

Co-Existing with COVID-19

FINANCIAL EXECUTIVES INTERNATIONAL
November 18, 2020

AGENDA

- **Who We Are**
- **What is Happening and Why**
- **Critical Data that We Use in Co-Existing with COVID-19**
- **Most Recent Hospitalization Modeling for Bellin's Service Area**
- **Critical Guiding Principles that translates to any Business**
- **Latest update on a COVID-19 vaccine**

WHO WE ARE

Bellin Health provides quality healthcare to the residents of a 12-county area covering northeastern Wisconsin and the Upper Peninsula of Michigan.

- Approximately \$800 Million in Assets and \$700 Million in Total Revenue
- 80% of our revenue is derived from outpatient and clinic services

BELLIN MEMORIAL HOSPITAL

- 166-bed acute care multi-specialty hospital; known as the region's heart center, it was the first hospital in the area to offer a comprehensive heart program

BELLIN HEALTH OCONTO HOSPITAL

- 10-bed critical access hospital
- Ambulatory Surgery Center located in Marinette

BELLIN PSYCHIATRIC CENTER

- 66-bed freestanding hospital; the Center's team of professionals treats children, adolescents, and adults with emotional and/or addictive disorders

BELLIN MEDICAL GROUP

- Employs approximately 175 physicians (primary care and specialty) in 42 locations

BELLIN HEALTH FOUNDATION

- \$6.0 million in assets as of September 30, 2020 for the benefit of the organization

BELLIN COLLEGE

- Offers a 4-year degree for students pursuing a Bachelor of Science in Nursing, a Master of Science in Nursing, a Bachelor of Science in Radiologic Technology, and a Doctorate of Science in Physical Therapy
- Medical College of Wisconsin now on Bellin College Campus

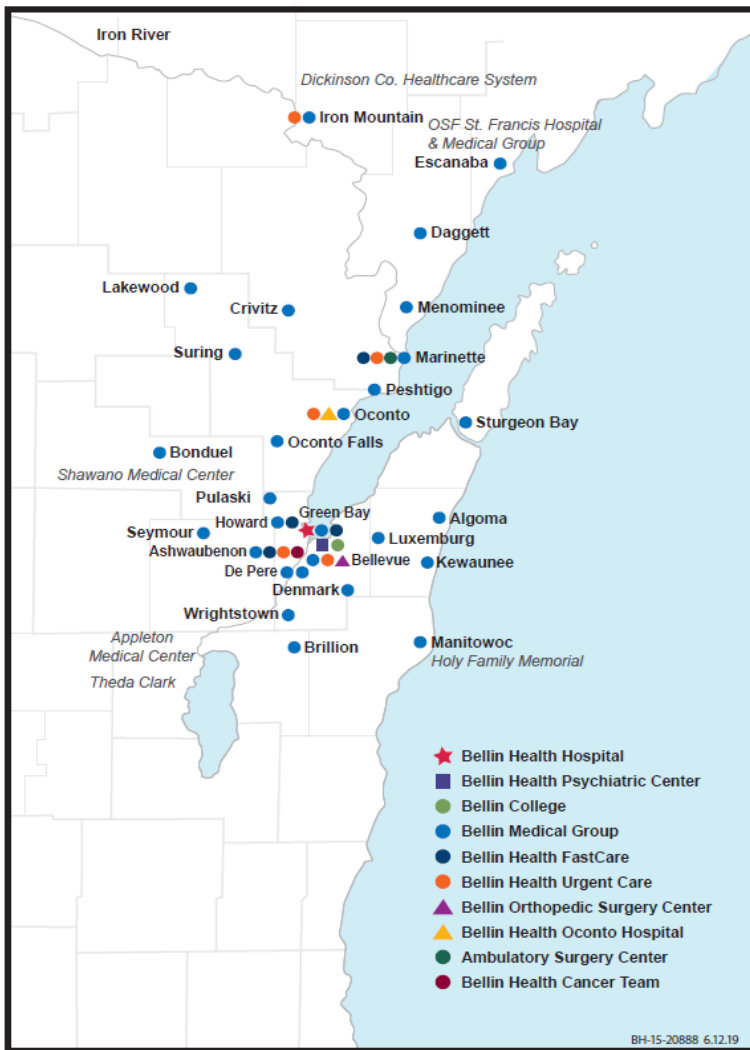
ABOUTHEALTH

- Statewide network involving 4 other healthcare organizations: Aspirus, Gundersen Health System, ProHealth Care, and ThedaCare developed to build upon and advance the clinical quality, efficiency, and customer appreciation

BELLIN HEALTH PARTNERS

- Local, clinically integrated network which includes one independent health system (Holy Family Memorial)
- Participating in Next Generation Medicare ACO
- Multiple Commercial ACO Agreements

FACILITY LOCATIONS



- Bellin has 42 locations spread across the 12-county region.
- Many primary care clinic locations include therapy services, as well as, specialty physician clinic services.

WHAT IS HAPPENING?

A



Popular

Latest

The Atlantic

SCIENCE

Wisconsin Is on the Brink of a Major Outbreak

The state's coronavirus cases and hospitalizations are at an all-time high.

ROBINSON MEYER SEPTEMBER 26, 2020

- Wisconsin has crashed through its own coronavirus records, reporting more cases and more COVID-19 hospitalizations than it has at any time since the pandemic began, according to the COVID Tracking Project at *The Atlantic*. It now ranks among the top states in new cases per capita, according to the Centers for Disease Control and Prevention, and it is reporting more new cases, in absolute terms, than all states but California, Texas, and Florida.

WHY IS IT GOING ON?

Virus Fatigue

- Weddings
- Funerals
- Social Gatherings
- Events

“And then people are going to say, ‘Well, you know, I was at dinner two nights ago and I was fine. I can go to this gathering of 30 people.’ Then ‘I can go to the gathering of 100 people.’ And it will probably be just kind of a slow ... change of opinion about what the risks are.” - Harvard epidemiologist Michael Mina

COVID-19 DATA BELLIN CLOSELY MONITORS

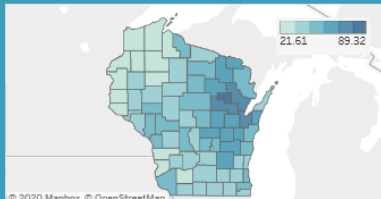
COVID-19 Situational Awareness Update



Choose your Healthcare Emergency Readiness Coalition region (HERC)

134
total hospitals

Cases Per 1,000 People



© 2020 Mapbox © OpenStreetMap
Data last updated: 11/9/2020 3:00:30 PM. County population is from the 2018 five-year estimate from the American Community Survey.

Hospital Admissions

	Current	1 day Δ	7 day Δ
Total COVID-19 Patients	2,003	143	355
ICU COVID-19 Patients (included in total COVID-19 patient count above)	396	-1	44

Data last updated: 11/9/2020 3:30:19 PM

Hospitals with Less Than 7 Days PPE

	Current	1 day Δ	7 day Δ
Goggles	8	0	0
N95 Masks	5	0	1
Gowns	25	0	-2
Paper Medical Masks	13	0	1

Data last updated: 011/9/2020 3:30:19 PM
On Aug 13, federal changes revised PPE reporting narrowing this metric from "7 Days or Less" to "Less than 7 Days."

COVID-19 Tests and Deaths

Total Positive Tests	271,770
Total Negative Tests	1,926,518
Total Positive Tests - 24 Hour Δ	4,360
Total Negative Tests - 24 Hour Δ	9,717
Total Deaths	2,329
Total Deaths - 24 Hour Δ	17

Data Last Updated: 11/9/2020 3:00:23 PM

Bed Count

	Beds Immediately Available	Total Beds
ICU	163	1,469
Intermediate Care	51	809
Medical Surgical	602	7,065
Neg Flow Isolation	528	1,869

Data last updated: 11/9/2020 3:30:19 PM

Ventilator Availability

Total Mechanical Ventilators	2,334
Ventilated Patients (All)	574

Data last updated: 11/9/2020 3:30:19 PM

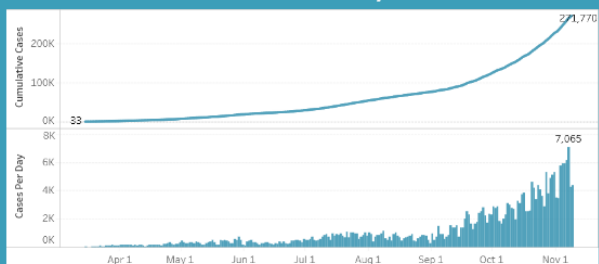
Key Takeaways:

- Data is pulled from a combination of Wisconsin Department of Health and Human Services and daily electronically Hospital submitted data
- Typically updated everyday between 3pm and 4pm

Source: www.wha.org/covid-19Update

COVID-19 DATA BELLIN CLOSELY MONITORS

Positive COVID-19 Cases Identified Per Day and Cumulative



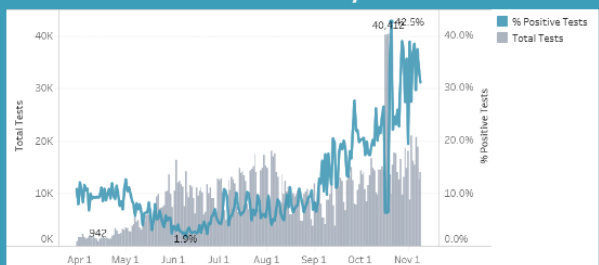
Data last updated: 11/9/2020 3:00:23 PM

Total COVID-19 Patients Hospitalized Per Day



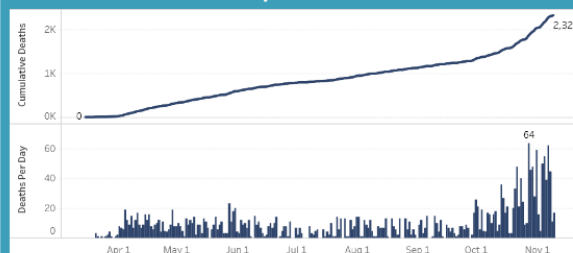
Data last updated: 11/9/2020 3:30:19 PM. Implementation of federally-mandated changes to data reporting caused a temporary gap in some data displays for late July.

% Positive Tests and Total Tests Per Day



Data last updated: 11/9/2020 3:00:23 PM

Deaths from COVID-19 Per Day and Cumulative



Data last updated: 11/9/2020 3:00:23 PM

Key Takeaways:

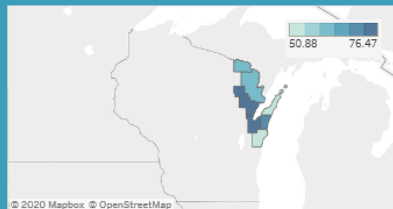
- It took seven months to get to the first 100,000 positive tests. It took five weeks to get to the second 100,000 positive tests.
- Positivity rate on a daily basis has increased.
- Hospitalizations and deaths have significantly increased.

Source: www.wa.gov/covid-19update

COVID-19 DATA BELLIN CLOSELY MONITORS

Choose your Healthcare Emergency Readiness Coalition region (HERC)
 Northeast **10** total hospitals

Cases Per 1,000 People



Data last updated: 11/16/2020 3:00:59 PM. County population is from the 2018 five-year estimate from the American Community Survey.

Hospital Admissions

	Current	1 day Δ	7 day Δ
Total COVID-19 Patients	207	29	22
ICU COVID-19 Patients (included in total COVID-19 patient count above)	47	-6	1

Data last updated: 11/16/2020 3:30:55 PM

Hospitals with Less Than 7 Days PPE

	Current	1 day Δ	7 day Δ
Goggles	1	0	0
N95 Masks	1	0	0
Gowns	1	0	-1
Paper Medical Masks	1	0	-1

Data last updated: 011/16/2020 3:30:55 PM
 On Aug 13, federal changes revised PPE reporting narrowing this metric from "7 Days or Less" to "Less than 7 Days."

COVID-19 Tests and Deaths

Total Positive Tests	32,398
Total Negative Tests	166,657
Total Positive Tests - 24 Hour Δ	142
Total Negative Tests - 24 Hour Δ	552
Total Deaths	227
Total Deaths - 24 Hour Δ	0

Data Last Updated: 11/16/2020 3:01:04 PM

Bed Count

	Beds Immediately Available	Total Beds
ICU	13	207
Intermediate Care	8	33
Medical Surgical	71	462
Neg Flow Isolation	60	254

Data last updated: 11/16/2020 3:30:55 PM

Ventilator Availability

Total Mechanical Ventilators	215
Ventilated Patients (All)	43

Data last updated: 11/16/2020 3:30:55 PM

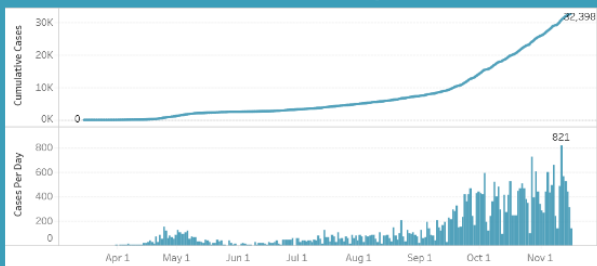
Key Takeaways:

- Bellin closely looks and the regional data. The Green Bay Hospitals share hospitalization data on a daily basis.
- You can review each regions data in the State.

Source: www.wha.org/covid-19Update

COVID-19 DATA BELLIN CLOSELY MONITORS

Positive COVID-19 Cases Identified Per Day and Cumulative



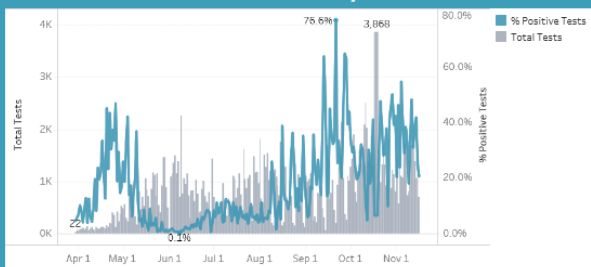
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Total COVID-19 Patients Hospitalized Per Day



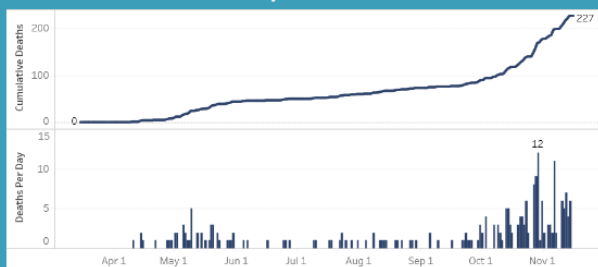
Data last updated: 11/16/2020 3:30:55 PM. Implementation of federally-mandated changes to data reporting caused a temporary gap in some data displays for late July.

% Positive Tests and Total Tests Per Day



Data last updated: 11/16/2020 3:01:04 PM

Deaths from COVID-19 Per Day and Cumulative



Data last updated: 11/16/2020 3:01:04 PM

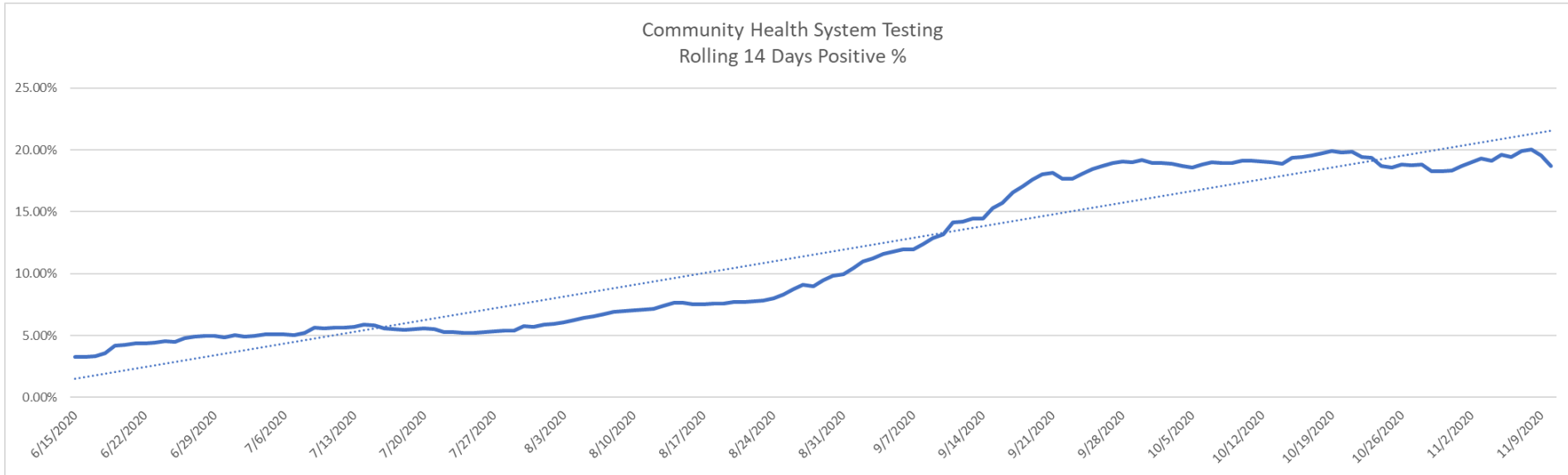
Key Takeaways:

- Positivity rate escalated earlier in September than other parts of the state.
- As a result, hospitalizations escalated faster.
- Expect to see positivity rates to likely go up due to more testing.

Source: www.wa.gov/covid-19update

ROLLING 14 DAYS POSITIVITY RATE

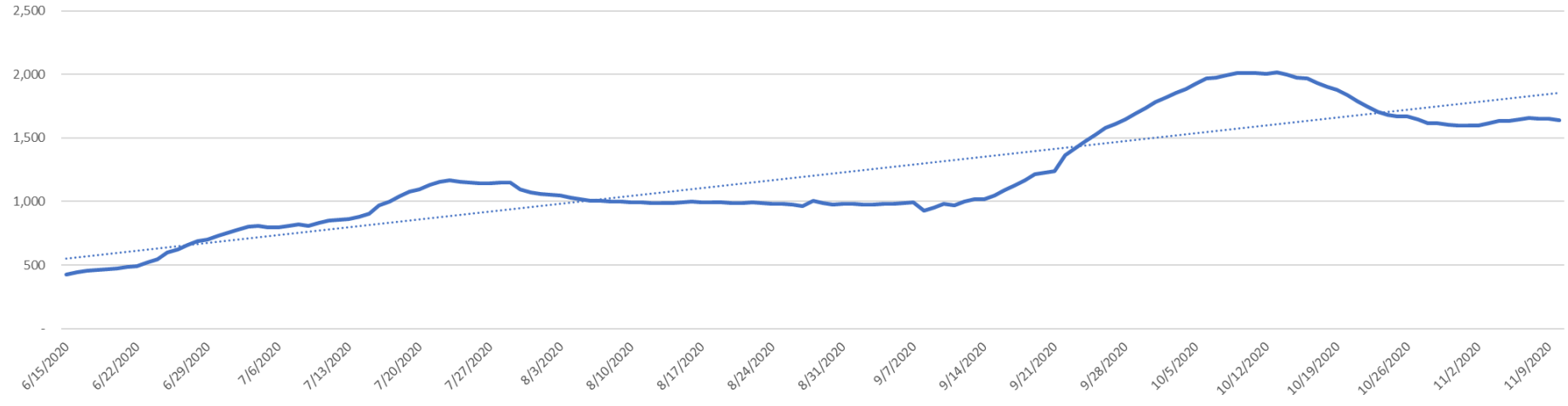
Community Health System Testing
Rolling 14 Days Positive %



Note: The above chart is a rolling 14 day average. Each date contains the average number of positives for a 14 day period.

TOTAL COVID TESTS PERFORMED LAST 14 DAYS

Community Health System Testing
Rolling 14 Days Total Tests Performed



Note: The above chart is a rolling 14 day average. Each date contains the average number of tests for a 14 day period.

COVID Snapshot

What is measured?

7 day average infections per 100,000 people

Risk Levels

Green = < 1 / Day

Yellow = 1 – 10 / Day

Orange = 10-25 / Day

Red = > 25 / Day

Baseline on 9/30/2020

United States = 13.5 (Orange)

Wisconsin = 34.7 (Red)

Brown County = 77.2 (Red)

Source:

Brown School of Public Health. How Severe Is the Pandemic Where You Live? globalepidemics.org/key-metrics-for-covid-suppression/.

November 15, 2020

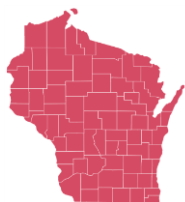
United States = 45.5 (RED)

37 states (74%) = Red

Wisconsin = 117.9 (RED)

72 counties (100%) = Red

Brown County = 104.1 (RED)



November 1, 2020

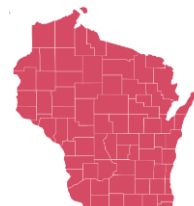
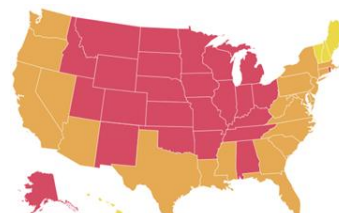
United States = 23.6 (Orange)

26 states (52%) = Red

Wisconsin = 75.8 (Red)

72 counties (100%) = Red

Brown County = 95.0 (Red)



October 18, 2020

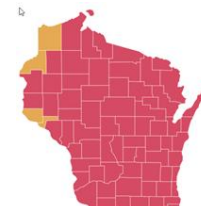
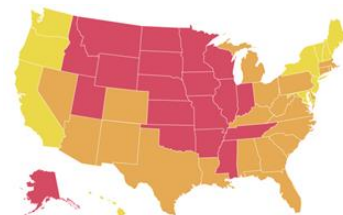
United States = 16.3 (Orange)

15 states (30%) = Red

Wisconsin = 51.3 (Red)

68 counties (94.4%) = Red

Brown County = 80.9 (Red)



COVID Snapshot

Wisconsin

Age Group	WI Population	% of Population	WI Total Infections	% of Total Infections	WI Hospitalizations	% of Hospitalizations	Hospitalizations / *Adjusted Infections	WI Deaths	Deaths / Hospitalizations
Under 20	1,445,269	25.0%	42,371	14.8%	336	2.5%	0.9%	-	0.0%
20-29	763,697	13.2%	59,480	20.8%	712	5.3%	1.4%	12	1.7%
30-49	1,428,630	24.7%	84,755	29.6%	1,993	14.8%	2.8%	76	3.8%
50-69	1,525,044	26.4%	73,652	25.8%	4,603	34.1%	7.4%	493	10.7%
70+	615,754	10.7%	25,633	9.0%	5,863	43.4%	27.2%	1,876	32.0%
Total	5,778,394	100.0%	285,891	100.0%	13,507	100.0%	5.5%	2,457	18.2%

Bellin Service Area

Age Group	Total Population	% of Population	Total Infections	% of Total Infections	Number of infections last 7 Days	% of Infections last 7 Days	*Est % Cases Requiring Hospitalization	*Est % of Population with Reported Infection
Under 20	134,622	24.5%	4,694	12.8%	587	15.0%	0.9%	3.5%
20-29	64,407	11.7%	6,733	18.3%	607	15.5%	1.4%	10.5%
30-49	132,317	24.1%	11,110	30.2%	1,193	30.4%	2.8%	8.4%
50-69	153,179	27.9%	10,671	29.0%	1,118	28.5%	7.4%	7.0%
70+	64,740	11.8%	3,605	9.8%	414	10.6%	27.2%	5.6%
Total	549,266	100.0%	36,813	100.0%	3,919	100.0%	5.5%	6.7%

Key Takeaways:

Approx. 1 in 3 reported positives in the over 70 population are hospitalized

Approx. 1 in 3 hospitalization in the over 70 population ends in death

Total positives / total population in Bellin Service Area = 6.7% (estimated % of population with reported infection)

Another week of record breaking positives in Bellin Service Area

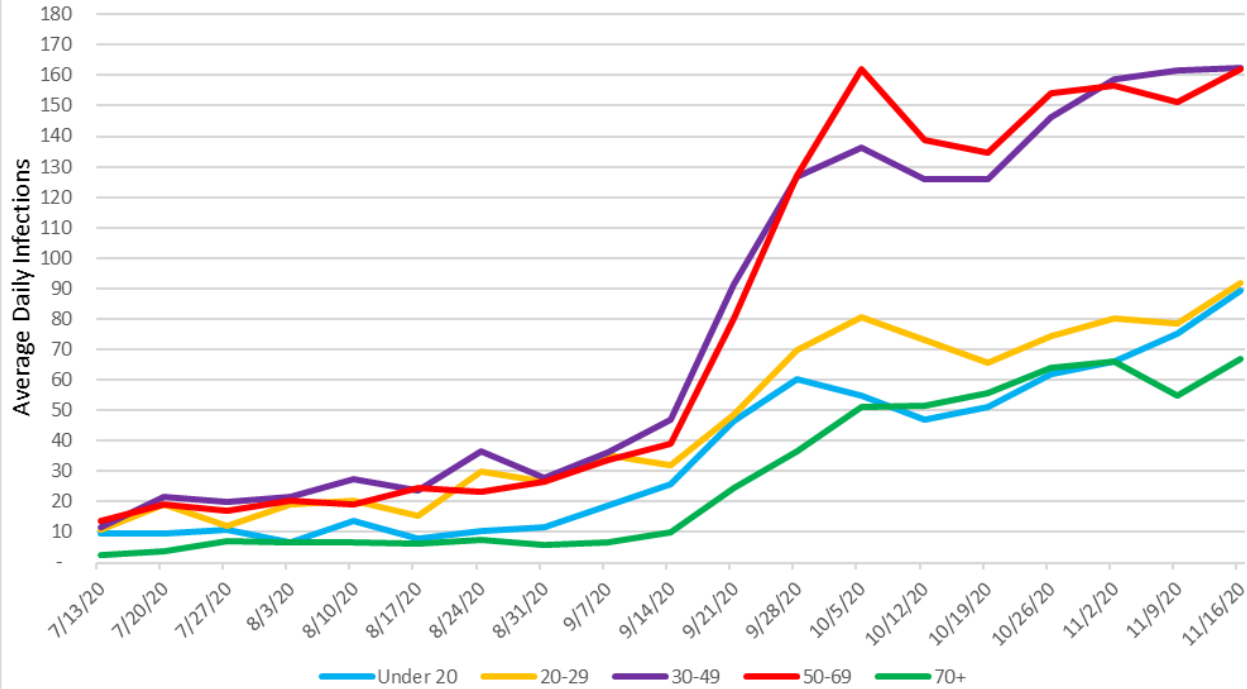
Data from Wisconsin Department of Health Services as of November 11, 2020

Term description and assumption logic in Appendix

Wisconsin Department of Health Services: 7 Day Trend by Age

COVID-19 in Bellin Service Area: 7 Day Trending Positive Tests by Age Group

**Data from Wisconsin Department of Health Services*



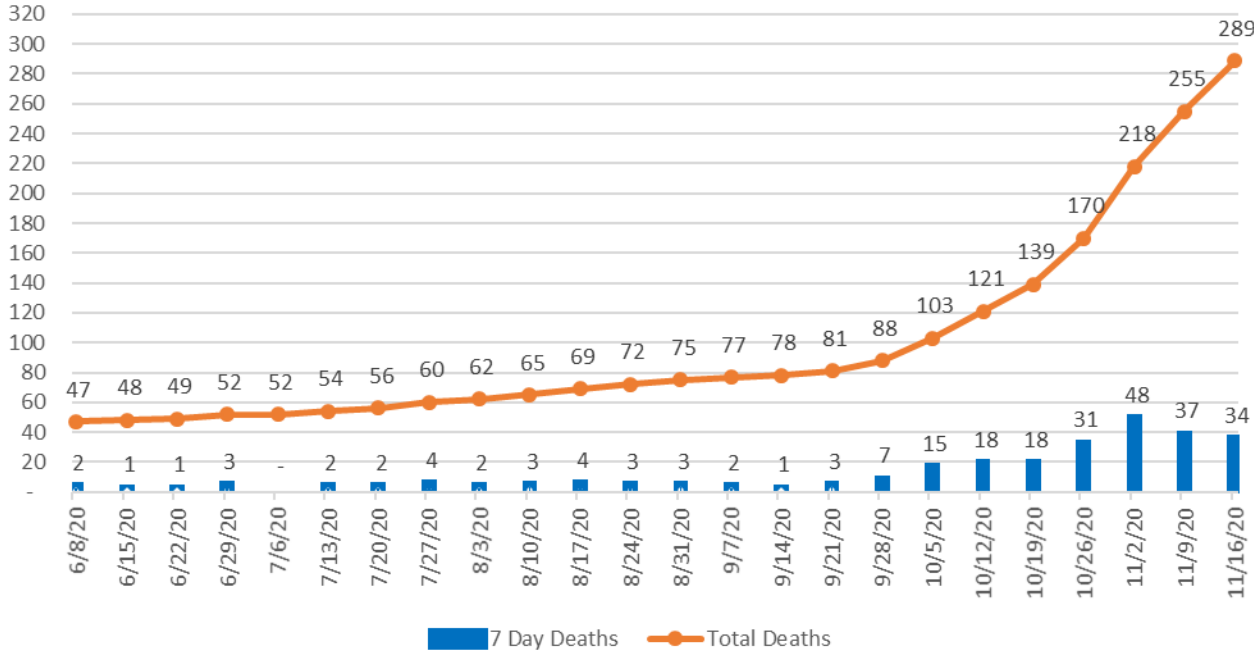
Key Takeaways:

- No single age demographic the cause of the overall numbers
- Distribution generally representative: younger portion of population accounts for lesser share of reported positives (further detail in appendix)

Wisconsin Department of Health Services: Total COVID Deaths

COVID-19 Bellin Service Area: 7 Day Total Deaths

*Data from Wisconsin Department of Health Services & Wisconsin Census Data



Key Takeaways:

- All data from the Wisconsin Department of Health Services
- **9/30 = 94 deaths**
- **11/16 = 289 deaths**

THE FACES OF COVID



Jessica Landry, RN-ICU “We Got This” - Poem

MODELING HOSPITALIZATIONS: BELLIN SERVICE AREA

A chart was shared during Jim Dietsche's livestream presentation, but could not be included within his presentation handouts.

Key Takeaways:

- Assumptions updated 11/13/2020 to account for positivity rates, awareness, cold weather, holidays
- Trending between LOW and MID estimate

This is a Projection and is based on current assumptions as of the date of this presentation. A projection is only as good as the assumptions within the model. The model is frequently updated based on new data points.

KEY GUIDING PRINCIPLES

In February 2020, Bellin's Incident Command Team developed the following guiding principles which still serve us today:

- **Safety of Team**
- **Safety Of the People we Serve**
- **Managing Care Delivery – Which Became Co-Exist with Covid-19**
- **Develop Internal and External Communication and be Transparent**
- **Coordinate with Local, County, Regional, State and Federal authorities**

BALANCING THE OPERATIONAL CHALLENGES

Listen

- Voice of the Frontline Staff and Providers
- Voice of the Support Teams to Work from Home
- Providers and Leadership developed a Medical Branch of Incident Command and guided the Organization on critical clinical decisions
- Voice of the Community – requests for community testing
- Voice of Employers – development of an Employer Town Hall Forum

Learn

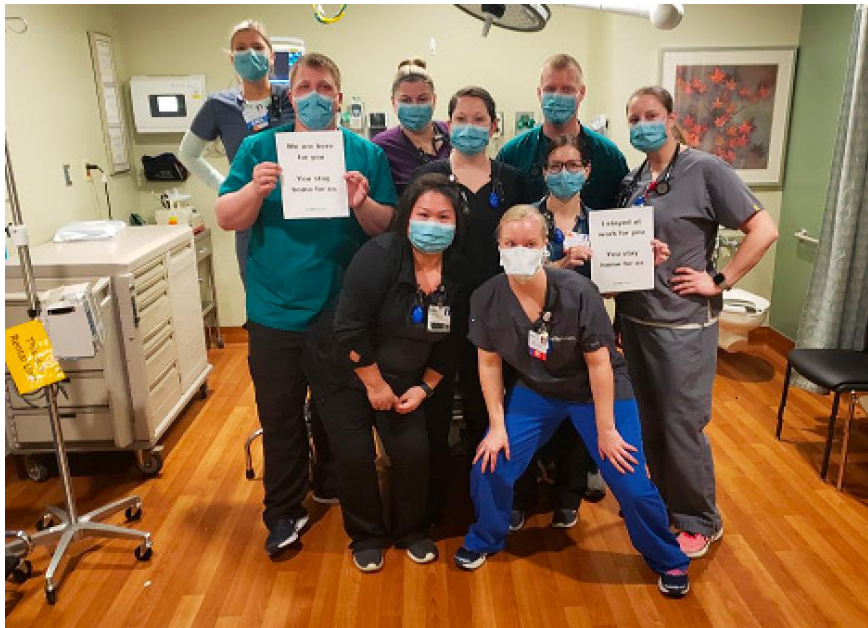
- Bellin has “learned” in real time and has likely implemented more operational and work flow changes in the last nine months than we have in the last nine years.
- We continue to significantly about the “disease” and adjust treatment regimens along the way

See Examples of Listen and Learn on the Next Few Slides...

MEDICAL/COVID UNIT



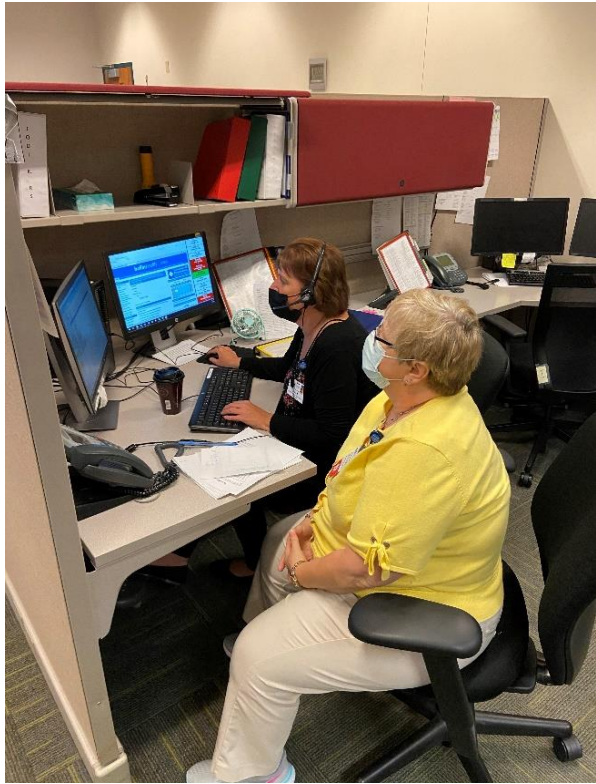
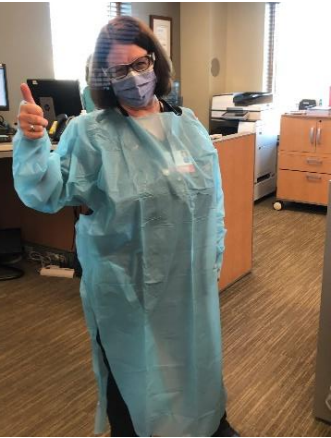
EMERGENCY DEPARTMENT/COVID UNIT



ICU / RESPIRATORY THERAPY



TELEHEALTH / BMG CLINICS / RESPIRATORY CLINICS



MEDICAL UNIT / ICU / 8TH FLOOR



DRIVE THRU TESTING AND ALTERNATIVE CARE SITE



LEARN: FROM FIRST TIME TO EVERY TIME



- From an idea to a repeatable plan
- Left to right
- First drive-up testing site was “stood-up” in 48 hours. We had to learn as we went.
- Preparation of the first car-side drive up test.
- Two months later, Bellin stands-up a multi-lane drive through testing site at a local employer in less than 9 hours.

BALANCING THE OPERATIONAL CHALLENGES

Lead

- We continually try to advocate for our region through many ways
- Health System collaboration
- Secretary of Health and Human Services Alex Azar visit
- Development of “Mental Health Moments”

Communicate

- Transparency of Information
- Connect with Chris Woleske – bi-weekly Town Hall style update from our CEO
- Bi-weekly rounding across the Organization by Senior Leaders
- Bi-monthly Provider Town Halls

COMMUNICATING WITH THE COMMUNITY



MSNBC.COM

'I have never seen the amount of suffering': doctor stresses severity of new Covid surge

Dr. Paul Casey, emergency department medical director at Bellin Hospital in Wisconsin, remarks on how extreme the surge in new Covid-19 cases has been at his hospital.

LONG-TERM IMPLICATIONS OF A PANDEMIC

Covid-19 will have long lasting effects on health status

Direct and indirect impacts of Covid-19 likely to increase patient complexity

Impact on Covid-19 survivors

Damage to...



Kidneys – 15% of hospitalized patients have experienced acute kidney injury, many of whom require future dialysis



Nervous system – 37% percent of hospitalized patients in Wuhan study had neurologic symptoms



Heart – 60% of patients had ongoing myocardial inflammation



Lungs – 77% of patients in Chinese study developed scarring on lungs

Impact of deferred care

Delayed...



Treatment – 23% drop in ER visits for heart attacks in 10 weeks following national emergency announcement; 20% drop in ER visits for strokes



Vaccinations – In Michigan, childhood vaccination rates fell from 66% to 49%



Diagnostics – 94% fewer cervical, breast cancer screenings in March compared to previous 3 years; 86% fewer colon cancer screenings

Impact of stress and isolation

Worse...



Physical health – Social isolation has been linked to a 29% increased risk of heart disease and a 32% increased risk of stroke



Behavioral health – 45% of Americans reported their mental health has been negatively impacted by stress and worry over virus; 130% increase in tele-behavioral health visits through Doctor on Demand

Source: Daily Briefing, "What We Know (So Far) About the Long-Term Health Effects of Covid-19," Advisory Board, June 2020; Mao L et al., "Neurologic Manifestations of Hospitalized Patients With Coronavirus Disease 2019 in Wuhan, China," JAMA Neurology, April 2020; Funtmann V et al., "Outcomes of Cardiovascular Magnetic Resonance Imaging in Patients Recently Recovered From Coronavirus Disease 2019 (COVID-19)," JAMA Cardiology, June 2020; Loria K, "Many People Avoided Hospitals During the Pandemic. The Effect Was Dire.," Consumer Reports, July 2020; Waldstein D, "Vaccinations Fall to Alarming Rates, C.D.C. Study Shows," The New York Times, May 2020; Mastrolia B, "Important Cancer Screenings Have Decreased During COVID-19," Healthline, June 2020; Brody J, "Take Steps to Counter the Loneliness of Social Distancing," The New York Times, March 2020; "Increasing Demand for Behavioral Health Due to COVID-19," Cross Country Healthcare, April 2020.



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Advisory Board interviews and analysis.

14

VACCINE UPDATE

Manufacturer	Partner	Current phase	Initial doses ordered (US)	Note
Pfizer	BIONTECH, ACUITAS THERAPEUTICS	PHASE III	100 MILLION	BNT162b2. Phase III began in mid-Aug 2020. CEO announced 10/16/20 that Pfizer would not be submitting an EUA application until at least the 3rd week in Nov. 5 doses per vial. Will require reconstitution with diluent. Will require 2 doses 21 days apart. Storage requirement of current vaccine candidate(s) would require frozen temperatures (-70 C). Must ship frozen and be stored frozen. Once thawed, is stable at refrigerated temperatures for up to 5 days.
MODERNA		PHASE III	100 MILLION	mRNA-1273. CEO announced 9/30/20 that Moderna would not be submitting an EUA application before Nov. 25, 2020. 5 ml vial. 10 doses per vial. All doses in vial must be administered within 6 hours after opening. Will require 2 doses 28 days apart.
J&J		PHASE III	100 MILLION	AD26.COV2-S. Phase III began in Sept 2020. Looking to study a total of 60,000 patients worldwide which includes 180 worldwide locations in the US as well as 8 other countries (i.e. South Africa, Brazil, Chile). US locations include 28 states. Phase III trial will compare efficacy of 1 single dose vs placebo. Will also study the effect in sub-populations. Phase III trial has resumed in US as of 10/26/20. Expect a vaccine to be available in late Dec/Jan 2021 pending FDA emergency use authorization (EUA). Storage requirements of current candidate(s) is refrigeration only. Will require 1 dose only. 5ml liquid vial. 5 doses per vial Company has pledged to provide vaccine on an "at cost/no-profit" basis.
ASTRAZENECA	OXFORD	PHASE III	300 MILLION	AZD-1222. Began Phase III in July 2020 with patients in the UK, Brazil and South Africa. 2 dose course. Phase III trials have resumed in UK, Brazil, US, & South Africa. Expected delivery of initial doses in Dec of 2020 to the UK. Storage requirements of current candidate(s) may require ultra-cold chain (-20 C). Will require 2 doses 28 days apart. 5ml liquid vial. 10 doses per vial. Company has pledged to provide vaccine on an "at cost/no-profit" basis.
NOVAVAX	Par/Endo	Phase III	100 MILLION	NVX-CoV2373. Phase I results published in NEJM 9/2/20. Phase II trial conducted in South Africa. Enrolled into Phase III clinical trial in UK in late Sept. 2020. Enrollment of 15,000 patients with a goal of 25% of those patients being over the age of 65. Expect to reach full enrollment by end of Nov 2020. Earliest data release expected in in Q1 of 2021. US Phase III trial to begin at the end of Nov 2020.
SANOPI PASTEUR	GlavoSmithKline	PHASE II	100 MILLION	SCB-2019. Launched Phase 1/2 in early Sept 2020 randomized, placebo controlled with 440 participants. Pending positive Phase 1/2 data, companies aim to move into Phase 3 by end of 2020. Currently plans to study the efficacy of a single dose and a 2-dose series. Expect a viable vaccine for approval by Q2 of 2021 under an Emergency Use Authorization (EUA) Storage requirements of current candidate(s) is refrigeration only. Sanofi and GSK are scaling up manufacturing of the antigen and adjuvant with a target of producing up to one billion doses in 2021
SANOPI PASTEUR	Translate Bio			Phase I/II trials to begin in late Nov 2020. Expected production of 90 million doses
MERCK	IAVI, THEMIS	PHASE I		V590, V591 Working on 2 different potential candidates. Expected delivery in late 2021.

* Last updated 11/3/20

Key Takeaways:

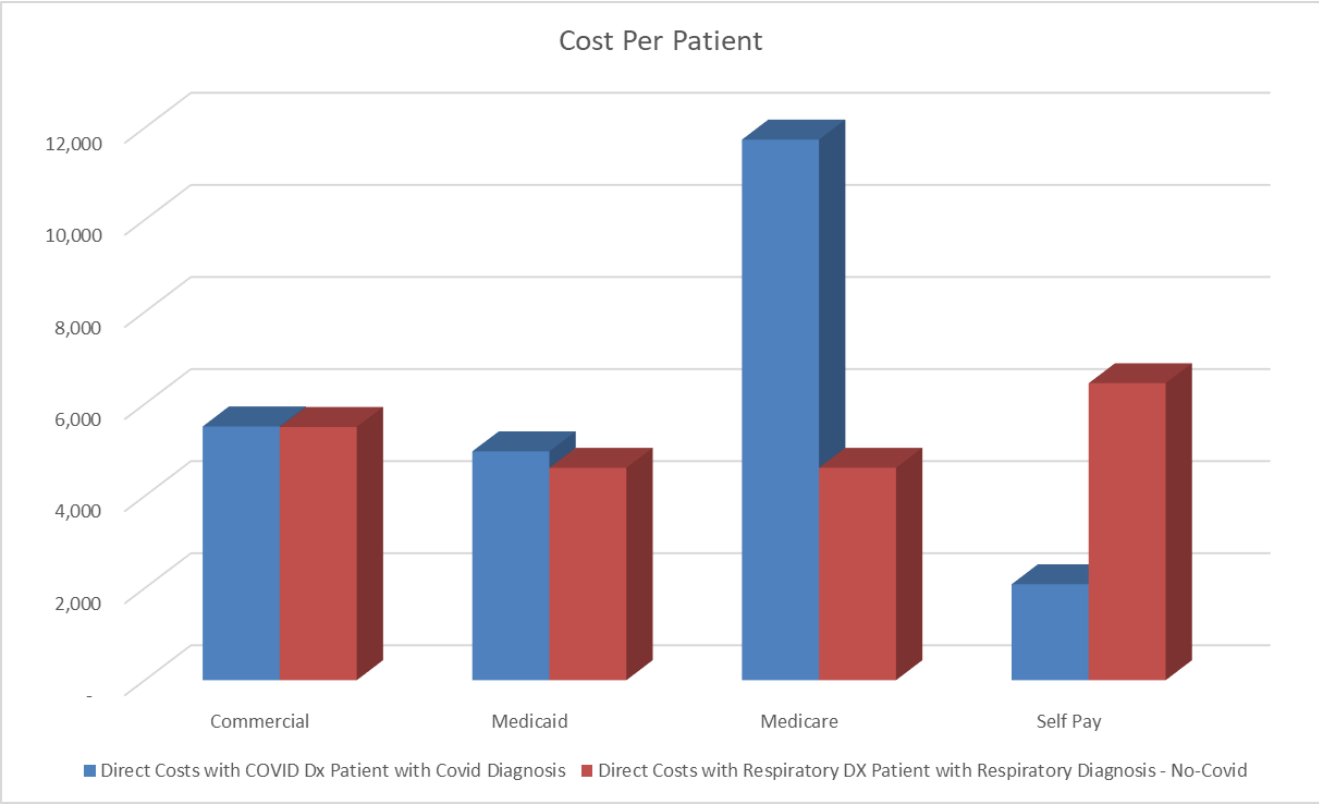
- CDC has just begun application process to distribute vaccine
- States will run distribution process and we have not been informed yet of distribution methodology
- Locally, we would expect to see one or both of the Moderna and Pfizer vaccines
- Pfizer & Moderna recently indicated a very high efficacy of the vaccine in early data which could be a game changer
- Healthcare workers and vulnerable population likely would be first
- Challenges will occur with logistics – Pfizer requires cold storage
- Additional drawback are two doses

Questions



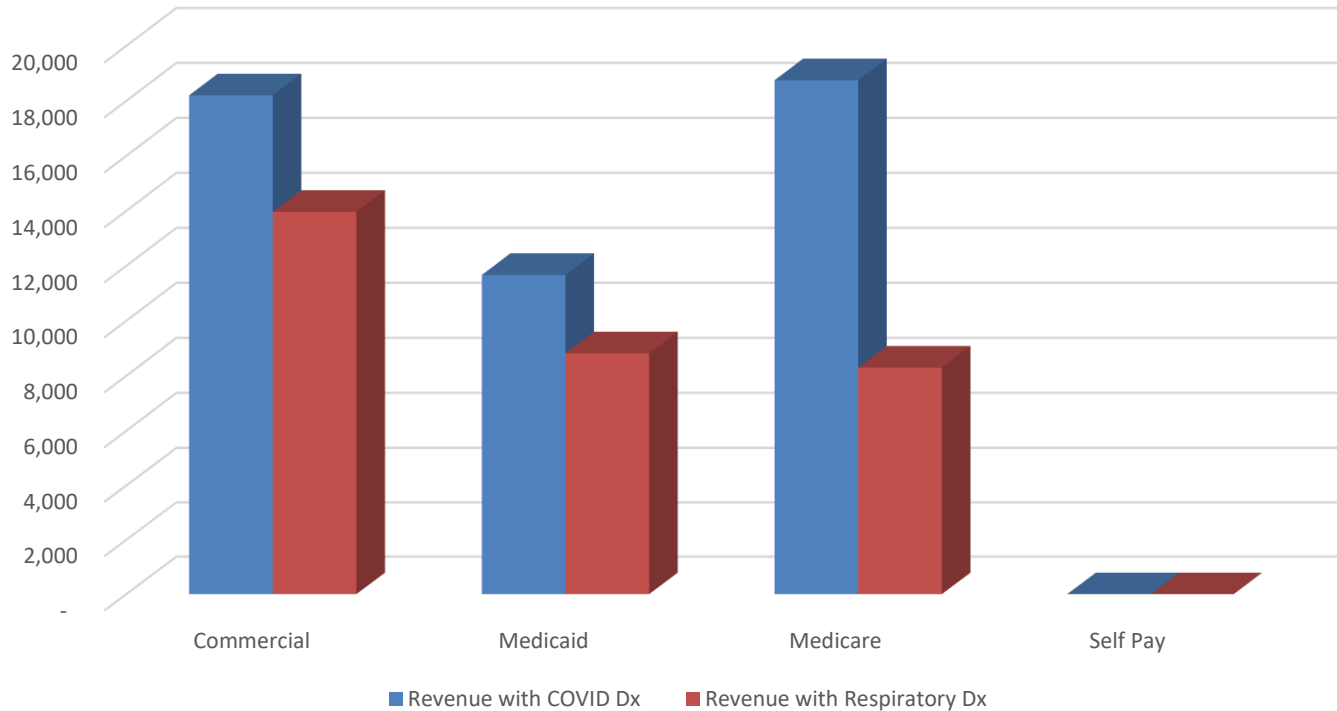
Appendix

COST ANALYSIS PER INPATIENT



PAYMENT ANALYSIS PER INPATIENT

Revenue Per Patient



PROFIT ANALYSIS PER INPATIENT

