RECOMMENDATIONS OF THE IRFC

Statutory Report to the Cook County Board of Commissioners

8/31/2021

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*Prepared in consultation with the commissioners of the Independent Revenue Forecasting Commission

Introduction

From the initial establishment of the Independent Revenue Forecasting Commission (IRFC) there have been two major underlining themes that have pervaded the discussion between the Office of the Chief Financial Officer (OCFO) and IRFC, broadening the scope of the revenues reviewed to include all major sources (including those collected by the hospital) as well as improving our capacity and ability to provide alternative revenue scenarios. Over the course of FY 2020 the near-term impacts of COVID 19 required a concerted effort to establish a means of forecasting potential future economic impacts to the County's Revenues and resulted in the initial development of alternative and base line scenarios with much success.

The majority of the recommendations from this year's IRFC discussions return to the prevailing themes of prior discussions with a greater level of specificity and with the objective of establishing lasting processes that can be leveraged for further improvements to the breadth of revenues discussed and the logic surrounding the development of alternative scenarios.

Additionally, the recommendation asks that we build upon prior year and current successes by further examining the impacts of the American Rescue Plan Act (ARPA) and establishing an additional scenario that examines the potential impact of a COVID-19 resurgence in the short and long-term forecasts.

On July 31, 2021, the IRFC met to discuss and finalize its recommendations for improvements to the FY 2021 Revenue Forecast and Long-Term Financial Plan. Directly below is a brief list of the IRFC's recommendations, followed by sections corresponding to each recommendation, explaining our efforts to incorporate them into our forecast methods and processes. All recommendations made by the IRFC are expected to be implemented by the Office of the Chief Financial Officer. The first three recommendations address revenue forecasts for the Cook County Health and Hospital System, which derives most of its revenues from running CountyCare program and providing health services to non-CountyCare members.

1. Review CountyCare membership scenarios to including explanations regarding redetermination and auto-assignment process factors and trends.

2. Leverage historical data to make public CountyCare Forecast scenarios by providing clearer explanations about the expectation surrounding membership and Per Member Per Month (PMPM) rates. More specifically, clearly define what the impact would be on annual CountyCare Revenues when redetermination resumes and when auto assignment of members returns to pre-pandemic levels as well as document the PMPM rate expectations for each population group.

3. For Net Patient Service Revenue (NPSR) on the provider side of Cook County Health (CCH) make assumptions transparent surrounding the composition of gross charges such as case mix and inpatient/outpatient care as well as assumptions surrounding payer mix and its impact on yield. Also clearly explain the upside and downside risks of revenue cycle improvements for each scenario.

4. Improve our short-term forecast to take into consideration additional provisions of ARPA including extended unemployment compensation, earned income tax credits as well as fully document assumptions and sources when scaling the data back to County revenues.

5. Create an additional scenario that assumes a COVID-19 resurgence and properly documents the impact on both general fund and health fund revenue sources by leveraging input from public health care professionals concerning potential trajectories of COVID-19 cases given vaccination efforts.

6. Properly document the methodology used to establish alternative scenarios on an ongoing basis that provides a full set of economic and environmental considerations for each scenario.

Methodological Improvement 1: CountyCare Membership Scenarios

Following our FY2021 preliminary forecast projections and incorporating the IRFC's recommendations on expanding our scenario analysis, we are collaborating with CCH by incorporating their monthly financial reporting and three case scenarios to effectively improve the Health Fund's Long-Term projections in the out years through FY2026. From a project management action plan, we have established weekly meetings between the OCFO and CCH Finance Team for knowledge and data transfer sessions. This is a helpful tactic in aligning finance team's metrics and assumptions to build out forecasts moving forward. Further, we will continue to provide specific details concerning the timing and impact on monthly membership due to the resumption of redeterminations, the level of auto assignment to CountyCare from the State, and normal attrition through FY2022-FY2026.

Updated Scenario Analysis

Worst, Base, Best Projections

We met with the finance team In HPS to get a better understanding of the methods and data they use to develop their forecasts and scenario analysis. Further, the weekly meetings helped align data requests, establishing a monthly process, validating assumptions to better understand the considerations and caveats. Beyond the General Ledger, membership and rate data for CountyCare, tables by populations; we further requested their monthly income statement reports and key data inputs.

Actual as well as projected membership and average rates for each population group go back to FY 2017. The State sets a specific reimbursement rate based on the population group, age, and sex of each patient. The data source provides the weighted average rate by population, which is then used for forecasting purposes. The projected data includes what the membership and rates were projected to be. Ideally, each HPS plan (population subgroup) will be forecasted separately and aggregated afterwards. Currently, the revenues from each population group are not broken out in their long term forecast and instead are aggregated together.

Membership Considerations

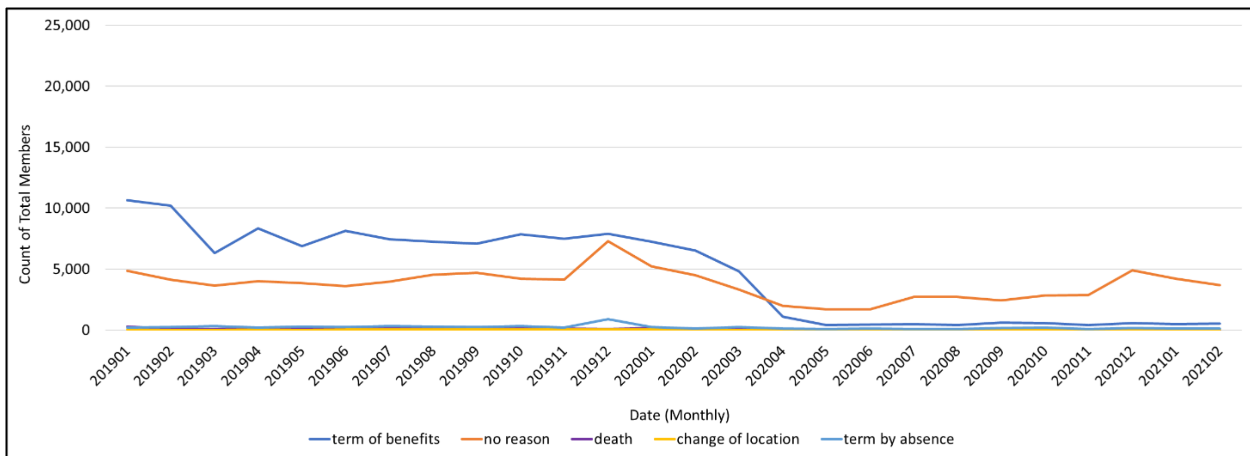
Gains and Losses

The impact of enhanced auto-assignment levels and suspension of the redetermination process impacts the future gain and/or loss in membership and therefore revenues. In February 2021, CountyCare's auto-assignment percentage increased from the historical 20% rate to 50%. The auto-assignment percentage is currently based on two criteria: where the Health Plans bid in the rate range during the RFP process and the quality scores of the Health Plan. Due to CountyCare being the lowest bidder in addition to their top-quality ranking, auto-assignment was increased to 50%. The State has the authority to change the criteria at any point and has not announced when they will be re-reviewing this criterion, or what the new criteria will be. In discussing losses, the suspension of the redetermination process will impact future losses in the out years. FY2018 through FY2019 set the historical baseline of where CountyCare believe redetermination rates will return. Currently, redetermination remains to be turned off due to the COVID-19 public health emergency. Following the FY2022 budget, CountyCare estimates redeterminations will be turned on January 1, 2022. Timing of reinstatement is dependent on the threat level of the public health emergency through the current year.

Redetermination

The largest source of membership attrition is through redetermination. On the anniversary of an individual joining a managed care program, the State determines if the individual is still eligible for Medicaid. Some individuals are ineligible due to changes in income, age, or location. Others simply do not fill out all the necessary paperwork and lose their eligibility. The redetermination rate is heavily dependent on State administration. The current administration has made simplifying the process a point of focus, attempting to limit members losing eligibility. Due to the COVID-19 pandemic redetermination has been suspended. That is, during the public health emergency no members will lose their eligibility due to the redetermination process. Eligibility factors into the consideration as well, and this past year undocumented residents in Cook County ages 65+ became a new inclusive criterion.

Chart 1: Membership Attrition



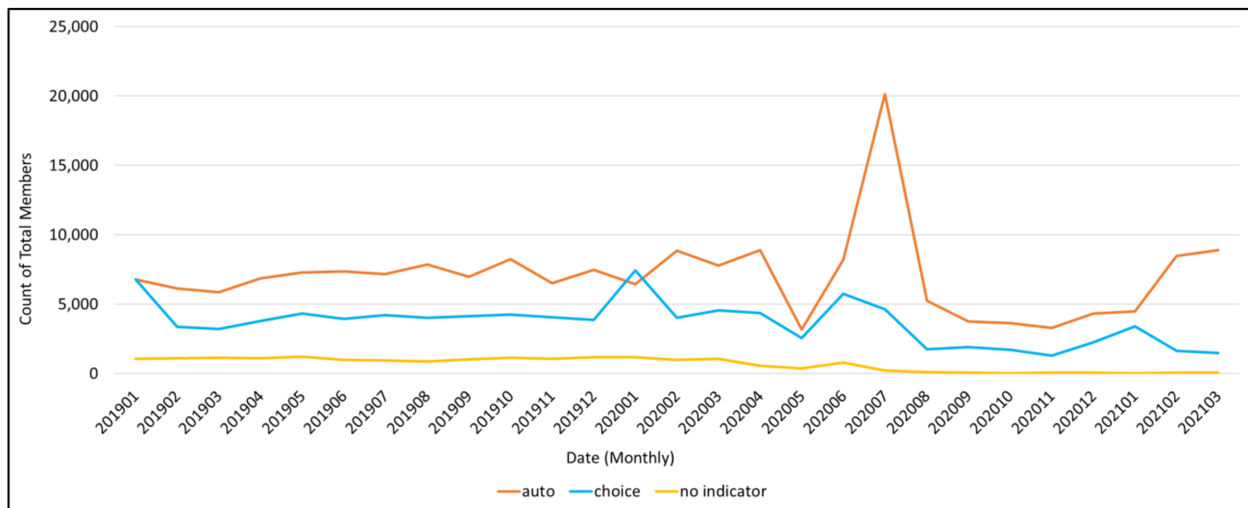
Losses to CountyCare membership are organized in 5 categories: Term of Benefits, Death, Change of Location, No Reason Given, and Turn of Absence. Term of Benefits mainly consists of members losing

eligibility through redetermination and/or aging out into Medicare. No Reason Given, often means a member left the program to join another Health Plan. Term of Absence losses are when a member is missing from the membership lists without being shown as leaving. HPS infers that these members have left the program but does not know if it was due to redetermination, patient choice, or some other cause. CountyCare Estimates that the reinstatement of the redetermination process in FY2022, will result in an average monthly loss of 2.5% total membership monthly as a conservative consumption.

Auto-assignment

Another one of the key drivers for our CCH scenario analysis is auto-assignment. Auto-assignment occurs at the state level when someone signs up for Medicaid but does not select an MCO. After some time in Medicaid Fee for Service, the individual can choose a managed care program, including CountyCare as an option. If an individual does not make a choice, then they will be assigned a health Plan based on the State's auto-assignment algorithm. Currently, CountyCare is receiving 50% of those individuals who are auto assigned in Cook County. Historically that percentage has ranged from 20% to 35%.

Chart 2: Membership Gains Based on Auto-Assignment



Methodological Improvement 2: CountyCare PMPM Rate Review

Factors Driving PMPM Capitation Rates

Scenario analysis assumptions

PMPM capitation rates are a variable factor in our scenario analysis regarding average monthly rates, average monthly membership, average distribution per population group, and lastly average rate per age group.

Each population group has and average PMPM rate that, when multiplied by the membership, provides the revenue. Rates for the different population groups are annually set by the State prior to the start of the calendar year. In practice, final rates due to legislative changes, risk adjustment process, and

other Medicaid program changes are not typically finalized until after the year completes The State determines rates based on encounter data from all health plans in the region. The State considers acuity of members in each of the Health Plans and reallocates revenue accordingly. Two particularly important features are member acuity and the maternity risk pool. Member acuity is the risk associated with the patients being served, such that a Health Plan with higher member acuity will have higher costs. The State then provides funds through higher rates to cover these costs. The maternity risk pool is similar but more specific. It counts the number of women ages 20-40 covered by the health care provider. This age bracket covers the vast majority of births.

PMPM rate setting

There are several complications that result from the State's use of encounter data. The annual rate setting cycle is typically based on encounter data from two years earlier. This delay occurs because providers have six months to provide the claim data, followed by a negotiation process between the State and the providers' actuaries. Compiling the encounter data is a labor intensive process due the volume of claims and the care required to enter the information into the Medicaid Management Information System (MMIS), the State's Encounter system that stores all claims from all providers. The provider is penalized if the state rejects a claim. There is an Encounter Acceptance Threshold, which specifies that 95-98% of the claim amount must be recorded in their system; otherwise, that claim is rejected, and the provider is penalized. The review process between the State and the providers' actuaries is laborious. The State drafts initial rates and sends them to the various Health Plans. These rates are reviewed against the Health Plan's medical trends, program changes and other financials. The State adjusts and sends it back, and this process may be repeated multiple times until the rates are finalized.

Once the rates are set, they are also amended throughout the year. The State may perform mid-year reassessments of their assumptions, to determine if actual experience aligns with their initial assumptions. In addition, legislative and program changes may require adjustments to the rates throughout the year. Even small adjustments to the PMPM rates can have large impacts on revenue; for example, a $3.00 PMPM change could lead to a $10 million revenue swing depending on the population group involved. The frequency, magnitude, and timing of these adjustments make revenue estimates inherently challenging.

Revised forecasting methods

We are working with HPS in extracting the appropriate population data tables and requests to further build out our membership rate considerations in the CCH scenario analysis. The total revenue for HPS is essentially the number of members in each population multiplied by the appropriate rates, and membership forecasting for both one month out and twelve months out, using historical membership data from prior years to build out assumptions. Historical addition and attrition rates to forecast the monthly changes, as well as the projected size of the auto-enrollment pool which are all incorporated in the outyears of the model.

Methodological Improvement 3: NPSR Projections

The scope of inquiry with CCH is to focus on the underlying impacts used to develop gross charges and yield assumptions by analyzing Net Patient Service Revenues (NPSR) process. NPSR calculations are split between Stroger and Provident for inpatient and outpatient revenues. Stroger includes community health clinics, as they are part of Stroger's license. Provident has its own separate license, and the correctional health facilities are not licensed in the same way and are not entities that can bill for services. The NPSR revenues include reimbursements provided by the State Fee for Services provided (State FFS), Fee For Services provided by Third Party providers (Third Parties), Graduate Medical Expenses (GME), Domestic Spend transfers from County Care for CountyCare utilization of CCH facilities, and Intergovernmental Transfers (IGT) provided to the State of Illinois and recorded as a contra revenue. Aggregating these various sources into a single object account complicates the forecasting process as variances due to any one source are not immediately recognizable within the overall trend. Part of our analysis included an evaluation of these various revenue sources with a base year FY2019 to identify their total actual value in future projections.

Building the NPSR Model for Future Projections

Proposed Forecasting Method

We are working with CCH to develop a model that incorporates assumption inputs for out years on NPSR including case mix index (CMI) and reimbursement rates. The NPSR model will also reconcile to Cook County's current budgeting practices by identifying additional adjustments. Our forecasting model will mirror CCH's one-year model by separating the two locations Stroger and Provident with outpatient and inpatient levels tracked and forecasted separately. Additionally, CCH folds in CMI to reflect complexity and show the changes in the reimbursement rate. For Stroger, using FY2019 as a baseline, top-down we add the separate initiatives (I.e. neuro services, cancer center, cardiology, surgery volume, clinic volume, Medicare UCC) to get a subtotal split between inpatient and outpatient. Then, separately with Provident, we take again the FY2019 as a baseline, top-down add separate initiatives (I.e. ER conversions, volume, MRI services, colonoscopy program, neuro) to get a subtotal for Provident. Taking the subtotals per location, a grand total NPSR revenue is calculated. As this is an accrual basis, CCH adjusts for a reserve by subtracting out cash adjustments to get an adjusted total NPSR calculation. In the future years, implementing Cerner Patient Accounting (CPA, which is described further below) will lower these reserves and increase NPSR assumptions on cash basis. Impact of Revenue cycle improvements may be added in future iterations once progress can be demonstrated.

To take a step back and understand how the baseline is calculated, again we will use a similar approach in splitting our analysis between the two locations and inpatient v. outpatient. The process involves looking at historical trends and using domain knowledge to predict how future policy and economic conditions will affect the volume and types of patients seen. The number of patients and those patients' acuity determines the patient charges, which are logged as the activity takes place. Expected gross charges are converted to cash using the yield, which is around 28%. That is, CCH expects to receive approximately 28% of its gross charges as actual cash revenue. The yield fluctuates based on case mix,

payor mix, and other factors. Fixed charges, such as those resulting from agreements with other government agencies (e.g. BIPA IGT), are added at the end.

Caveats and Assumptions

Volume, Payer and Case Mix Expectations

Our revenue forecasting centers around making educated assumptions about future service volumes and payor mix and reimbursement rates. Considerations include looking at historical trends, expected policy changes, and economic conditions that may affect service volumes or payor mix. These assumptions and expectations should be provided as part of the budget process and adapted as it relates to developing and explaining the long-term forecast. For example, a write-up of how COVID-19 affected the volume and mix expectations and likewise for other, more typical, policy and economic conditions in the future could allow for greater insight in future forecasts.

Due to changes in eligibility and coverage available to historically uninsured individuals, the percent of patients covered under Medicaid is expected to increase from last year's changes. For example, the changes to eligibility requirements and criteria which will be reviewed separately alongside our forecast. Further, the significant increase in emergency Medicaid in response to the COVID pandemic and changes in State law that provide greater coverage for undocumented individuals who meet the income thresholds for Medicaid.

Yield

The health system only expects a yield of 28% from gross charges. This is due to the level of contractual payments from various insurers, inability of "self-pay" patients to pay the full gross charges, and coverage for uninsured. It should be acknowledged that using the yield to derive cash received from gross charges is likely a good approximation but will continue to be trued up in the final year end financials.

Revenue Cycle Process

Lag

A consistent challenge in forecasting CCH revenues is the lag between when revenue is recognized on an accrual basis (as is required by an enterprise fund), and when revenue is recognized on a cash basis, as required by the County for reporting on a modified accrual basis. On accrual basis of accounting, revenues are recognized once the services are provided, while on cash basis revenues are recognized when the cash is received for the service. Within the health system there can be a significant lag between when services are provided to a patient and when the County receives the cash. There is a 4-6-day lag between services being rendered and the billing process beginning, to ensure all charges are reflected in the patient's account. The billing process typically takes between 90 and 120 days to be completed. However, this range is not strict depending on the payer and the CCH documentation, and nothing prevents charges from taking less than 90 days or more than 120 days. Two charges recognized as revenue on the same day on an accrual basis could be received as cash in two different months due to the range of lags, which makes predictions difficult.

In future iterations of the NPSR Model we will consider lag by incorporating a scenario analysis in our forecasting model by the monthly aging tables in 30-day increments. This value could come from a Days Sales Outstanding (DSO) calculation, which finds the average number of days before an outstanding

transaction is closed. This calculation divides the accounts receivables by the average daily revenue, multiplied by the number of days in the year. CCH receives a monthly report from third-party actuaries, so we will review such reports and utilize in our projections how they align.

Forthcoming Improvements

CCH is currently improving their Revenue Cycle process and is monitoring improvements through KPI metrics established by their finance team. For every day their accounts receivable account decreases, the actual anticipated cash increase would be approximately 28% of the $4-4.5 million in average gross charges. There is currently about $70 million in accounts receivable for self-pay and reserves are kept at 100%. Historical rates at 1% of payment plans are the default constant assumption. It is important to note the distinction in accrual versus cash accounting methods in what is included in NPSR calculations as there are necessary adjustments month end for Cerner Patient Accounting (CPA). CCH plans to go live with CPA in the next 12 months to reflect this impact.

Improve Transparency in NPSR Reporting

In order to improve transparency and forecasting, CCH and the County have proposed to develop separate object accounts within the chart of account to break out Medicaid Medicare and Private payers during FY2022, properly documenting any adjustments made to each of these categories in the process. Implementing the change within the Budget, Annual financial report and other unaudited financial statements would require significant effort and coordination between the County's Bureau of Finance, CCH's Finance Team, and application/system administrators. Throughout FY2022, we would like to develop an alternative budget within a test environment via EBS that represents the future state of the chart of accounts by leveraging discovery done in FY2022. The alternative budget would ultimately reconcile to the FY 2022 budget as presented in the Annual Appropriation. This alternative budget would be based on using a restructured Chart of Accounts and based on CCH feedback and expectations. The Proposed Chart of accounts would be loaded into a test environment of EBS. Then, monthly reconciliations would occur to insure that revenue is recorded to properly to reflect the new chart of accounts. Working with our partners at CCH, Budget and the Comptroller's office we would then insure that monthly information is recorded properly under the new convention and that any downstream impact on reports are properly identified and resolved prior to migrating the change from the test environment to production.

Methodological Improvement 4: Improve ARPA Impact Analysis

The American Rescue Plan Act provides $1.9 billion in stimulus to the economy. Some of this money will come back to us in sales tax revenue as spending increases. Recovery Rebates for Individuals ($1,400 stimulus checks) account for 34% of 2021 ARPA spending ($405 billion out of $1.2 trillion). From research on prior stimulus check payments, 19% of these funds are expected to be spent, rather than saved or used to pay off debt[1]. After scaling to Cook County, we expect nearly $10 million of extra sales tax revenue in 2021 from these purchases. This methodology has been documented in prior

[1] https://www.pgpf.org/blog/2021/05/how-did-americans-spend-their-stimulus-checks-and-how-did-it-affect-the-economy

Independent Revenue Forecasting Commission reports but is included below for reference. Additionally, we expect an additional $2 million in sales tax revenue from the expanded child tax credit across 2021 and 2022, following the same methodology.

Economic Rebates	
Total Economic Rebates under ARPA (1)	404,937,000,000
Percent Distributed (2)	95%
Value of Rebates Distributed	384,690,150,000
US population (3)	328,239,523
Distributed Per Capita	1,171.98
Cook County Population (3)	5,150,233
Rebates Distributed to Cook County	6,035,969,975
% Spent (not saved or for debt) (2)	19%
Total Spent in Cook County	1,146,834,295
% Spent on Taxable Goods	50%
Total Rebates Spent on Taxable Goods in Cook County	573,417,148
Sales Tax Rate	1.75%
Taxes collected by State	10,034,800
Less State Administrative fee (1.5%)	(150,522.00)
Remitted to Cook County	**9,884,278**

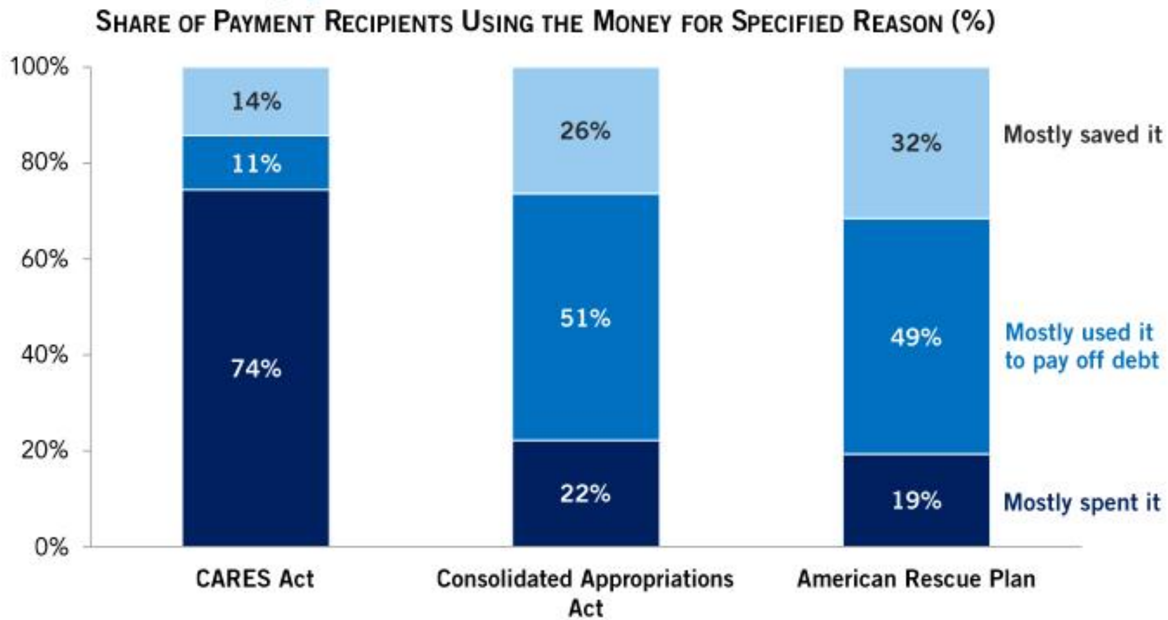
Sources

(1) https://www.cbo.gov/system/files/2021-02/hwaysandmeansreconciliation.pdf

(2) https://www.pgpf.org/blog/2021/05/how-did-americans-spend-their-stimulus-checks-and-how-did-it-affect-the-economy

(3) https://www.census.gov/quickfacts/fact/table/cookcountyillinois,US/PST045219

Chart 3: Stimulus Spending by Check[2]



The study done by the Peter G. Peterson Foundation was used to determine the estimated value spent of total stimulus checks received (19%). This is survey information asked households if they plan to mostly save, spend, or pay off debt with their stimulus check. However, this is self-reported and what consumers plan for the primary use. A paper from the National Bureau of Economic Research asked respondents for quantitative breakdowns across different categories for the first round of stimulus payments. People who “mostly spent” their stimulus check spent 84% of it, but people who “mostly saved” or “mostly paid off debt” still spent 21% and 42% respectively. It also breaks out the amount spent on medical care and food, which are not taxable goods. Durable goods and other consumer spending make up 48% of total spending, which is in line with our 50% spent on taxable goods assumption referenced in Chart 3 above.

[2] https://www.pgpf.org/blog/2021/05/how-did-americans-spend-their-stimulus-checks-and-how-did-it-affect-the-economy

Chart 4: CARES Act Stimulus Payment Spending[3]

Spending item	Qualitative response: Any mean (1)	Any st.dev. (2)	Mostly spend mean (3)	Mostly spend st.dev. (4)	Mostly save mean (5)	Mostly save st.dev. (6)	Mostly pay debts mean (7)	Mostly pay debts st.dev. (8)
Saving	0.27	0.42	0.07	0.20	0.73	0.39	0.04	0.16
Debt payments (mortgages, auto loans, student loans, etc.)	0.31	0.40	0.10	0.23	0.06	0.19	0.53	0.41
Durable goods such as houses/apartments, cars, large appliances and electronics	0.07	0.22	0.17	0.33	0.03	0.15	0.07	0.21
Food, health/beauty aids, and household products	0.16	0.28	0.31	0.37	0.08	0.21	0.17	0.26
Medical care (including health insurance, out-of-pocket medical bills and prescription drugs)	0.06	0.18	0.05	0.16	0.03	0.14	0.08	0.20
Other consumer spending	0.13	0.30	0.31	0.41	0.07	0.24	0.11	0.27
Memorandum: Total spending	0.42	0.43	0.84	0.29	0.21	0.36	0.42	0.41

Notes: the table reports the distribution for uses of stimulus check. Columns (1) and (2) report statistics for the full sample. Columns (3)-(8) report statistics for subsamples of respondents reporting that a particular use was dominant.

These two categories that we have specifically included make up 26% of the $1.9 trillion. An additional 18% is dedicated to Coronavirus State and Local Fiscal Relief Funds, of which Cook County received $1 billion. This will primarily be used on recovery initiatives that are still under evaluation. It is likely that some small portion of these billion dollars, and the additional $10 billion allocated between the City of Chicago and State of Illinois, will stimulate the economy, and come back as sales tax revenue. However, these programs are yet to be decided, and not all will be economic in nature. At this time, we have not explicitly included this funding in the sales tax forecast. Even if $1 billion is distributed as cash in hand to residents of Cook County, this is 1/6th the amount of the economic impact payments and is comparatively a small impact.

ARPA unemployment benefits are a continuation of the benefits already in place for the past year. For this reason, we do not expect an upward shock in revenues due to this funding. However, these expanded unemployment benefits are set to expire September 6, 2021. This may cause negative economic impacts upon expiration. Some states have stopped these unemployment benefits early States that ended unemployment benefits early only saw 2.2% workforce growth in July, compared with 4.1% growth in States continuing benefits4. Another study shows that employment declined 0.9% in states that ended benefits, compared to 2.3% growth in states continuing benefits5. This data suggests that ending benefits is not encouraging people back into the workforce as intended. However, this data is still preliminary, and long-term impacts of stopping unemployment are yet to be seen. Regardless, assumptions about the growth in revenues because of the cessation of unemployment benefits are embedded within our long term forecast that leverages Moddy's assumptions of employment growth within the region.

[3] Most Stimulus Payments Were Saved or Applied to Debt | NBER
[4] UKG-Workforce-Activity-Report-July-2021.pdf, page 5
[5] PowerPoint Presentation (joinhomebase.com), page 5

The programs mentioned above make up a majority of ARPA funding. The chart below shows the distribution of funding that has already been committed or disbursed. Most remaining categories are either small enough to have a negligible impact on our revenues or are not strictly economic.

Chart 5: American Rescue Plan Committed/Disbursed Funding[6]

Back
Legislative
COMMITTED/DISBURSED: $1.1 trillion
Click to Reset
State & Local Funding $347 billion
Income Support $168 billion
Other Spending $75 billion
Loan and Grant Programs $57 billion
Tax Policy $47 billion
Health Spending
Direct Payments $395 billion
Coronavirus State and Local Fiscal Recovery Funds $232 billion
Education Funding $84 billion
Transit Grants
Unemployment Benefits $125 billion
Child & Family Services
Higher Education Funding
Housing
Disaster Support
Grants for Restaurants
Child Tax Credit Expansion
Unemployment Insurance Tax Relief
Stimulus Checks ($1400/person) $395 billion

6 Visualization | Covid Money Tracker

	2021 Estimated Outlays (millions)	% of Total	Total 2021-2030 Budget Authority (millions)	% of Total	Included in models?
Sec. 9601 - Recovery Rebates for Individuals	404,937	34%	413,637	22%	Included
Sec. 5001 - Coronavirus State and Local Fiscal Relief Funds	349,800	29%	350,000	18%	Separate
Title 9 Subtitle A – Crisis Support for Unemployed Workers	228,372	19%	242,401	13%	Embedded
Sec. 2001 - Elementary and Secondary School Emergency Relief Fund	6,428	1%	128,555	7%	Excluded
Total Title 3 Public Health	28,687	2%	128,236	7%	Excluded
Sec. 9611 Child Tax Credit Improvements for 2021	19,169	2%	88,486	5%	Included
Sec. 9704 - Multiemployer Pension Plans	12	0%	85,666	4%	Excluded
Sec. 7001 - FEMA Appropriation	11,480	1%	50,000	3%	Excluded
Sec. 6003 - Support for Restaurants	25,000	2%	25,000	1%	Excluded
Sec. 4101 Emergency Rental Assistance	8,100	1%	20,250	1%	Excluded
Sec. 9621 - Strengthen the EITC for Individuals with No Qualifying Children	0	0%	9,278	0%	Negligible amount
Other	118,305	10%	368,805	19%	
Total	**1,200,290**	**100%**	**1,910,314**	**100%**	

Methodological Improvement 5: Develop COVID-19 Resurgence Impact

If a resurgence of COVID-19 results in mitigation measures being implemented, we would expect minor impacts on general fund revenues. In December 2020 through February 2021, increased cases lead to lockdowns. In this surge, sales tax was minorly impacted, but not nearly to the degree as in March – May 2020. This is because consumers have learned how to adapt to the pandemic. Businesses were able to continue their operations in a reduced capacity but did not fully close. Especially with online sales tax, lockdowns may shift shopping from brick and mortar to online, but we are now able to capture that revenue. We expect any future lockdowns to have similar impacts on sales tax: minor losses, but not detrimental.

However, some smaller revenues will be much more significantly impacted. Amusement tax will be close to zero, if not negative due to refunds, if in person gatherings are barred. Parking taxes will decrease if downtown office workers are sent back home. Hotel taxes will decrease if tourists and business travelers are not able to visit. Partially due to stimulus, car sales did not decline during the pandemic as anticipated, and tax revenues from car sales increased. As such, New Motor Vehicle Tax, County Use Tax, and Non-Retailer Transaction Use Tax were removed from the list of COVID-19 impacted revenues. Additionally, Clerk of the Circuit Court Fees, Gambling Machine Tax, Alcoholic Beverage Tax, General Sales Tax, and State Income Tax were removed as the actuals did not show significant impacts from Phase 3 or 4. From

actual revenues from past year, we would expect to lose $17 million each month we returned to Phase 3, and $8 million each month we return to Phase 4.

Chart 6: General Fund COVID-19 Impacted Revenues: Average Monthly Losses from Phase 5

	Phase 3	Phase 4
401150-County Sales Tax	9,453,000	1,660,000
401190-Gasoline / Diesel Tax	626,000	215,000
401330-Il Gaming Des Plaines Casino	602,000	16,000
401350-Amusement Tax	2,353,000	2,494,000
401370-Parking Lot and Garage Operation	1,664,000	1,528,000
401490-Firearms Tax	(82,000)	(52,000)
401550-Hotel Accommodations Tax	2,124,000	1,835,000
402950-Sheriff General Fees	371,000	365,000
Total	17,111,000	8,061,000

In the event of COVID-19 resurgence, the health fund will also be impacted as well. The provider side will be negatively impacted due to the cancellation of elective procedures. However, HPS revenues may experience positive results if COVID-19 continues to impact Medicaid policy dictated by the State. Since the suspension of redeterminations, the losses in HPS membership has decreased resulting in higher net membership levels. If COVID-19 continues, these redeterminations may remain suspended keeping membership and the average monthly PMPM revenues high.

Methodological Improvement 6: Update Alternative Scenarios

To improve scenario forecasting in the general fund, the subscription to Moody's Analytics was expanded to include their scenarios. Previously, access was only to forecasts of local economic indicators in the baseline scenario, which has a 50% chance that the economy will do better and a 50% chance that the economy will do worse. This subscription upgrade provides access to two upside scenarios and three downside scenarios, along with a few forecasts for specific scenarios (e.g. low oil prices). The upside and downside scenarios for gross metro product and unemployment rate are shown in charts below. The scenarios S0-S4 are described based on the percentage chance that the economy will perform better than that forecast. For example, the "S1 - 10th percentile forecast" has a 10% chance that the economy will perform better, and a 90% chance that the economy will perform worse. We plan to leverage these professional forecasts of local level economic indicators in our scenarios for economically sensitive revenues.

COOK COUNTY GOVERNMENT

Chart 6: Moody's Analytics Constant Gross Metro Product Scenarios for Chicago-Naperville-Elgin, IL-IN-WI Metropolitan Statistical Area, July 2021 Forecasts

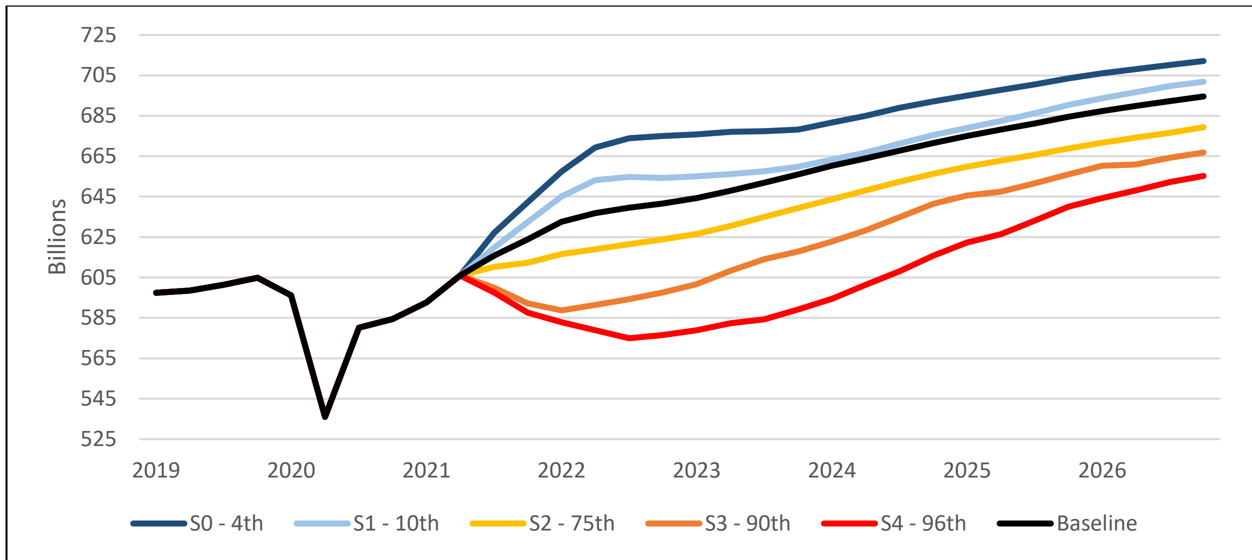
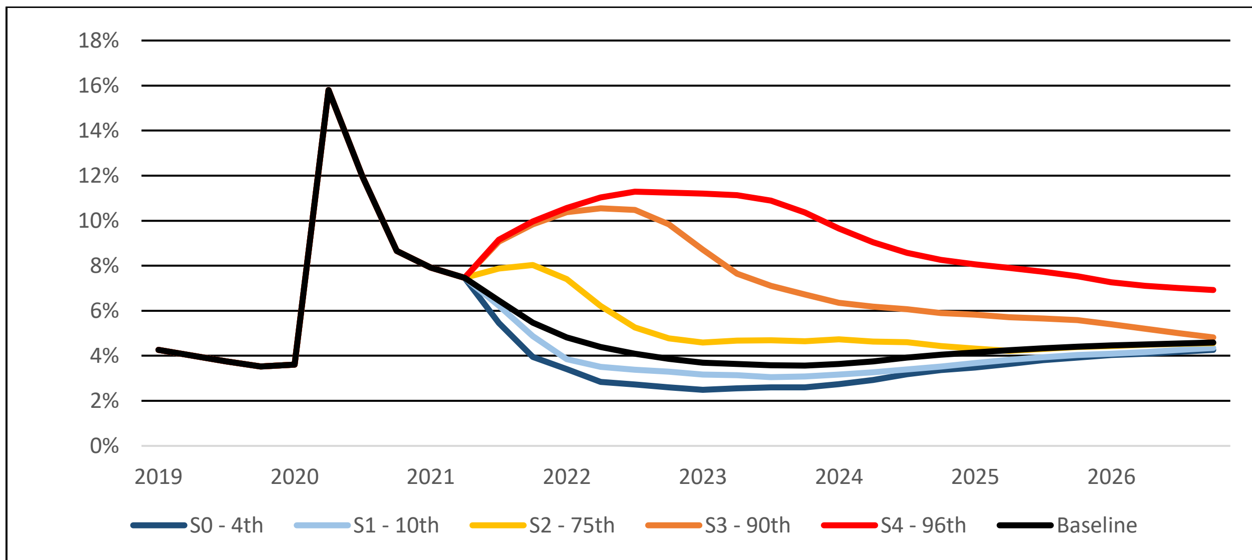


Chart 7: Moody's Analytics Unemployment Rate Scenarios for Chicago-Naperville-Elgin, IL-IN-WI Metropolitan Statistical Area, July 2021 Forecasts



We plan to utilize the S1- Upside 10th percentile and S3 – Downside 90th percentile scenarios for our best- and worst-case forecasts. These scenarios give mirrored likelihoods, allowing our best- and worst-case forecasts to be equally probable. They are also less extreme than the 4th percentile/96th percentile pairing

to give more likely results. Moody's Analytics provides narrative on what factors drive each forecast, and the key assumptions are included below.

Baseline Forecast

This scenario is the baseline forecast of Moody's Analytics. Since it is a baseline, the probability that the economy will perform better than this projection is equal to 50%, the same as the probability that it will perform worse.

- Under our baseline outlook we anticipate that the U.S. will effectively achieve herd resiliency in September.
- The baseline forecast assumes lawmakers pass a bipartisan infrastructure bill through regular order and a partisan Build Back Better package through budget reconciliation. The reconciliation bill would include the following other infrastructure investments over the next decade: $300 billion in affordable housing, schools, and federal buildings; $300 billion in manufacturing supply chains; and $200 billion in research and development. All told, infrastructure spending under the bipartisan bill and the partisan reconciliation measure would total $1.4 trillion in the July forecast, down slightly from $1.5 trillion in the June vintage.
- The acceleration in consumer prices is expected to be transitory along with the U.S. labor supply constraints, with the latter being caused by healthcare concerns, childcare issues, and expanded unemployment insurance benefits. Labor supply constraints are expected to begin easing in late August and September.
- The Federal Reserve keeps the target range for the fed funds rate at 0% to 0.25% until early 2023. The Fed does not taper its asset purchases until early 2022, but it announces it plans in September.
- The 10-year U.S. Treasury yield is expected to steadily increase over the next few years, reaching its estimated long-run equilibrium of 3.75% by mid-decade.
- The dollar will weaken further on the other side of the pandemic, but geopolitical uncertainties including the U.S. trade war with China will ensure that any decline will be modest. The dollar's reserve currency status will remain intact for the foreseeable future.

S1: Alternative Scenario 1 – Upside – 10th Percentile

This above-baseline scenario is designed so that there is a 10% probability that the economy will perform better than in this scenario, broadly speaking, and a 90% probability that it will perform worse.

- New cases, hospitalizations and deaths from COVID-19 recede faster than in the baseline.
- Widespread availability and acceptance of vaccines boosts consumer confidence in the safety of restaurants, stores, hotels, and flights, and therefore spending, more than expected.
- The fiscal stimulus boosts the economy more than expected.
- The above-baseline growth results in steadily declining unemployment and consequently fewer business bankruptcies.
- Although inflation and long-term interest rates rise more than in the baseline, financial markets do not become alarmed, and the stock market continues to rise.
- Political and economic tensions between the U.S. and China decline amid the positive outcomes.
- The economy returns to full employment by the first quarter of 2022.

S3: Alternative Scenario 3 – Downside – 90th Percentile

In this scenario, there is a 90% probability that the economy will perform better, broadly speaking, and a 10% probability that it will perform worse.

- New cases, hospitalizations and deaths from COVID-19 diminish more slowly than expected, delaying the reopening of businesses in some areas of the country.
- More people than anticipated refuse to receive the vaccines and worries about resistant strains rise.
- As a result, consumers remain uncertain about the safety of hotels, stores, restaurants, and flights, and therefore spending on air travel, retail, and hotels declines.
- The stimulus is less effective than expected because of the lower consumer spending. More of the funds end up in savings and thus fiscal multipliers are smaller than assumed in the baseline.
- Unemployment begins to increase again in the third quarter of 2021, consumer confidence falls, and bankruptcies rise as forbearance ends.
- The elevated stock price-to-earnings ratio amid rising unemployment causes the stock market to fall sharply.
- Consumer spending drops significantly in the third quarter of 2021, and the economy falls into recession.
- Political and economic tensions with China rise again.
- The economy does not return to full employment until the fourth quarter of 2026

Specifically, for the out years of the General Fund long term Revenue forecasts we will leverage our list of economically sensitive revenues to generate alternative scenarios. The revenues with the highest level of correlation to the economic indicators available in Moody's base line scenario will be used. The proposed process will proceed as follows:

1) Identify the economic indicator for a specific revenue stream that has the highest correlation to historic data in Moody's base line scenario.

2) Select the overall scenarios which will be used for comparison purposes against the base line estimate. As a matter of principal, scenarios with equal upside and downside probability should be used.

3) Perform a regression analysis for each scenario and measure the % variance from the base line estimate for each of the out years.

4) Apply that percent change in 3 above to the baseline out year estimate to develop the best- and worst-case scenarios.

5) Review the results with subject matter experts for reasonableness and adjust accordingly.

6) Perform steps 1–5 for each economically sensitive revenue source.

In FY 2020, we leveraged assumptions about the County's progression through the Governor's restore Illinois Plan to develop alternative scenarios for our long-term forecast. However, as we reach a steadier state the economy will likely have a greater impact on County revenues. The methodology above provides a means for evaluating County revenues in alternative scenarios going forward. Moody's provides extensive documentation for each of their scenarios including, forecasts of economic indicators, and the

socio and political assumptions embedded within. These can be leveraged for the purpose of developing a narrative around our base line and alternative scenarios.

Conclusion

Beyond the recommended methodological improvements identified above, the OCFO has worked closely with the IRFC to establish some significant changes in our revenue forecasting processes and procedures, and performed significant levels of discovery to improve the breadth and detail of analysis within the long term forecasts and scenarios. We are committed to the continuous improvement of our forecasting methodologies and the development of scenario forecasts that both improve transparency and understanding of the risk associated with all the County's Revenue forecasts. The historic levels of federal funding received by Cook County Residents as part of the County's response to the economic impact of COVID 19 has made the development of the long term forecast for FY 2022 budget a unique challenge. With the assistance of the IRFC, and based on the most current and available data, we are confident that the short-term and long-term forecasts for FY 2022 to FY2026 are reasonable and potential short and long term risk have been identified and properly documented. We look forward to continued collaboration with the IRFC and our counterparts at the Cook County Hospital System in the further development and advancement of our long-term projections.