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Strategies in Developing a Workload Model

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Objectives

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- To provide an overview of importance of workload measurement in hospital medicine
- Discuss the concept of FTE
- Compare US and Canadian Models
- Overview of Canadian models
- HCS workload measurement tool

Why is measuring workload important?

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- Probably the most important aspect of hospitalist model
- Workload measurement has implications on individual program level, on healthcare organization level (multi-centre hospital networks), and even provincial and national levels
  - BC: Hospitalist Workload Model Working Group
  - Ontario: The MRP Expert Panel, various working groups prior to that
  - 2008 CSHM survey: top three concerns for program directors: workload, bed capacity, recruitment

Workload measurement ties into...

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- Staffing predictions
  - In turn tied into burn out, quality of care measures, scheduling, recruitment and retention strategies
  - "FTE"
- Financial implications
  - On programmatic level:
    - hospitals need to be able to budget appropriately for their programs
    - "equal pay for equal work"
  - On provincial level: AFP, FFS, contract negotiations

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- Ensuring equitable, and tolerable workload, and the ability to measure this, is important for patients, clinicians and program administrators:
  - Patients can probably get better care
  - Clinicians' work satisfaction and avoiding burn out
  - Less headaches for program leaders and directors and less need for spending a disproportionate amount of efforts on recruitment, conflict resolution, sleepless nights worrying about $$$!

Defining Hospitalist Full Time Equivalent

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- Traditionally, human resources for physicians has not involved the same concepts widely used in other industries
- FTE concept is new as it relates to physicians
- Possible explanations:
  - Societal and professional expectations
  - Compensations mechanism: pay for service/volume (i.e. FFS): the more you work, the more you get paid
  - Traditionally, physicians have corrected for themselves in terms of workload
  - 1 FTE = I person

However…

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- Development of new specialties is changing this
  - Site based specialties: ER, ICU, Hospital Medicine
  - New work paradigms: shift work, hand-overs
    - Traditionally, same doctor would do most of these, no one to "hand over to"
- New compensation mechanism: AFP/APP/ARP
  - In 2005-2006, $2.98 billion spent on APP in Canada*
  - 39.1% of all Canadian physicians receive some form of APP*
- In the US: Managed care

* CIHI: Physicians in Canada – The Status of Alternative Payment Plans 2005-2006

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- All of this means physicians are becoming more and more like “employees”
- Therefore FTE is more applicable to them now

So, how to define an FTE

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- Unlike in the business and management world, defining a physicians FTE (and by extension a hospitalist FTE) is difficult
  - Issues around 24/7 coverage, weekend/night call, changes in clinical conditions etc

Broadly looking at it:

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- CIHI defines an FTE based on payment information
- 1 FTE: someone who earns in the 40th to 60th percentile of the income distribution curve (within the same specialty, corrected for variation between provinces)*

* CIHI : Full-Time Equivalent Physicians Report, Fee-for-Service Physicians in Canada 2004–2005

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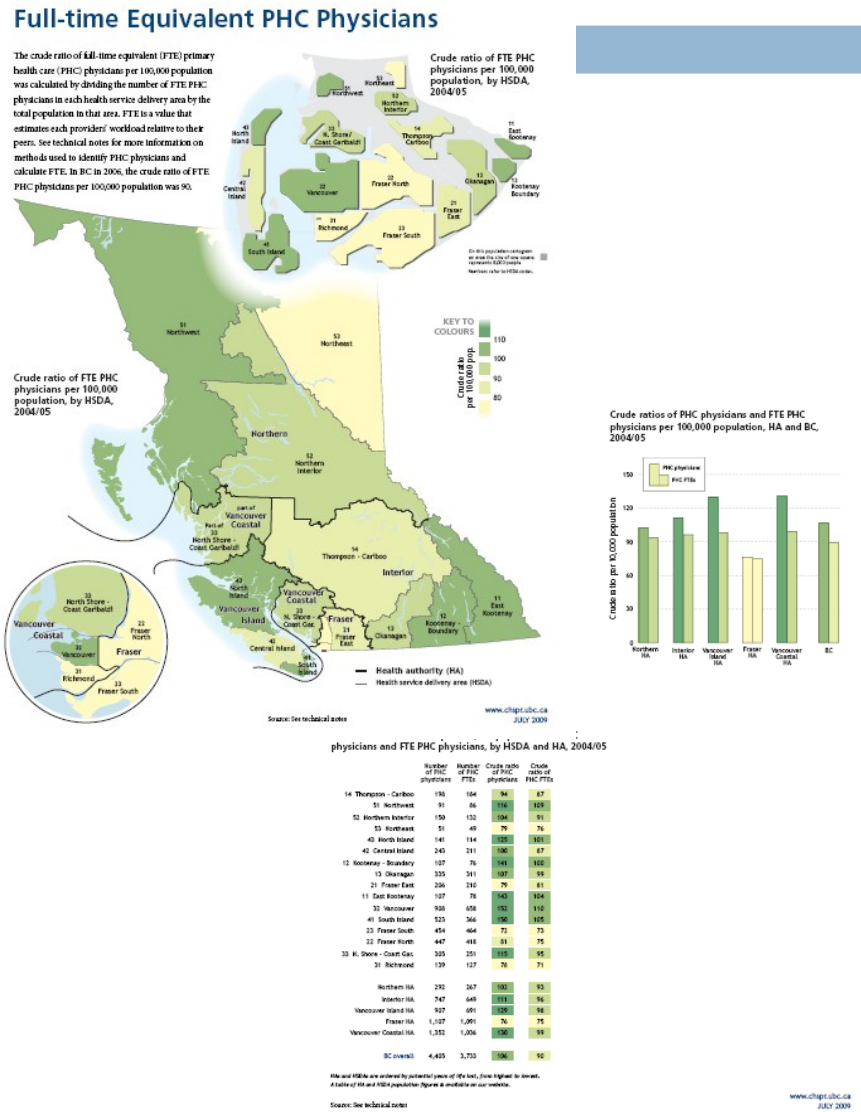
- The CIHI definition may be useful for developing health policy* by governments (such as deciding to increase/decrease medical school enrolment etc)
- However...not useful in day to day use



* UBC Centre for Health Services & Policy Research (CHSPR), July 2009 www.chspr.ubc.ca

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- As a result, a definition for FTE becomes an arbitrary issue*
- Various ways to define it:
  - Self reported surveys of annual hours
  - Exert opinion of what is reasonable
  - Contract negotiations between section reps and government officials

*PHYSICIAN PERFORMANCE BENCHMARKING IN CHILDREN'S HEALTH SYSTEMS. ECG Management Consultants, www.ecgmc.com

Generic physician FTE definition- examples

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- Canadian Association of Emergency Physicians
  - 1 FTE = 1500 hours per year*
- Alberta Physician Resource Planning Committee (AHW, AMA)†
  - 1 FTE = 50 hours per week, 2400 hours per year

•* CAEP, http://www.caep.ca/template.asp?id=4DE69C13B70C4BF48D79D786BA2537D2
•† RRPC, Predicting Physician Supply and Future Need, 2006

As for hospitalists...

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- No standard definition in Canada or the US
  - *SHM recently did a Focused Survey which, among other things, asked about contractual definitions of a hospitalist FTE. There was little consensus about how an FTE is defined: with an n of 116, 12% of respondent specify a minimum number of shifts per year (median 181); 17% specify a minimum number of hours worked per year (median 2,000); 17% specify an average number of shifts per month (median 15); 10% specify an average number of hours per month (160); 17% specify "works about the same as others"; 15% specify "devotes full time and attention" and 12% were "other". **

* SHM Hospitalist Leader Blog. John Nelson
http://blogs.hospitalmedicine.org/SHMPracticeManagementBlog/?p=187

Hospitalist FTE definition

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- CSHM survey:
  - Annual no. shifts: median 200
  - Annual no. hours: median 1800 hours

- Ultimately, each province, or even each program needs to define the FTE based on their specific characteristcs

Back to workload models – US models

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- More is known about some US models compared to Canadian ones
  - Wachter- Lurie*
  - Nelson Model†
  - Hovey Model†
- In general, all the US models are primarily focused on staffing projections, and less on compensation
- All of them divide total annual work (either census, or numbers of admissions, or hours), by an individual's annual expected workload

•* Hospitalist Staffing Requirements. Wachter, Lurie. Effective Clinical Practice.1999;2:126–130.
•† SHM, Hospitalist Staffing Requirements.
http://www.hospitalmedicine.org/AM/Template.cfm?Section=Practice_Resources&Template=/CM/HTMLDisplay.cfm&ContentID=14227

Canadian models – general comments

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- Unlike US models, less is known about these models
  - No published models available, but some have been presented at various conference and meetings
- Some focused on staffing, others developed in response to compensation issues
- Some developed through the work of provincial sections, others developed at a program level
- Seem to have largely developed independently in various provinces

Underlying assumptions – building blocks of workload models

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- Canadian models utilize underlying assumptions to derive their conclusions
  - naturally, if such assumptions are not accurate, the outcome will also be flawed
- Some assumptions are based on some objective data
  - The North York General Study: 64% bedside care, 34% non-clinical activities
- Some are "expert opinion"
  - Ontario 2007 MRP Working group: various activities take up different amounts of time
  - 3:2:1 rule in BC

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- Many of these underlying assumptions (which in turn provide the building blocks of workload measurement tools) are the results of provincial working groups (or at least are formalized by these activities)
  - Ontario
    - 2007 MRP Working Group
    - 2008 MRP Funding Working Group
    - 2008 MRP Toolkit working Group
    - 2009 MRP Expert Panel
  - Prior work in BC and Alberta

Caution re assumptions

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- Assumptions are the building blocks of current models
- The validity of these is unknown
- Currently, little work is being done to study these

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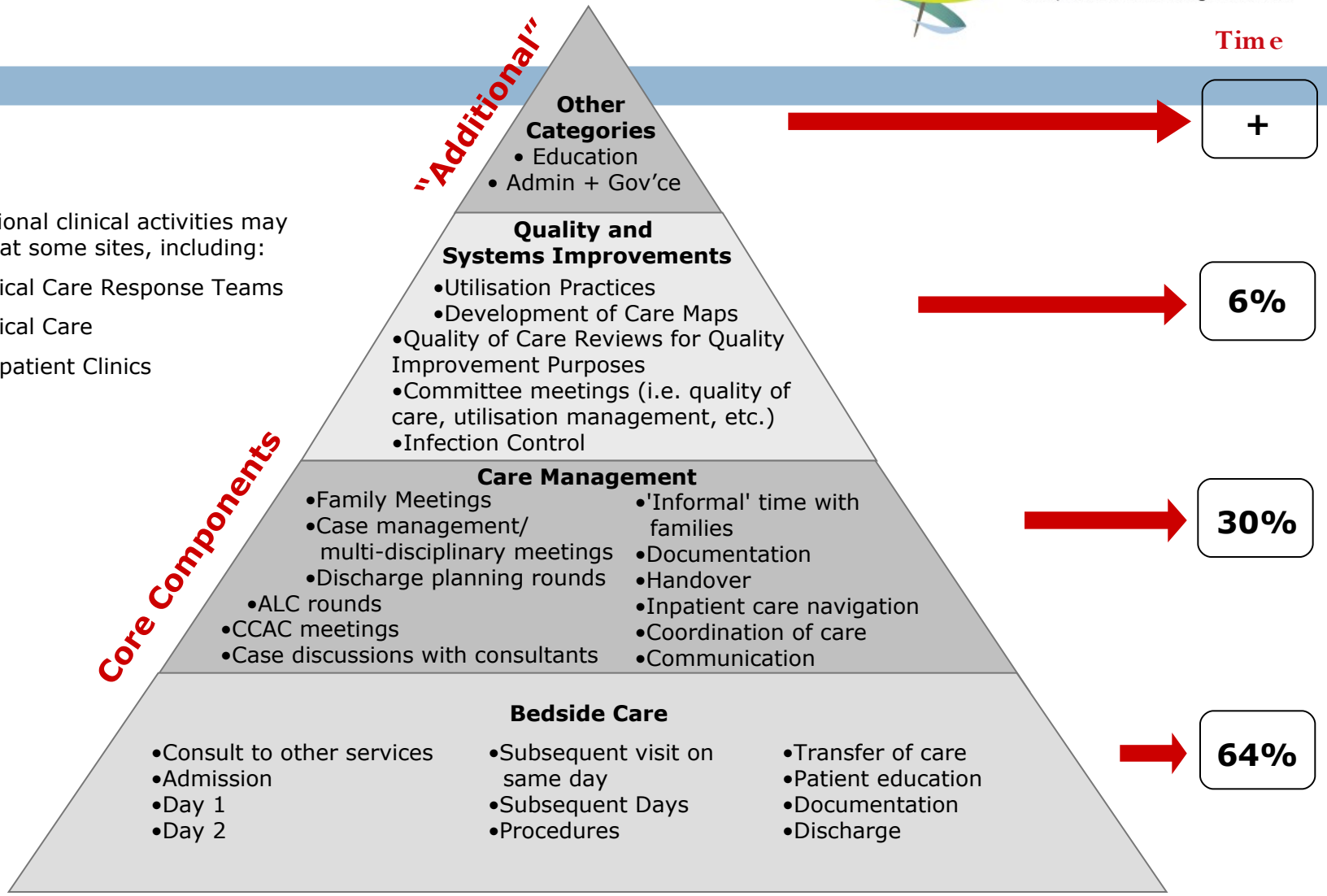
Time

Additional clinical activities may exist at some sites, including:

- Critical Care Response Teams
- Critical Care
- Outpatient Clinics



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	NYGH 2006	O'Leary 2006 *	Westbrook 2008†	Ammenswerth 2009 ‡	Weigl 2009¥
Direct (bedside) care	64%	18%	15%	27.5%	20.9%
Indirect patient care	30%	69%	50% (33% communication, 17% care planning)	62.8% (26.6% documentation, 36.2% communication)	69.4%
Non-patient related	6%	13%	17%	9%	9.7%

•* How hospitalists spend their time: insights on efficiency and safety. J Hosp Med. 2006 Mar;1(2):88-93.
•‡The time needed for clinical documentation versus direct patient care. A work-sampling analysis of physicians' activities. Methods Inf Med. 2009;48(1):84-91
•† All in a day's work: an observational study to quantify how and with whom doctors on hospital wards spend their time. Med J Aust. 2008 May 5;188(9):506-9.
• ¥ Participant observation of time allocation, direct patient contact and simultaneous activities in hospital physicians. BMC Health Serv Res. 2009; 9: 110

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- Similarly, while assumptions about length of time required for various activities "feel" right, there is a paucity of objective data to validate them

Day of hospitalization	Bedside Care + Care Management
day 0 (day of admission)	94 minutes
day 1	47 minutes
day 2	47 minutes
day 3 (discharge)	47 minutes
day 4-8	28 minutes
days ≥ 9	18 minutes

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- Despite these challenges, assumptions are the building blocks of workload modeling
- Using these assumptions, one can create workload measurement tools

- Two broad categories of workload models:
  - Use administrative data (LOS, census)
  - Use billing codes (as proxy measures)

Workload tools using admin data

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- BC: Fraser health Authority
  - Developed by Rod Tukker and Mike Paletta
  - Uses a 3:2:1 ratio of work units (each unit=30 minutes) for admission, discharge and daily rounds
  - Uses census and LOS to convert daily work to work units and then number of hours per physician
  - Helpful when compensation is hourly rate
- Ontario: Guelph tool
  - Developed by Marcel Dore
  - Uses LOS data, and various minutes of work assigned to C codes
  - Measures total hours of work for the hospitalist program
  - Divide by individual physician annual hours, can get staffing

Workload tool using billing data

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- Lakeridge Health Model
  - Developed by Luigi Pedretti, David Gee
  - Uses billing codes as proxy measure of work
  - Assigns different work units to each code (each unit = 10 minutes) eg. admission (C933) = 6 units
  - Assumes a given hospitalist can work 8 hours per day, 75 % of that clinical.
    - 8 hours = 48 units
    - 75% x 48 = 36 units clinical work per hospitalist (this is the type of activity that can be captured by billing codes)
  - By tracking the amount of billings, the model can estimate the amount of work units (and hours) needed to generate the billings

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- All these models are great tools to measure workload and help with predicting staffing needs
- However, all have limitations
  - Models using admin measures: lack of complexity factors, fixed underlying assumptions (whose validity is questionable)
  - Models using fee codes: all the limitations inherent in the fee schedule (no codes for care planning etc)

HCS Workload measurement tool

- First commercially available tool
- Web-based software
- Modular structure
- Aims to add complexity factors to the measurement
- Allows for versatility in the underlying assumptions used
- Uses administrative data to estimate total amount of daily work (in hours) needed to be done
  - Translate “daily census” to “number of hours of work”

Log in page

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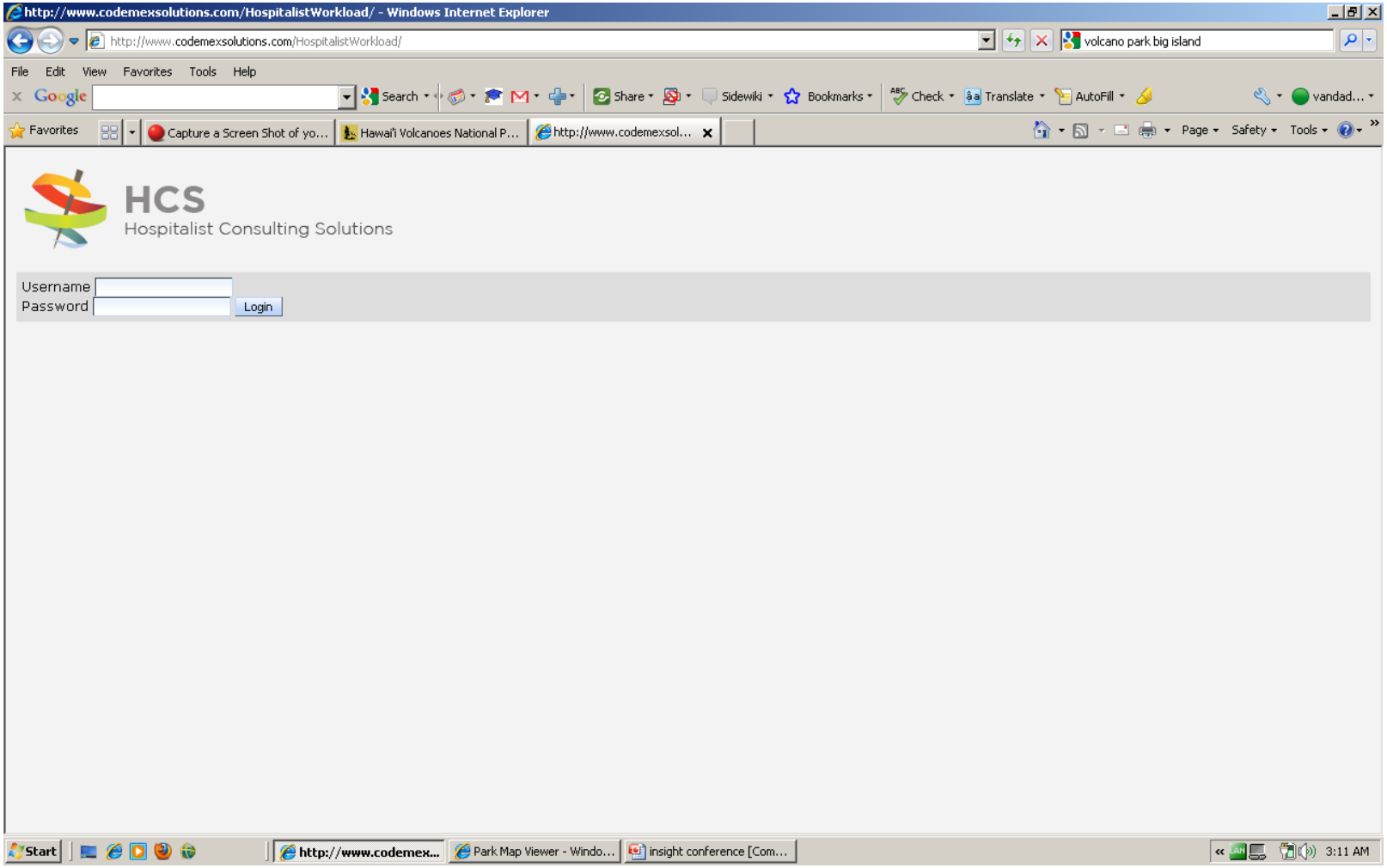

Click to expand modules

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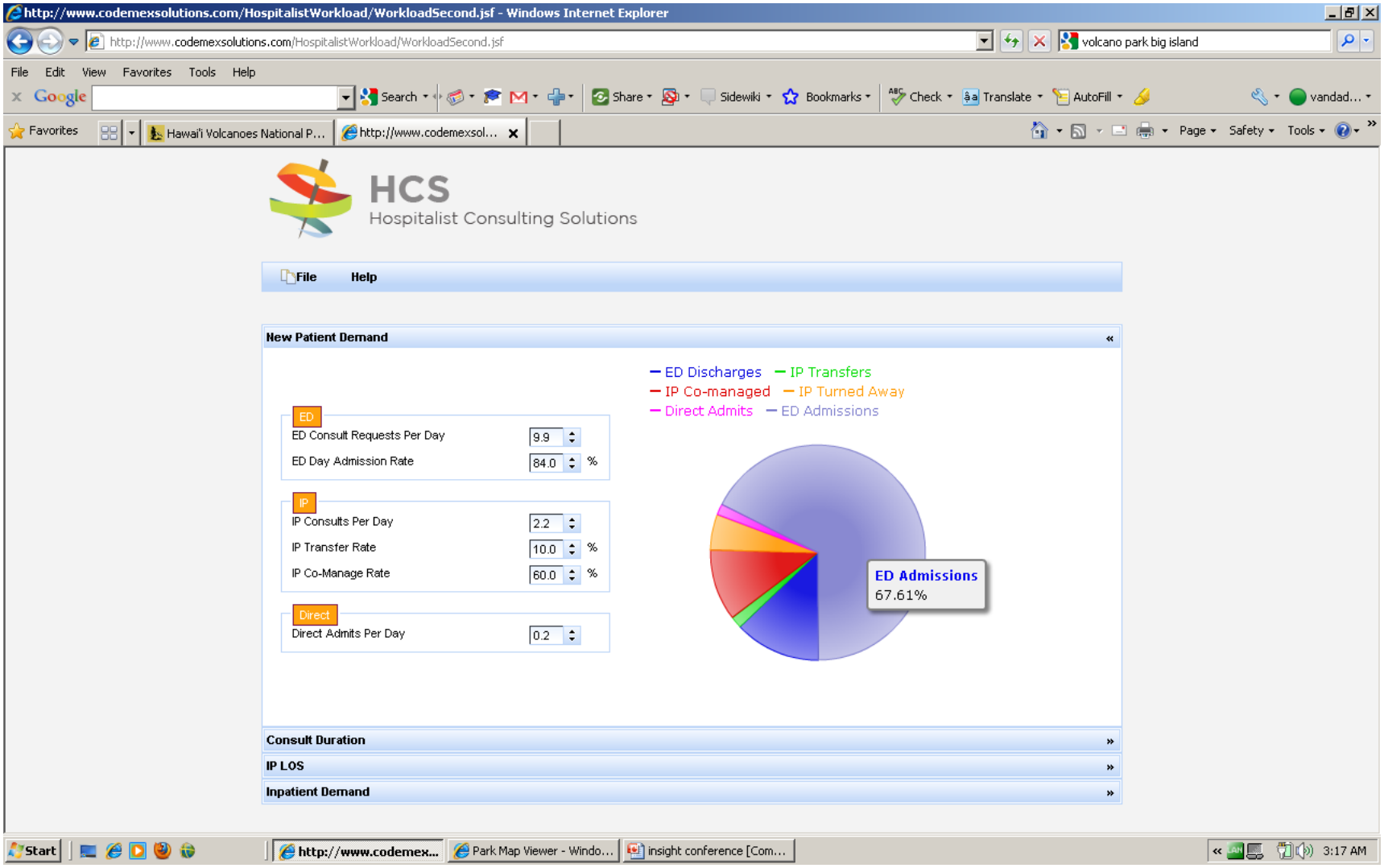

Program “in-flow”

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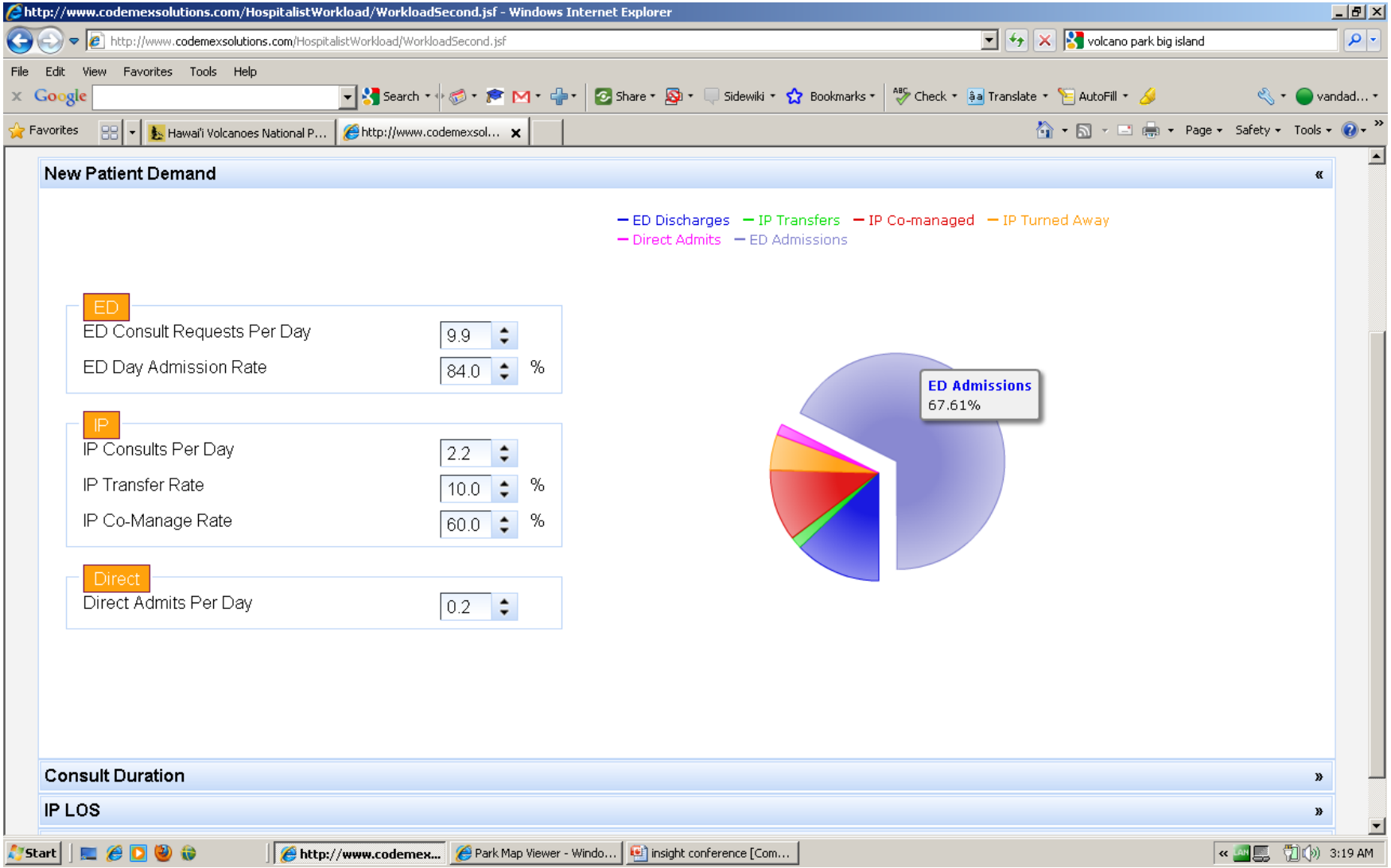

Consult durations

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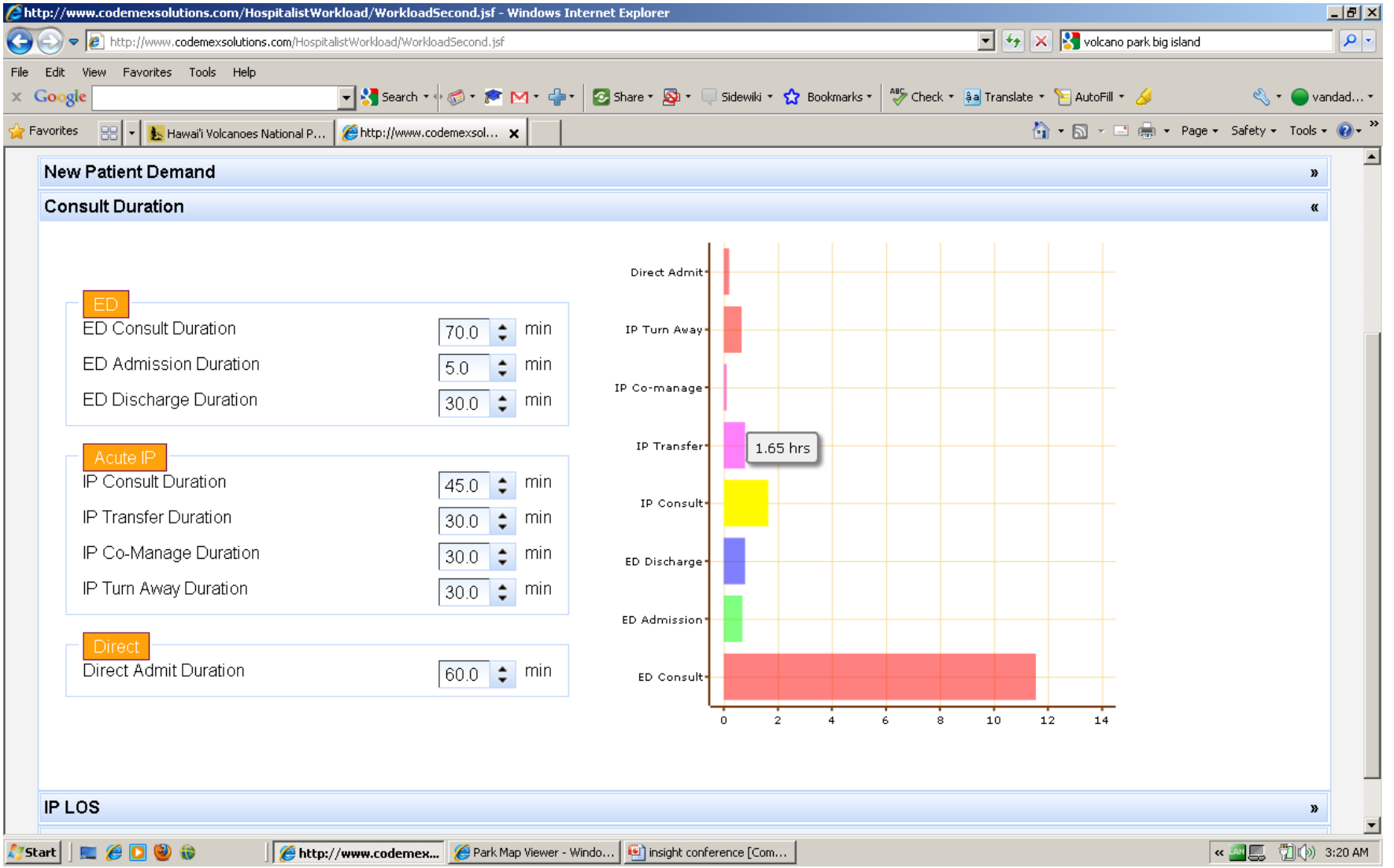

Admin data-LOS

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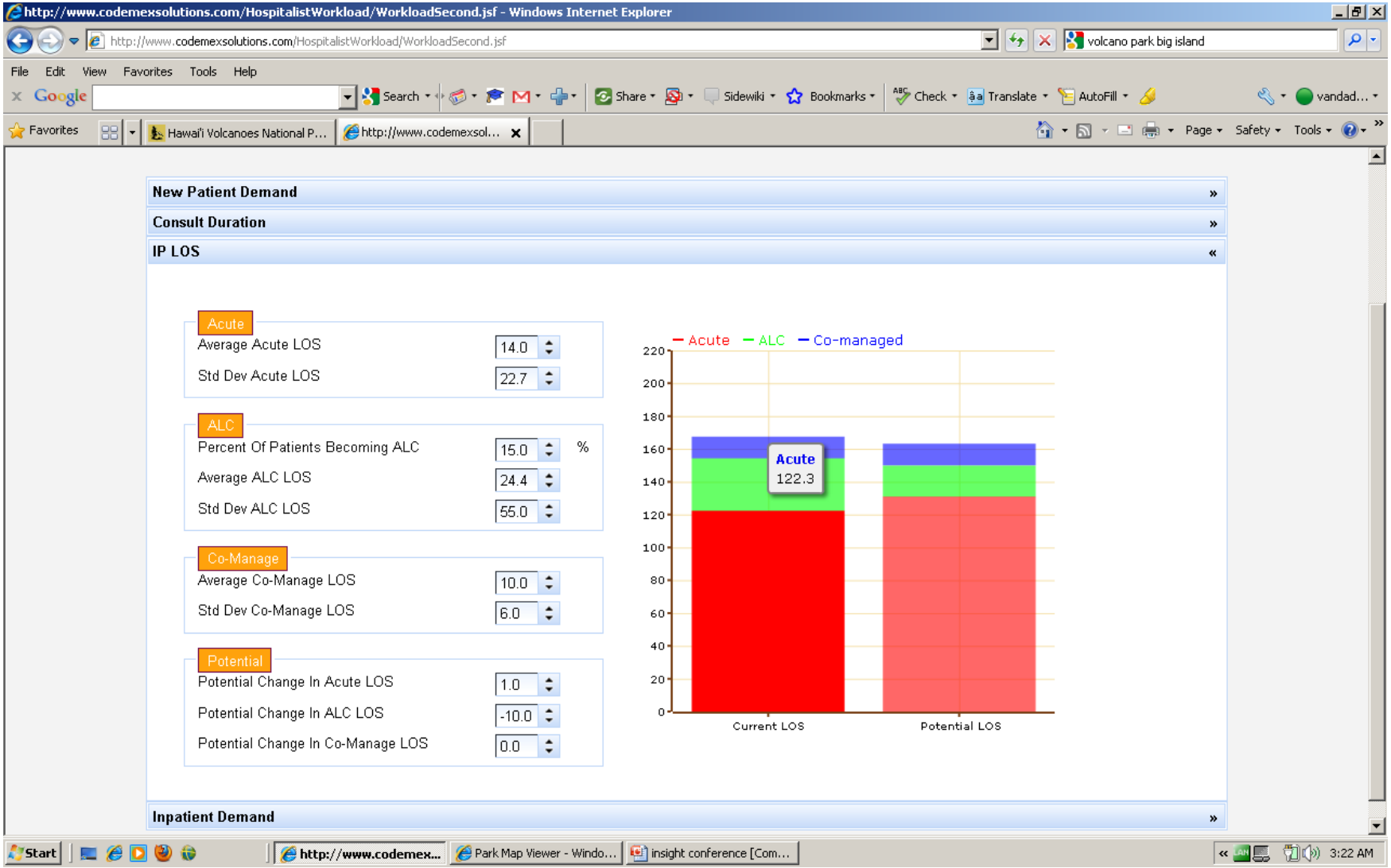

Complexity factors

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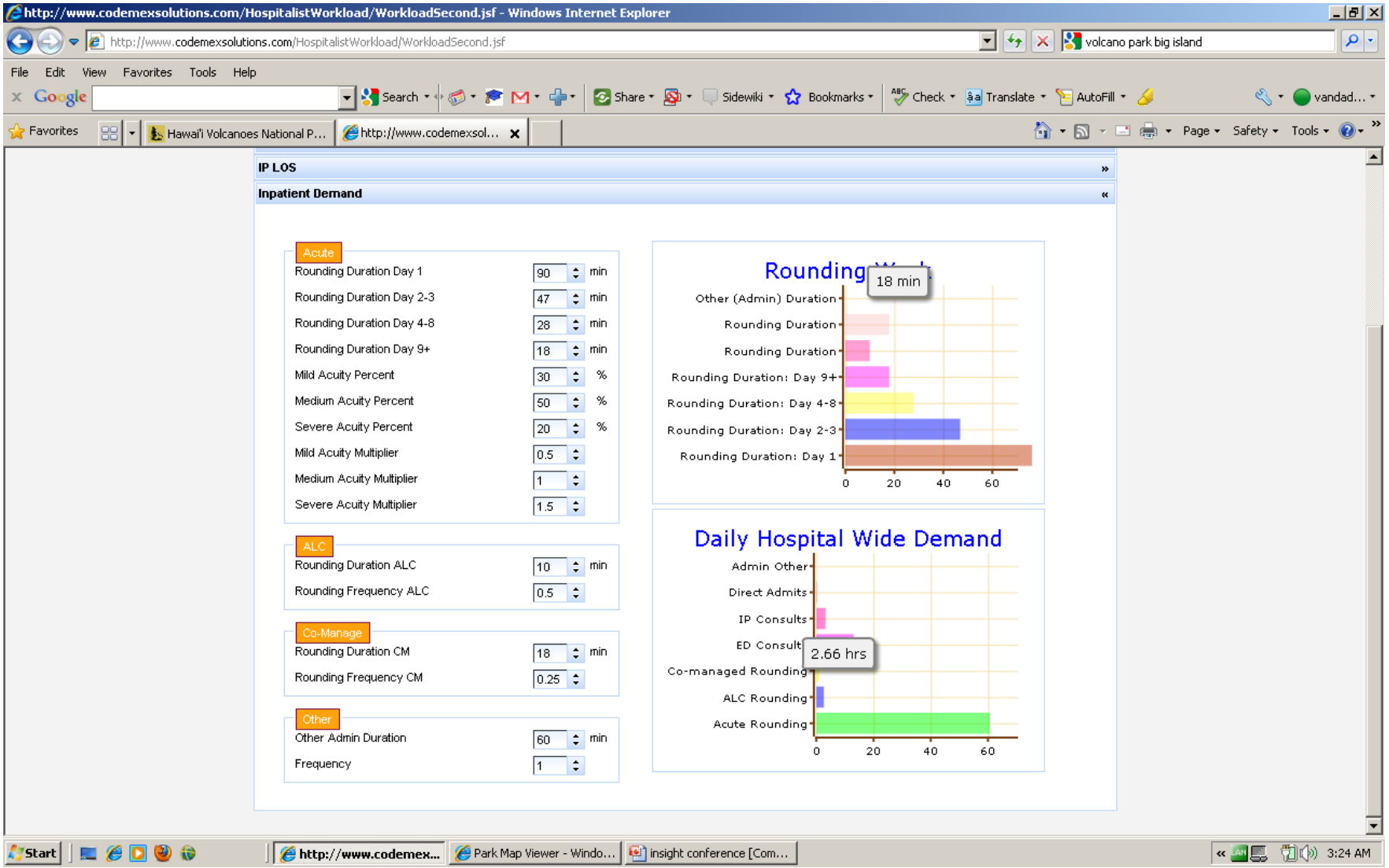

Staffing projections

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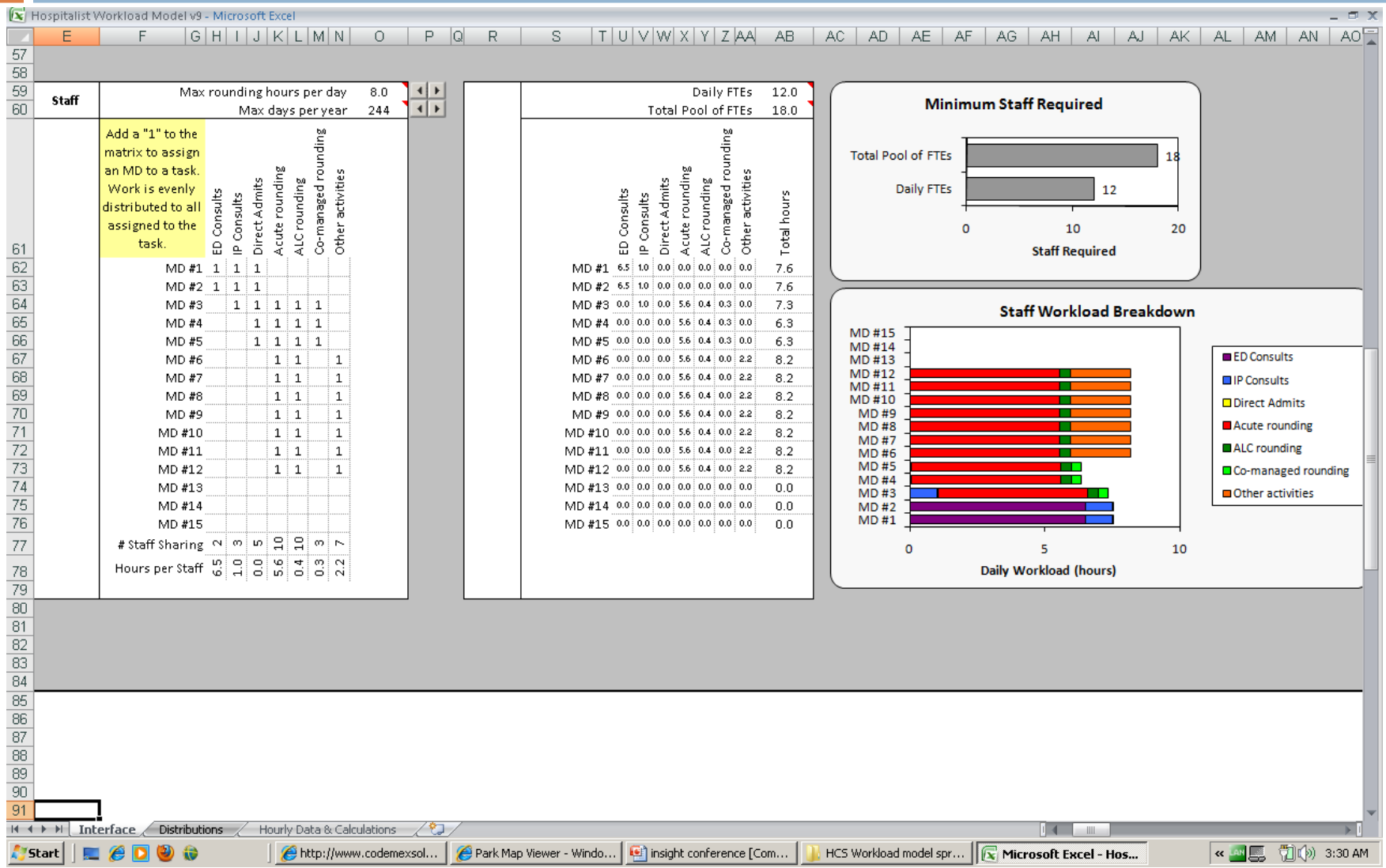

Conclusions

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- Workload measurement is an important and integral part of hospital medicine
- Modeling workload is always based on some underlying assumptions, and it's important to ensure these are valid
- Developing workload models and utilizing them as part of the overall program management can be very useful
- Adding complexity can be hard

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