Optum Insight

Actuarial Internship Reflection

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About Me

- Provider Actuarial Intern
- Greater Seattle, WA area
- California Polytechnic State University, San Luis Obispo (SLO)
- BS Statistics, rising junior
- Tutor, Lifeguard
- Hiking, paddleboarding, guitar, art/photography
- Fun fact: I used to be an architecture major!

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Internship Goals

1. To apply **statistical skills** to **real-world actuarial experience**
   - Working with large datasets
   - Technical skills – SAS, SQL, Excel, Tableau

2. To familiarize with **actuarial, healthcare,** and **payer or provider knowledge** and terms/concepts

3. To build **collaboration, communication,** and **problem-solving** soft skills
   - Research
   - Troubleshooting code
   - Asking good questions
   - Prioritization

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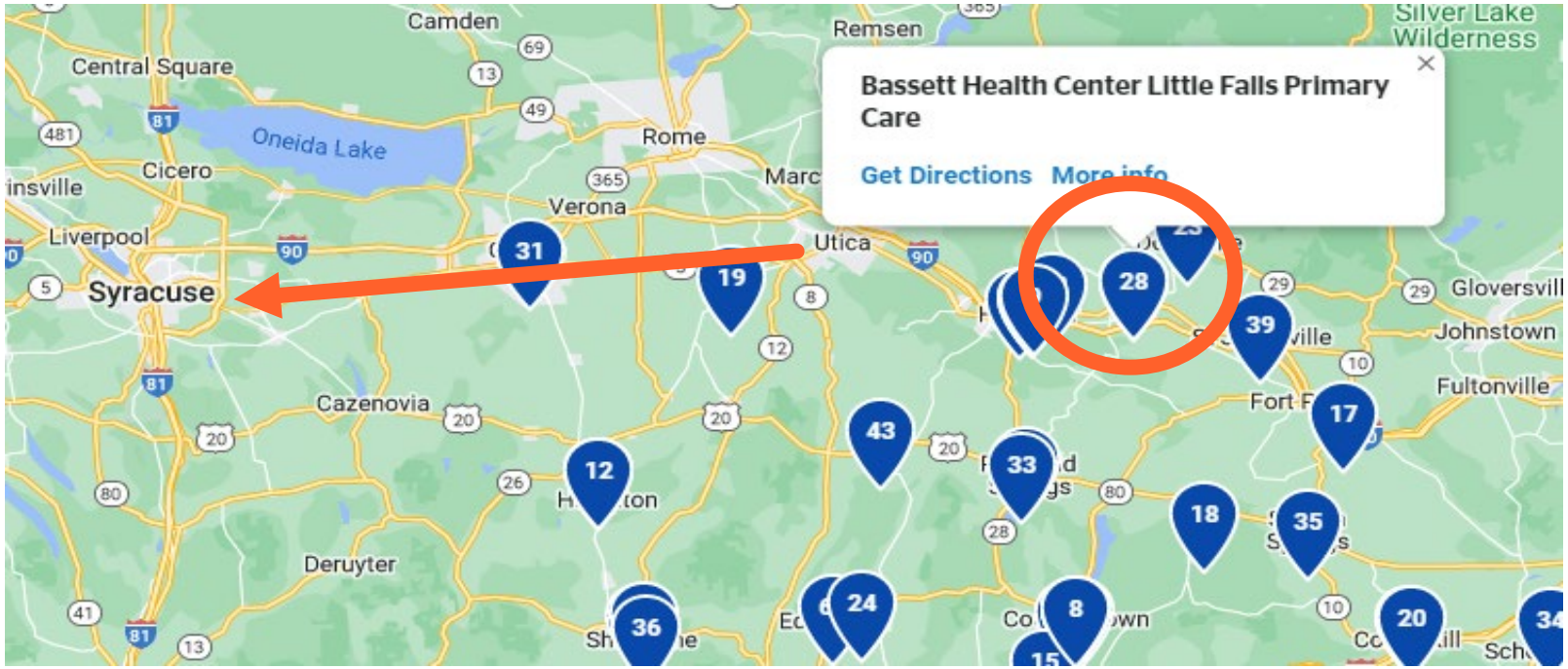
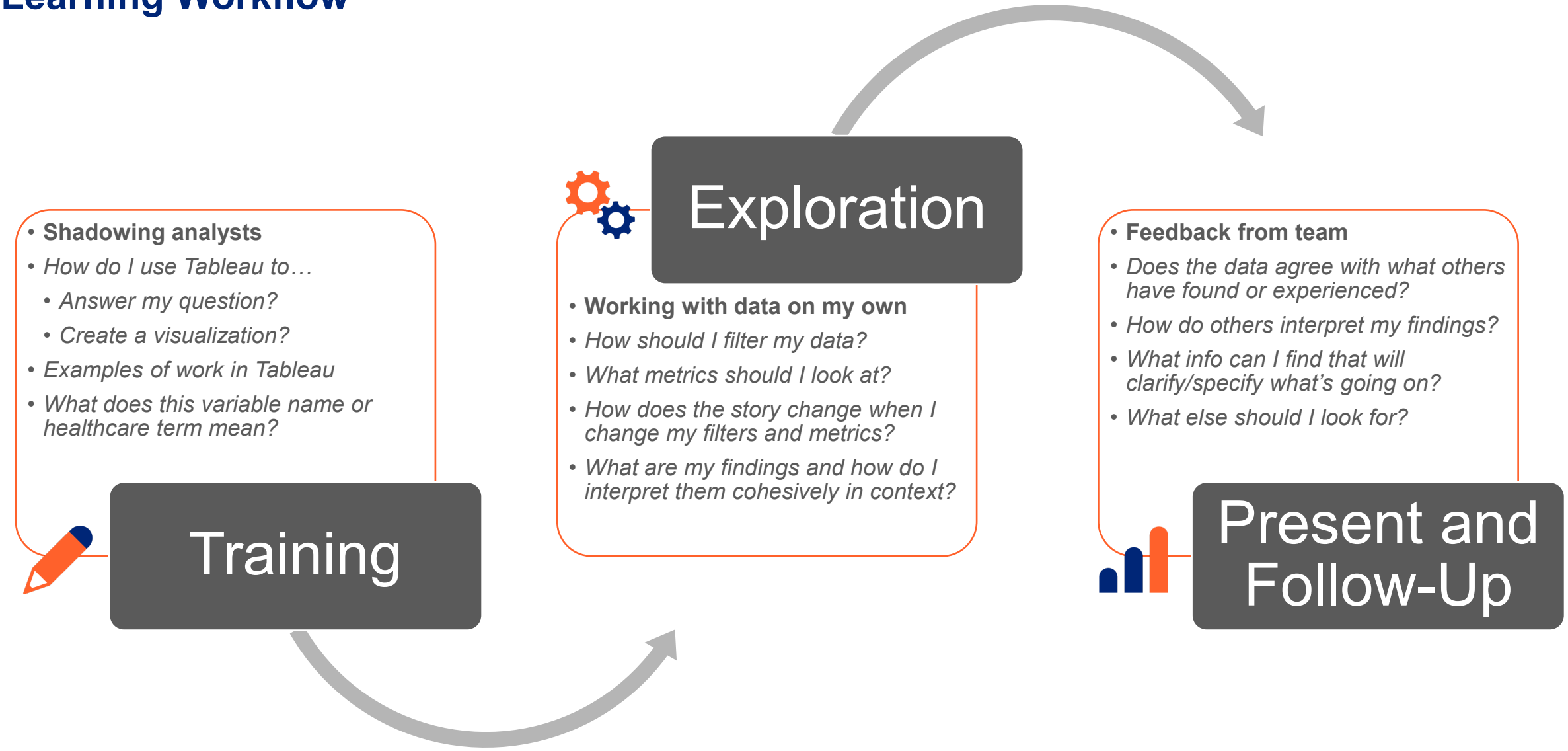
Highlight: Bassett Health Research – ONP Analytics

- Bassett Healthcare Network, NY locations
- Optum Network Planning (ONP) Analytics
- Open-ended exploratory questions
  - “Conversion of Little Falls into a specialty facility; what kind and what’s the impact?”
  - “What type of care is leaving Utica and going to Syracuse?”

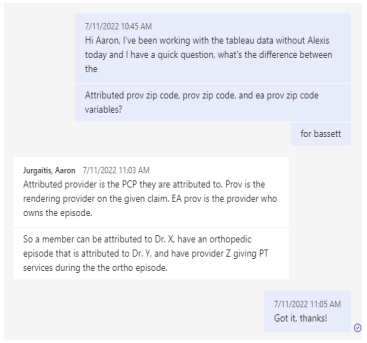


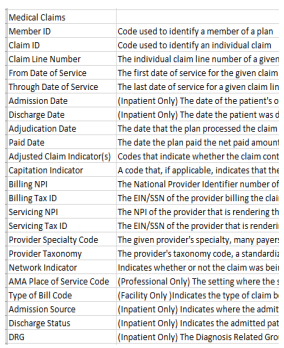
Find Care Locations | Bassett Healthcare Network

Learning Workflow

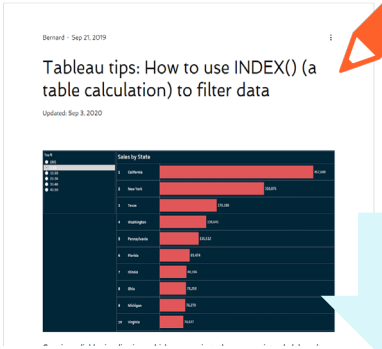


Workflow Example – “What kind of care is leaving Utica for Syracuse?”



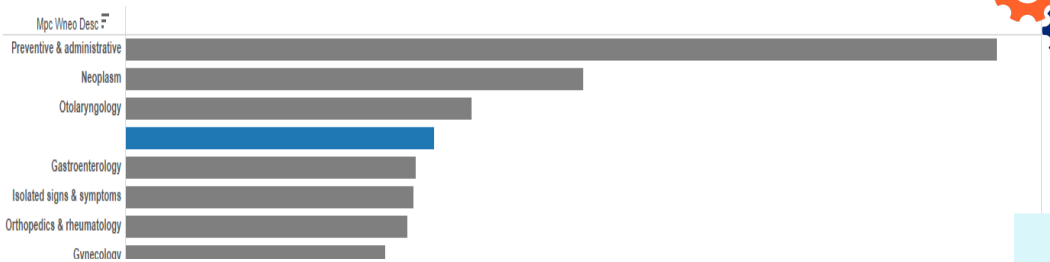


Medical Claims	
Member ID	Code used to identify a member of a plan
Claim ID	Code used to identify an individual claim
Claim Line Number	The individual claim line number of a given
From Date of Service	The first date of service for the given claim
Through Date of Service	The last date of service for a given claim lin
Admission Date	(Inpatient Only) The date of the patient's o
Discharge Date	(Inpatient Only) The date the patient was d
Adjudication Date	The date that the plan processed the claim
Paid Date	The date the plan paid the net paid amount
Adjusted Claim Indicator(s)	Codes that indicate whether the claim cont
Capitation Indicator	A code that, if applicable, indicates that the
Billing NPI	The National Provider Identifier number of
Billing Tax ID	The EIN/SSN of the provider billing the clai
Servicing NPI	The NPI of the provider that is rendering th
Servicing Tax ID	The EIN/SSN of the provider that is renderi
Provider Specialty Code	The given provider's specialty, many payer
Provider Taxonomy	The provider's taxonomy code, a standardiz
Network Indicator	Indicates whether or not the claim was bei
AMA Place of Service Code	(Professional Only) The setting where the s
Type of Bill Code	(Facility Only)Indicates the type of claim b
Admission Source	(Inpatient Only) Indicates where the admit
Discharge Status	(Inpatient Only) Indicates the admitted pat
DRG	(Inpatient Only) The Diagnosis Related Gro



- Ask questions in teams/meetings (e.g. “What is the difference between Attrib Prov, Prov and EA Prov?”)
- Claims data elements cheat sheet

Internet - Online Tableau documentation



- What has highest member count leakage?
- P&A, Neoplasm, Otolaryngology
- Focused on Otolaryngology (ear/nose/throat) – large share of Utica patients

Servic..	Base Etg De..	Prov Full Nm	Cost Category	UticaOrSyracuse Prov / Gender: Syracuse Provider F	Syracuse Provider M	Utica Provide F
Independent Clinical Laboratory	Routine exam	Centrex Clinical Laboratories I..	PROFESSIONAL			12
		Crouse Medical Practice Pllc	PROFESSIONAL	5	2	
		Laboratory Corporation Of Am..	PROFESSIONAL	534		
		Quest Diagnostics Of Pennsyl..	PROFESSIONAL	2	1	
Grand Total				538	3	12

- After feedback, shift focus instead to Preventative & Admin
- Lots of female patients going to LabCorp for routine exams

Tableau Dashboards Example

- "What type of care is leaving Utica and going to Syracuse?"

Total Revenue from Utica to Syracuse by Svc

Mpc W..		Grand Total	INPATIENT	OUTPATIENT	PROFESSIONAL	RX
		Cost Category				
Grand Total	Allw Amt	$14,290,934	$4,708,726	$3,325,419	$4,039,499	$2,217,290
	% of Total Allw Amt along ..	100.00%	32.95%	23.27%	28.27%	15.52%
Neoplasm	Allw Amt	$3,360,778	$1,150,224	$837,874	$1,105,522	$267,158
	% of Total Allw Amt along ..	100.00%	34.22%	24.93%	32.89%	7.95%
Orthopedics & rheumatology	Allw Amt	$2,036,949	$839,396	$390,464	$368,148	$438,941
	% of Total Allw Amt along ..	100.00%	41.21%	19.17%	18.07%	21.55%
Cardiology	Allw Amt	$2,023,651	$1,089,413	$658,905	$226,620	$48,713
	% of Total Allw Amt along ..	100.00%	53.83%	32.56%	11.20%	2.41%
Neurology	Allw Amt	$817,697	$233,896	$73,697	$380,929	$129,175

Total Claims from Utica to Syracuse by Svc

Mpc Wneo Desc		Grand Total	INPATIENT	OUTPATIENT	PROFESSIONAL	RX
		Cost Category				
Grand Total	Count Claims	23,837	177	2,123	14,224	7,314
	% of Total Count Claims along..	100.00%	0.74%	8.91%	59.67%	30.68%
Neoplasm	Count Claims	3,559	29	348	2,772	410
	% of Total Count Claims along..	100.00%	0.81%	9.78%	77.89%	11.52%
Preventive & administrative	Count Claims	2,894		186	2,409	299
	% of Total Count Claims along..	100.00%		6.43%	83.24%	10.33%
Orthopedics & rheumatology	Count Claims	1,732	21	185	1,012	514
	% of Total Count Claims along..	100.00%	1.21%	10.68%	58.43%	29.68%
Endocrinology	Count Claims	1,650	5	158	439	1,048

Total Members from Utica to Syracuse by Svc

Mpc Wneo Desc		Grand Total	INPATIENT	OUTPATIENT	PROFESSIONAL	RX
		Cost Category				
Grand Total	Count Members	4,337	135	694	4,108	1,115
	% of Total Count Members alo..	100.00%	3.11%	16.00%	94.72%	25.71%
Preventive & administrative	Count Members	1,585		151	1,454	78
	% of Total Count Members alo..	100.00%		9.53%	91.74%	4.92%
Neoplasm	Count Members	816	28	140	795	82
	% of Total Count Members alo..	100.00%	3.43%	17.16%	97.43%	10.05%
Otolaryngology	Count Members	568	6	56	499	227
	% of Total Count Members alo..	100.00%	1.06%	9.86%	87.85%	39.96%
	Count Members	523		25	291	256

"Why is there so much P&A migration?"

SyracuseProv: Syracuse
SyracuseEAProv: (All)
UticaMbrs: Utica
UticaAttrib: (All)
Year Flag: (All), Current, Previous

% Inpatient Leakage by Svc

Mpc W..	% of Total Count Members along Table (D.. Syrac..	Utica	% of Total Count Members along Table (A.. Syrac..	Utica
Cardiology	9.63%	12.85%	13.13%	91.92%
Chemical dependency	3.70%	1.84%	33.33%	86.67%
Dermatology	2.96%	1.55%	26.67%	73.33%
Endocrinolo..	2.96%	3.39%	14.81%	88.89%
Gastroenter..	6.67%	12.85%	9.38%	94.79%
Gynecology	1.48%	0.56%	40.00%	80.00%
Hematology	0.74%	0.99%	12.50%	87.50%
Hepatology	2.96%	4.52%	11.76%	94.12%
Infectious diseases	0.74%	1.84%	7.14%	92.86%
Isolated signs & symptoms		0.14%		######
Late effects, e nvironmenta..	0.74%	1.69%	8.33%	######
Neonatology	0.74%	3.81%	3.57%	96.43%
Nephrology		1.41%		######
Neurology	3.70%	7.34%	8.93%	92.86%
Obstetrics	17.04%	21.61%	13.22%	87.93%
Ophthalmolo..	1.48%	0.28%	50.00%	50.00%
Orthopedics & rheumatol..	13.33%	8.19%	25.00%	80.56%
Otolaryngolo..	4.44%	0.85%	60.00%	60.00%
Psychiatry	2.22%	4.66%	8.57%	94.29%
Pulmonology	8.15%	10.17%	14.10%	92.31%
Urology	2.22%	2.82%	13.64%	90.91%
Grand Total	######	######	16.77%	87.95%

% Specialty Leakage by Svc

Mpc W..	% of Total Count of Spec Prob Ofc Visits.. Syrac..	Utica	% of Total Count of Spec Prob Ofc Visits.. Syrac..	Utica
Cardiology	3.86%	12.88%	7.56%	92.44%
Chemical dependency	0.81%	1.11%	16.67%	83.33%
Dermatology	4.66%	7.70%	14.21%	85.79%
Endocrinolo..	4.15%	10.62%	9.66%	90.34%
Gastroenter..	5.73%	5.91%	20.95%	79.05%
Gynecology	8.58%	3.35%	41.21%	58.79%
Hematology	1.59%	1.59%	42.11%	57.89%
Hepatology	0.45%	0.61%	16.67%	83.33%
Infectious diseases	1.58%	1.21%	26.24%	73.76%
Isolated signs & symptoms	0.00%	1.45%	5.45%	94.55%
Late effects, e nvironmenta..	0.23%	0.10%	39.29%	60.71%
Neonatology	0.38%	0.02%	81.82%	18.18%
Neoplasm	13.67%	10.71%	25.88%	74.12%
Nephrology	0.21%	0.32%	15.38%	84.62%
Neurology	3.41%	1.73%	33.03%	66.97%
Obstetrics	2.83%	1.39%	38.46%	61.54%
Ophthalmolo..	1.99%	0.28%	50.00%	50.00%
Orthopedics & rheumatol..	9.50%	7.26%	26.36%	73.64%
Otolaryngolo..	13.93%	8.87%	30.03%	69.97%
Preventive & administrative	9.20%	9.28%	21.33%	78.67%
Psychiatry	5.77%	9.50%	14.25%	85.75%
Pulmonology	3.24%	2.89%	23.42%	76.58%
Urology	3.79%	1.09%	48.63%	51.37%
Grand Total	######	######	21.47%	78.53%

% PCP Leakage by Svc

Mpc W..	% of Total Count of PCP Prob Ofc Visits.. Syrac..	Utica	% of Total Count of PCP Prob Ofc Visits.. Syrac..	Utica
Cardiology	18.99%	13.09%	8.19%	91.81%
Chemical dependency	2.85%	0.86%	16.98%	83.02%
Dermatology	1.90%	12.55%	0.92%	99.08%
Endocrinolo..	11.08%	10.49%	6.10%	93.90%
Gastroenter..	7.59%	4.03%	10.39%	89.61%
Gynecology	0.95%	0.82%	6.67%	93.33%
Hematology	1.45%	1.45%	36.36%	63.64%
Hepatology	0.00%	0.11%	0.00%	######
Infectious diseases	1.90%	1.44%	7.50%	92.50%
Isolated signs & symptoms	0.00%	0.00%	11.11%	88.89%
Late effects, e nvironmenta..	0.00%	0.14%	0.00%	######
Neonatology	2.53%	0.08%	66.67%	33.33%
Neoplasm	13.29%	6.21%	11.63%	88.37%
Nephrology	1.27%	0.39%	16.67%	83.33%
Neurology	3.16%	1.54%	4.82%	95.18%
Obstetrics	2.53%	0.19%	44.44%	55.56%
Ophthalmolo..	0.00%	1.69%	0.00%	######
Orthopedics & rheumatol..	5.06%	7.57%	3.95%	96.05%
Otolaryngolo..	3.80%	19.40%	1.19%	98.81%
Preventive & administrative	5.70%	1.87%	15.79%	84.21%
Psychiatry	6.96%	6.54%	6.15%	93.85%
Pulmonology	6.33%	7.53%	4.91%	95.09%
Urology	0.63%	2.22%	1.72%	98.28%
Grand Total	######	######	5.79%	94.21%

"Why is neonatology leakage high, but makes up a small percentage of Syracuse care?"

"Why is nephrology leakage so low?"

UticaOrSyracuse Prov: (Multiple values)
UticaOrSyracuse EAProv: (All)
UticaMbrs: Utica
UticaAttrib: (All)
Year Flag: (All), Current, Previous

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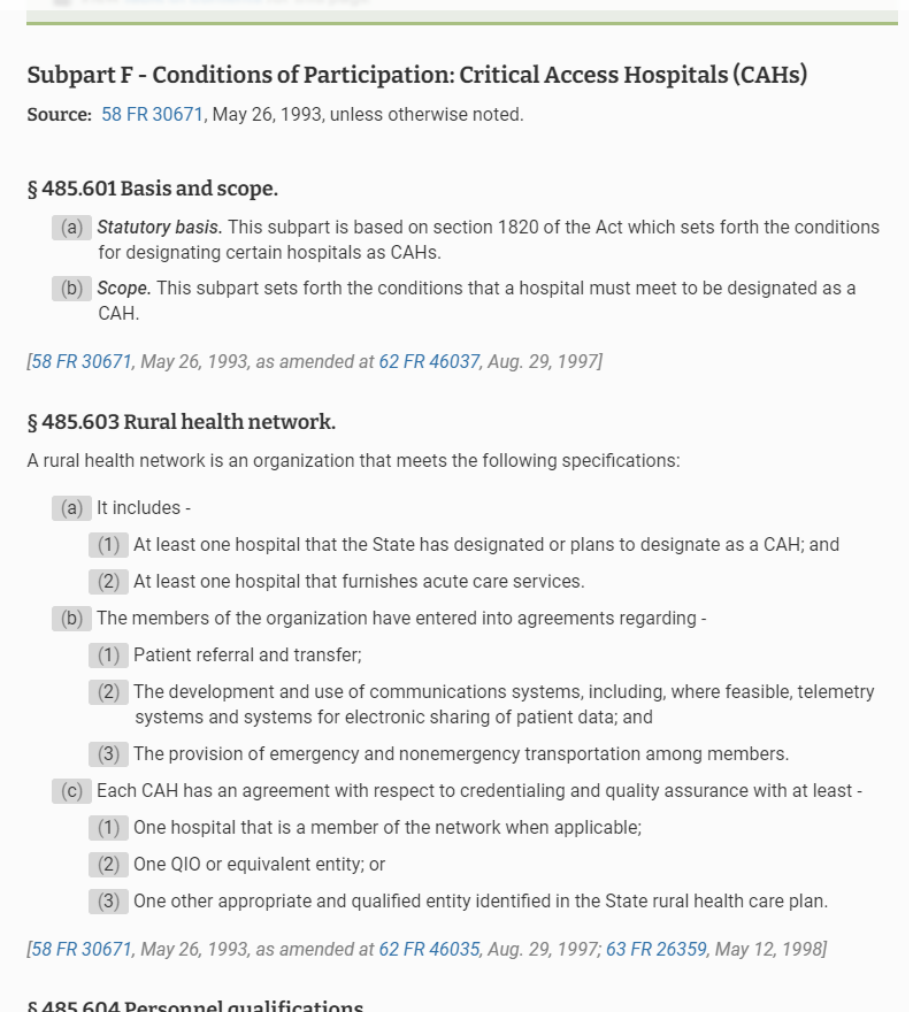
Research Example

- “Conversion of Little Falls into a specialty facility; what kind and what’s the impact?”
- Little Falls Hospital is a **Critical Access Hospital (CAH)**
  - Centers for Medicare and Medicaid Services (CMS) program
  - Incentivize rural hospitals to stay open
  - Must provide acute/inpatient and emergency services
  - Must be 15-35 mi away from other clinics, depending on terrain
  - Limits inpatient beds, length of stay



Subpart F - Conditions of Participation: Critical Access Hospitals (CAHs)

Source: 58 FR 30671, May 26, 1993, unless otherwise noted.

§ 485.601 Basis and scope.

(a) *Statutory basis.* This subpart is based on section 1820 of the Act which sets forth the conditions for designating certain hospitals as CAHs.

(b) *Scope.* This subpart sets forth the conditions that a hospital must meet to be designated as a CAH.

[58 FR 30671, May 26, 1993, as amended at 62 FR 46037, Aug. 29, 1997]

§ 485.603 Rural health network.

A rural health network is an organization that meets the following specifications:

(a) It includes -

(1) At least one hospital that the State has designated or plans to designate as a CAH; and

(2) At least one hospital that furnishes acute care services.

(b) The members of the organization have entered into agreements regarding -

(1) Patient referral and transfer;

(2) The development and use of communications systems, including, where feasible, telemetry systems and systems for electronic sharing of patient data; and

(3) The provision of emergency and nonemergency transportation among members.

(c) Each CAH has an agreement with respect to credentialing and quality assurance with at least -

(1) One hospital that is a member of the network when applicable;

(2) One QIO or equivalent entity; or

(3) One other appropriate and qualified entity identified in the State rural health care plan.

[58 FR 30671, May 26, 1993, as amended at 62 FR 46035, Aug. 29, 1997; 63 FR 26359, May 12, 1998]

§ 485.604 Personnel qualifications

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Ongoing Findings Summary

- What kind of specialty facility should Little Falls Hospital be converted to?
  - CAH Restrictions
  - Nephrology (kidney) care – dialysis center in Little Falls

- What type of care is leaving Utica and going to Syracuse?
  - Most revenue – Neoplasm, Orthopedics, Cardiology
  - Most members – P&A, Neoplasm, Otolaryngology
  - Lots of female patients going to LabCorp for routine gyno/cervical exams
  - Utica has lots of dialysis centers – low nephrology leakage

Project Takeaways

- **Open-ended dataset exploration**
  - Tableau
  - ONP Analytics
- **Current Market Research**
  - CMS Programs (e.g., Critical Access Hospitals)
  - New York provider landscape
- **Learning/researching healthcare terms**
  - Service lines (Orthopedics, Neoplasm, Cardiology, etc.)
  - Care types (Inpatient, Outpatient, Acute, Facility, Specialty, Primary, etc.)
  - Claims and enrollment data elements
- **Soft skills:** Listening, collaborating, posing questions and follow-ups, researching

Other Project Involvement/Takeaways

Project Description	Statistical/Data Exploration	Healthcare Concepts Learning + Research	Soft Skills
Boston Children's Hospital Rare Childhood Conditions	NHI Data, SAS/SQL, Excel	Dx/Px codes, Facility vs Physician claims Claims data elements	Troubleshooting code, Asking clarifying questions
Boulder Community Health PCF Dashboard	SAS/SQL, Tableau	Primary Care First program Quarterly adjustments Market scan, capitation	Asking clarifying questions, Task learning and repetition, Troubleshooting code
CMS Oncology Research	PowerPoint	CMS oncology programs	Online research and reading critically
University Healthcare Alliance Care Management Research	SAS/SQL, Excel CCLF Data Propensity Matching	Care management measurement methods, CCLF analysis	Online research and reading critically Asking clarifying questions

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Questions?