitored by visits: total volume of visits and volume by patient ( how many times did the resident see that specific patient)
- Example: University of Alberta, Canada

## Faculty has no panel but there is a team linkage

- Faculty has no specifically identified panel
- Residents have a primitive, nascent panel that is not determined by any objective equation but "just happens"
- The panel is loosely proportionate to number of sessions i.e. R3 panel is > R1 panel but this is not intentionally planned .
- Faculty are linked to specific residents: R1 + R2 + R3
- Both faculty and associated residents (" team") cover the grid, that is, are scheduled on the same days
- Faculty has no isolated faculty session in which to see patients
- The team of faculty plus Residents is responsible for the care of the patients
- There may be a separate mechanism for "urgent care" where care is random
- Continuity is viewed or evaluated as continuity to individuals and to the Resident team. Most of the individual Resident continuity is achieved by "internally generated visits", i.e. returns
- Appointment types: while there is some consideration of urgency, generally reflect a decision to stream demand to the individual or to the team.
- There are commonly significant orphans in this model
- Example: University of North Carolina

## Faculty has no panel and there is no team linkage

- Faculty has no identified panel
- Faculty have an inflexible (except for their own choices on absence) schedule and randomly cover sessions or days Although Residents may have standard scheduled days, faculty do not and faculty may supervise any number of Residents
- There is no defined linkage of faculty to Residents
- Residents are not scheduled together or seen as mini-teams
- Residents have a primitive, nascent panel that is not determined by any objective equation but "just happens"

- The panel is loosely proportionate to number of sessions i.e. R3 panel is > R1 panel but this is not intentionally planned .
- Continuity is achieved in return visits if the patients co-operate
- Faculty has no isolated sessions or days to see patients
- The team of faculty plus Residents is not responsible for the care of the patients. Care is delivered randomly
- There is a separate mechanism for "urgent care" where care is random
- There are significant numbers of orphans in this approach
- Appointment types tend to be based on urgency and clinical condition with only passing consideration to panel linkage
- Example: Michigan State

## Faculty has no panel and Residents have no panel

- Faculty and Residents have no identified panel
- Faculty have an inflexible (except for their own choices on absence) schedule and randomly cover sessions or days Although Residents may have standard scheduled days, faculty do not and faculty may supervise any number of Residents
- There is no defined linkage of faculty to Residents
- Residents are not scheduled together or seen as mini-teams
- Continuity is luck
- This is a rare model since the RRC requires some continuity and the only way to get that is with at least a primitive Resident panel

## Faculty has a panel and there is team linkage

- Faculty have a panel proportionate to frequency in the office and this panel is determined by an objective equation
- Residents have a panel proportionate to frequency in the office and this panel is determined by an objective equation
- The equation may be altered in order to inject a "surge capacity", that is, a panel with some extra capacity for demand surge
- Faculty are linked to a specific set of Residents: R1 + R2 + R3.
- Faculty and linked Residents cover the grid
- Faculty days are flexible due to the commitment to cover the grid

- Team size is based on the number of faculty required to cover the grid plus the aggregate number of Residents associated with the faculty i.e. if one faculty can cover the grid (unlikely) then team size is one faculty plus associated Residents and the team panel is the sum of the individuals. It usually takes more than one faculty to cover the grid
- Continuity to individuals is achieved primarily in return visits (if patients co-operate)
- Continuity to team is a given
- Faculty may have isolated days or sessions in which to see paneled patients
- The team of faculty plus Residents is responsible for the care of the patients
- There is no separate mechanism for "urgent care"
- There are no orphan patients
- Residents are positioned for the "right" clinical experience by an intentional plan for panel composition. This is accomplished by a planned graduation with the opportunity for a alteration in panel ratio or composition i.e. add more females etc.
- Appointment types reflect a philosophy of panel management and accountability for both faculty and Residents. Workload is driven to the specific individual (either faculty or Resident). Accommodation is made within the team for patient urgency in light of the high frequency of supply absence
- This is the best model

Academic environments are no different than any other: the practice or system simply has to achieve a balance of appointment demand and appointment capacity or supply. Without that balance the system performance is a failure. Even with balance, both demand and supply will exhibit variation. Demand exhibits a natural variation. The best way to adjust to a natural variation is flex supply to meet the natural variation and to use contingency planning to load level and manage the demand that is controllable (the returns). In light of demand variation, inflexible or rigid supply will always result in delays and worsening system performance.

Supply exhibits an artificial variation. Supply variation is reflected in the high or low frequency of presence or absence from the practice , from the gird. In an academic setting, the amplitude of supply variation is wide: there is commonly low frequency of presence in the office. The best way to address supply variation is with planning and choice. In a sense, the choice here pivots around continuity: continuity to individual or continuity to team. If the practice chooses continuity to team, and demand - supply are balanced through the right objective panel size, there is the possibility of no delays. Continuity to the individual "suffers".

On the other hand, since the individuals have low frequency of presence in the office, if the practice chooses continuity to individuals, there will be delays. However, this is not a pure choice since patients

do not co-operate. Sometimes they get sick and need to choose team. Thus, in any practice with high frequency of absence and in conjunction with patient urgency, there will be discontinuity to individuals. At the same time, with appropriate commitment and planning and guided by a philosophy of "see your own and don't make them wait" reflected in appointment types, a practice can optimize patient continuity to individual providers, minimize cost, improve patient satisfaction and deliver safer care with optimal care and outcome.