

Predicting Monthly Cash with Confidence and Accuracy

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The History

- Background
- Hospital Only
- The challenge
- The evolution
- Trial and error
- Success



The “Model”



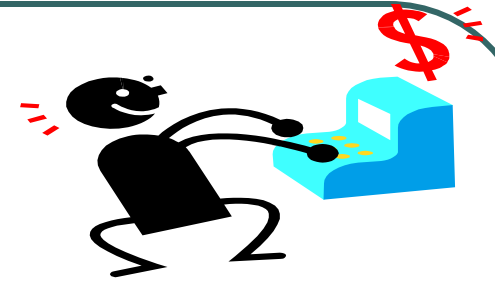
- There is no “model” – one model doesn’t work (at least not for me - I use 5)
- Why more is better
- Works across all hospitals within system
- Took a year to go “public”
- Refined over 2 year period
- Will never be perfect – used for internal purposes only

The Factors or Variables

- Gross Revenue
 - Net would be better if you didn't have to wait
- Cash (historical)
- Posting days
- Days of the week
- Current average daily census
- “Hiccups”
- Seasonality



Revenue cash Calendar days historical



3 month Calendar Day Model

| | Nov | Dec | Jan | |
|----------------------|-------------|-------------|-------------|---|
| Days | 30 | 31 | 31 | |
| Charge/Day | 22,426,436 | 22,110,329 | 22,828,069 | Gross Revenue/Days in month |
| Total Rev | 672,793,086 | 685,420,193 | 707,670,144 | |
| Actual Cash | 181,343,990 | 190,310,737 | 202,450,129 | |
| Cash as % of charges | 26.95% | 27.77% | 28.61% | |
| Projected Revenue | | | 628,747,129 | Sum last 3 month rev/day * # days in upcoming month |
| Projected % | | | 27.79% | % cash to gross rev for last 3 months |
| Projected Cash | | | 174,727,565 | Projected rev * Projected % |

2 Month Calendar Day Model

| | Dec | Jan | |
|----------------------|-------------|-------------|---|
| Days | 31 | 31 | Gross Revenue/Days in month |
| Charge/Day | 22,110,329 | 22,828,069 | |
| Total Rev | 685,420,193 | 707,670,144 | |
| Actual Cash | 190,310,737 | 202,450,129 | |
| Cash as % of charges | 27.77% | 28.61% | |
| Projected Revenue | | 629,137,572 | Sum last 3 month rev/day * # days in upcoming month |
| Projected % | | 28.19% | % cash to gross rev for last 3 months |
| Projected Cash | | 177,375,875 | Projected rev * Projected % |

Revenue/cash Historical posting days



Alternative model based on posting days - 3 MO MODLE

| | Nov | Dec | Jan | |
|----------------|-------------|-------------|-------------|--|
| Days | 30 | 31 | 31 | |
| Total Rev | 672,793,086 | 685,420,193 | 707,670,144 | Gross revenue |
| Rev/Day | 22,426,436 | 22,110,329 | 22,828,069 | Gross rev/days in month |
| Cash | 181,343,990 | 190,310,737 | 202,450,129 | |
| Posting Days | 20 | 21 | 21 | # cash posting (business) days |
| Cash/Day | 9,067,200 | 9,062,416 | 9,640,482 | Cash/ posting day |
| % cash to Rev | 1.35% | 1.32% | 1.36% | Cash per day/ total gross revenue |
| Projected Rev | | 457,658,822 | 628,747,129 | Sum last 3 months rev/ days in upcoming month |
| Percent | 1.313 | 1.283 | 1.343 | Average of last three months % cash to revenue |
| Projected Cash | | 123,307,016 | 168,881,479 | (Proj Rev*Percent)*Post Days (Post days for next month) |

Alternative model based on posting days - 2 MO MODLE

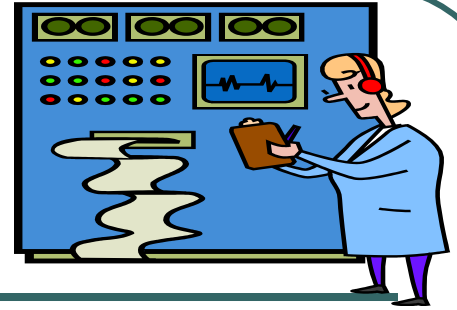
| | Dec | Jan | |
|--------------------|-------------|-------------|---|
| Days | 31 | 31 | |
| Total Rev | 685,420,193 | 707,670,144 | Gross revenue |
| Rev/Day | 22,110,329 | 22,828,069 | Gross rev/days in month |
| Cash | 190,310,737 | 202,450,129 | |
| Posting Days | 21 | 21 | # cash posting (business) days |
| Cash/Day | 9,062,416 | 9,640,482 | Cash/ posting day |
| | 1.32% | 1.36% | Cash per day/ total gross revenue |
| Projected Rev | 348,328,295 | 629,137,572 | Sum last 2 months rev/ days in upcoming month |
| Projected cash/day | | | |
| Percent | 1.335 | 1.350 | Average of last two months % cash to revenue |
| Projected Cash | 97,653,837 | 169,867,144 | (See above proj cash note) |

6 month cash by day of week (mean)



| | Mon | Tue | Wed | Thur | Fri | MEAN MODEL | | | | |
|------|--------|--------|--------|--------|--------|--|-----|---------|---------|-------|
| Aug | 6,864 | 7,285 | 13,346 | 6,858 | 6,304 | Track cash posted by the day of month over a 6 month period. At the end of each month, cut/paste the current report so the one has the most recent 6 months. | | | | |
| | 7,461 | 6,770 | 10,865 | 7,301 | 5,484 | | | | | |
| | 5,292 | 8,499 | 7,468 | 21,356 | 15,617 | | | | | |
| | 4,733 | 7,904 | 22,883 | 12,623 | 6,151 | | | | | |
| | | 9,246 | 2,274 | 12,440 | 5,951 | | | | | |
| Sept | 5,422 | 7,885 | 8,557 | 9,579 | 15,294 | For the new month, calculate the mean (sum minus high/low divided by # days) for the 6 month period that just ended. | | | | |
| | 9,151 | 4,360 | 10,553 | 22,278 | 3,687 | | | | | |
| | 7,916 | 5,790 | 5,755 | 18,271 | 16,432 | | | | | |
| | | | | | | | | | | |
| | 10,846 | | | | | | | | | |
| Oct | | 4,078 | 6,011 | 10,826 | 7,193 | Multiply the daily mean totals by the number of times that day occurs in the upcoming month. Take the sum of the daily totals to get your projected monthly cash | | | | |
| | 3,564 | 7,320 | 20,382 | 13,923 | 3,623 | | | | | |
| | 2,715 | 3,216 | 5,759 | 11,099 | 8,738 | | | | | |
| | 4,086 | 13,504 | 24,085 | 11,515 | 3,504 | | | | | |
| | 8,334 | 4,018 | 13,384 | 10,674 | | | | | | |
| Nov | | | | | 3,536 | | | | | |
| | 7,107 | 4,199 | 7,691 | 8,915 | 8,398 | | | | | |
| | 5,285 | 5,510 | 3,978 | 33,073 | 9,510 | | | | | |
| | 4,912 | 4,577 | 10,877 | 11,997 | 4,436 | | | | | |
| | 6,589 | 4,667 | 11,837 | | 24,016 | | | | | |
| Dec | 663 | 2,982 | 15,329 | 12,559 | 5,445 | projection based on mean | | | | |
| | 7,582 | 5,188 | 18,979 | 12,990 | 4,848 | | | | | |
| | 3,713 | 2,778 | 13,410 | 12,280 | 3,965 | | | | | |
| | 8,633 | 3,218 | | 29,305 | 7,078 | | Day | # times | Mean | Total |
| | 8,158 | 11,871 | | | | | | | | |
| Jan | | | | 8,914 | 9,183 | Mon | 4 | 6,136 | 24,544 | |
| | 9,436 | 3,324 | 10,339 | 7,760 | 5,918 | Tue | 4 | 5,776 | 23,104 | |
| | 5,372 | 5,532 | 25,703 | 7,374 | 6,757 | Wed | 4 | 12,391 | 49,564 | |
| | | 6,601 | 5,403 | 18,411 | 5,216 | Thur | 4 | 13,110 | 52,440 | |
| | 5,710 | 4,588 | 32,089 | 9,339 | 9,281 | Fri | 4 | 7,432 | 29,728 | |
| Mean | 6,136 | 5,776 | 12,391 | 13,110 | 7,432 | Total projected | | | 179,380 | |

Coming up with the number (\$000s)

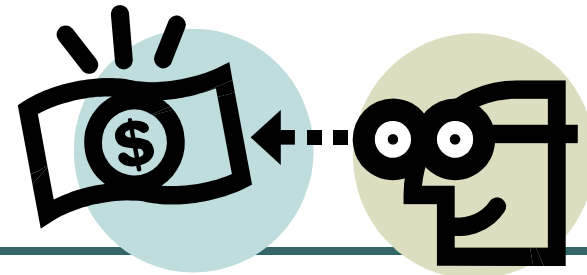


● THE FORECAST RECIPE:

- 3 month calendar projection: \$169,867
- 2 month calendar projection: \$168,881
- 3 month posting projection: \$174,273
- 2 month posting projection: \$177,376
- 6 month daily mean projection: \$179,380
- **AVERAGE:** \$173,955

- **Month Projection: \$173M - \$176M**

Tracking progress



MTD CASH AND PROJECTION BASED ON CURRENT AVERAGE DAILY CASH FOR THE MONTH

| FY 14 | Cash (1) | Days (2) | ADC (3) | |
|-------|-------------|-------------|------------|---|
| Oct | 201,549,735 | 23 | 8,763,032 | NOT USED AS A FORECASTING TOOL THIS TRENDING TOOL IS MOST USEFUL DURING THE 2ND HALF OF THE MONTH, ESPECIALLY AS MONTH END NEARS |
| Nov | 181,343,990 | 20 | 9,067,200 | |
| Dec | 190,310,737 | 21 | 9,062,416 | |
| Jan | 202,450,129 | 21 | 9,640,482 | |
| Feb | 32,655,868 | 5 | 6,531,174 | |
| Mar | | | | |
| Apr | | | | |
| May | | | | |
| Jun | | | | |
| Jul | | | | |
| Aug | | | | |
| Sept | | | | |

mo projectn 130,623,472 ADC x Number of posting days in the current month

- (1) - Current MTD Cash
- (2) - Current MTD posting Days
- (3) - Current MTD Average Daily Cash (ADC)

Another way to track progress



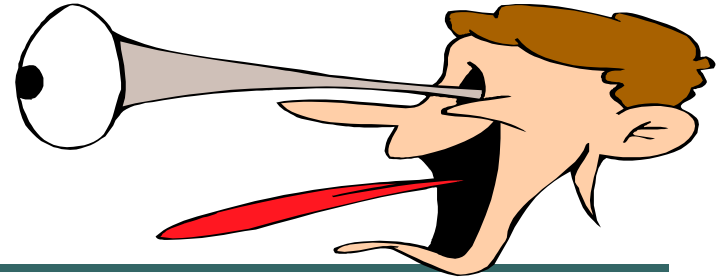
| | Mon | Tue | Wed | Thur | Fri | MEAN MODEL | | | |
|-------|--------|--------|--------|--------|--------|---|---------|---------|---------|
| Aug | | | | 6,858 | 6,304 | | | | |
| | 6,864 | 7,285 | 13,346 | 7,301 | 5,484 | | | | |
| | 7,461 | 6,770 | 10,865 | 21,356 | 15,617 | | | | |
| | 5,292 | 8,499 | 7,468 | 12,623 | 6,151 | | | | |
| | 4,733 | 7,904 | 22,883 | 12,440 | 5,951 | | | | |
| Sept | | | | 9,579 | 15,294 | | | | |
| | 5,422 | 7,885 | 8,557 | 22,278 | 3,687 | | | | |
| | 9,151 | 4,360 | 10,553 | 12,908 | 7,765 | | | | |
| | 7,916 | 5,790 | 5,755 | 18,271 | 16,432 | | | | |
| | 10,846 | | | | | | | | |
| Oct | | 4,078 | 6,011 | 10,826 | 7,193 | | | | |
| | 3,564 | 7,320 | 20,382 | 13,923 | 3,623 | | | | |
| | 2,715 | 3,216 | 5,759 | 11,099 | 8,738 | | | | |
| | 4,086 | 13,504 | 24,085 | 11,515 | 3,504 | | | | |
| | 8,334 | 4,018 | 13,384 | 10,674 | | | | | |
| Nov | | | | | 3,536 | | | | |
| | 7,107 | 4,199 | 7,691 | 8,915 | 8,398 | | | | |
| | 5,285 | 5,510 | 3,978 | 33,073 | 9,510 | | | | |
| | 4,912 | 4,577 | 10,877 | 11,997 | 4,436 | | | | |
| | 6,589 | 4,667 | 11,837 | | 24,016 | | | | |
| Dec | | | | | | | | | |
| | 663 | 2,982 | 15,329 | 12,559 | 5,445 | | | | |
| | 7,582 | 5,188 | 18,979 | 12,990 | 4,848 | | | | |
| | 3,713 | 2,778 | 13,410 | 12,280 | 3,965 | | | | |
| | 8,633 | 3,218 | | 29,305 | 7,078 | | | | |
| | 8,158 | 11,871 | | | | | | | |
| Jan | | | | 8,914 | 9,183 | | | | |
| | 9,436 | 3,324 | 10,339 | 7,760 | 5,918 | Mon | 6,136 | 3,841 | (2,295) |
| | 5,372 | 5,532 | 25,703 | 7,374 | 6,757 | Tue | 5,776 | 5,874 | 98 |
| | | 6,601 | 5,403 | 18,411 | 5,216 | Wed | 12,391 | 10,119 | (2,272) |
| | 5,710 | 4,588 | 32,089 | 9,339 | 9,281 | Thur | 13,110 | 10,119 | (2,991) |
| | 6,136 | 5,776 | 12,391 | 13,110 | 7,432 | Fri | 7,432 | 2,704 | (4,728) |
| Mean | | | | | | | 179,380 | 130,623 | |
| Feb | 3,841 | 5,874 | 10,119 | 10,119 | 2,704 | | | | |
| TREND | 3,841 | 5,874 | 10,119 | 10,119 | 2,704 | Ave total for the day (sum of cash/# entries) | | | |

THIS IS NOT A FORECASTING TOOL
THIS TRENDING TOLL IS BEST USED DURING
THE 2ND HALF OF MONTH AND AS MONTH
END NEARS

CURRENT MONTH
TRACKING

Projected Actual Day Var

One More Way



| | Aetna | BCBS | CIGNA | Commerical Generic | CT Care | Oxford | United HC | Xplants | WC | YHP | Total |
|--------------------|--------------------|--------------------|--------------------|-----------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| Aug-13 | 15,079,459 | 51,982,980 | 14,206,540 | 4,366,691 | 6,093,664 | 3,097,342 | 6,535,759 | 2,022,498 | 1,348,581 | 2,747,334 | 107,480,848 |
| Sep-13 | 14,781,799 | 51,396,654 | 14,420,548 | 4,819,649 | 5,000,733 | 2,944,173 | 6,134,008 | 1,783,895 | 778,324 | 4,607,494 | 106,667,277 |
| Oct-13 | 13,822,905 | 51,323,876 | 12,518,744 | 6,702,509 | 7,364,773 | 3,449,155 | 9,305,253 | 2,510,987 | 1,348,449 | 3,506,951 | 111,853,602 |
| Nov-13 | 11,896,603 | 47,796,074 | 12,802,964 | 4,551,791 | 4,823,587 | 2,136,763 | 7,016,724 | 1,813,836 | 2,202,614 | 4,727,291 | 99,768,247 |
| Dec-13 | 11,600,912 | 52,896,610 | 10,816,208 | 6,256,264 | 7,126,709 | 2,023,009 | 2,715,737 | 1,132,904 | 2,343,995 | 2,948,004 | 99,860,352 |
| Jan-14 | 13,823,357 | 48,452,778 | 14,390,295 | 7,151,462 | 6,316,815 | 3,149,157 | 11,700,087 | 2,629,403 | 1,451,928 | 5,928,413 | 114,993,695 |
| Total | 81,005,035 | 303,848,972 | 79,155,299 | 33,848,366 | 36,726,281 | 16,799,599 | 43,407,568 | 11,893,523 | 9,473,891 | 24,465,487 | 640,624,021 |
| Monthly Ave | 13,500,839 | 50,641,495 | 13,192,550 | 5,641,394 | 6,121,047 | 2,799,933 | 7,234,595 | 1,982,254 | 1,578,982 | 4,077,581 | 106,770,670 |
| Posting Days | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 | 127 |
| Daily Ave | 637,835 | 2,392,512 | 623,270 | 266,523 | 289,183 | 132,280 | 341,792 | 93,650 | 74,598 | 192,642 | 5,044,284 |
| Feb-14 | 2,935,243 | 16,892,273 | 2,323,117 | 617,393 | 1,747,412 | 731,190 | 2,813,612 | 26,149 | 96,446 | 732,284 | 28,915,119 |
| Posting Days | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Daily Ave | 489,207 | 2,815,379 | 387,186 | 102,899 | 291,235 | 121,865 | 468,935 | 4,358 | 16,074 | 122,047 | 4,819,187 |
| Projection | 9,784,143 | 56,307,577 | 7,743,723 | 2,057,977 | 5,824,707 | 2,437,300 | 9,378,707 | 87,163 | 321,487 | 2,440,947 | 96,383,730 |
| Ave | 12,756,698 | 47,850,232 | 12,465,401 | 5,330,451 | 5,783,666 | 2,645,606 | 6,835,837 | 1,872,996 | 1,491,951 | 3,852,833 | 100,885,673 |
| Variance | (2,972,555) | 8,457,345 | (4,721,678) | (3,272,475) | 41,040 | (208,306) | 2,542,869 | (1,785,832) | (1,170,465) | (1,411,886) | (4,501,943) |

The results for our organization

- **THE RESULTS FOR FISCAL YEAR 13**
- Hospital A (1,500 beds) – 98.3% accurate
- Hospital B (350 beds) - 98.6% accurate
- Hospital C (200 beds) - 99.3% accurate

- **OVERALL ACCURACY 98.7%**



Current routine



- Offer forecast on the first or second business day of the month
- Track cash and trends daily
- Update trends five business days prior to month end.
- Communicate problems you know will impact cash as early as you identify them (but don't be "Chicken Little")
- Previous month issues

What I track daily

- Previous day's
 - Census
 - Gross Revenue
 - Payments
 - A/R
 - In-House
 - DNFB
 - Candidate for Billing
 - Active

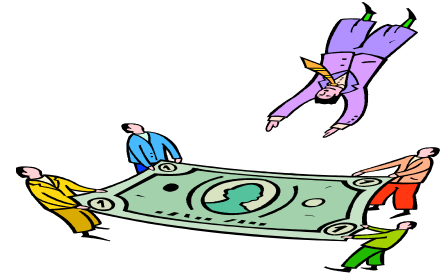


Flies in the ointment

- Computer conversions
- System issues (internal and external)
 - Need to identify and report within the month
- External fiscal year ends
- The finance department
- Census
- Contracting
- Price increases/new programs



Suggestions to start off



- Do this on your own for a while and keep under wraps until you reach a comfort level
- Be slightly conservative in your forecasting at first and update later in month. Better to have last minute good news than bad
- Over time, trust your instincts
- Be an expert on historical trends within your organization

Final thoughts



- Develop your own process and routine
- Have confidence in your projections or don't offer any
- Be bold when the time is right
- Be careful about putting your operational managers under the gun
- Keep tuned into everything that goes on in your shop

GOOD LUCK AND THANK YOU

- QUESTIONS?

