

IntelliMax

Case Study no 2019/09/03

Excessive Visits and IntelliMax Analytics

Background

With the world-wide move away from Fee-for-Service models towards Value-based-healthcare, hospitals continually have to ask the questions about how they can improve the effectiveness of services to patients. One of the “hidden” indicators is often excessive visits by patients and there are often many reasons for this. Generally it would not be expected that a patient visits a hospital more than once a year, unless they suffer from a chronic condition or the condition they are suffering from has not been dealt with adequately.

The purpose of this case Study is to show how this Performance Measure can be reported with IntelliMax.

Introduction

Most hospitals have a form of Performance Measurement in place to review staff members, medical departments, specialty groupings, etc. against a given set of expectations.

This is done to make sure that corrective action can be taken when necessary - and so it's important for management to make sure that the measurement of performance is fair and sensible.

For a patient it is relevant that the condition (s) they attend the hospital for is resolved as quickly and as cost effectively as possible. What patients do not want is to return to hospital again and again, often for the same condition or sometimes for hospital acquired conditions.

For this purpose it is necessary for the hospital to be informed about patients with multiple visits and to be able to assess if these form part of the continuum of care and if there are other patterns discernible from these events.

For this purpose, a review can be done for patients with multiple visits for various procedures, the various cases (DRGs) they are treated for, diagnoses, etc. We can also do the same analysis per doctor to ascertain if there may be specific issues with some doctors.

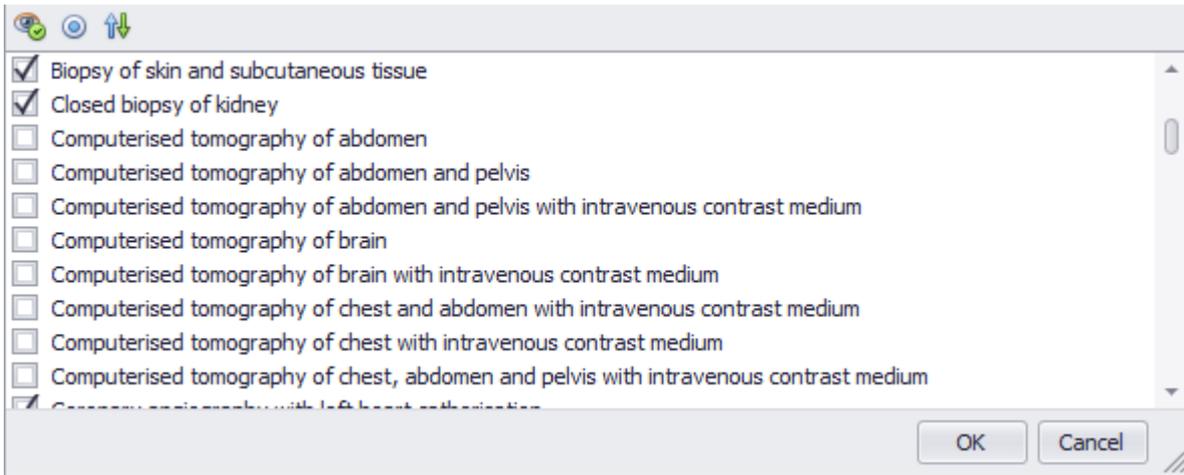
Excessive Visits Overview

Consider the dashboard below, which summarizes the cost and visit counts for the top 100 patients with the highest number of visits for the past year (excluding patients that have been classified as Chronic – these are patients who receive regular treatments for Dialysis, for example):



- Note that all of the patients reported on in this dashboard made at least 6 visits over the past year. The dashboard shows the top values for each category.
- The first thing to notice is that one of the doctors – Doctor 1459 – is involved in a large number of patients visiting multiple times
- It's also interesting to notice that, for these patients, a lot of procedures being done were for “computerized tomography of the xxx” – which suggest that these were cases where the patients made multiple visits while the hospital was gathering data to confirm patient diagnoses.

IntelliMax enables a user (for example, a case manager who is tasked with managing patients who are making large numbers of visits to the hospital) to remove procedures from the dashboard display where the procedure appears to be diagnostic (in which case the multiple visits may be justified) – so the user may decide to remove procedures from the dashboard where the procedure was for computerized tomography, for example:

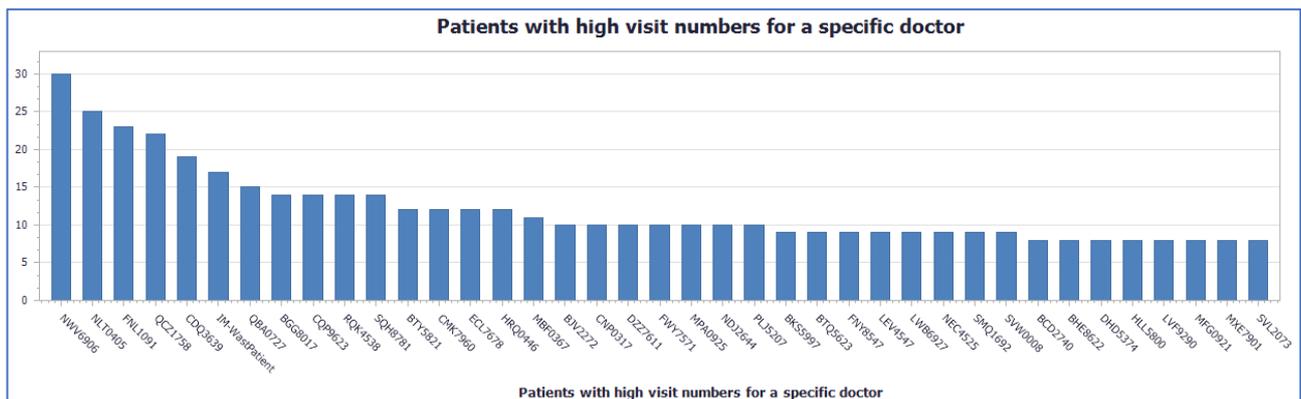


When that is done, and the resulting dashboard looks as follows:



- Note that Doctor 1459 still appears to be involved in a lot of these cases – so the next step would be to drill through to this doctor.

The following report shows the patients with high visit numbers for Doctor 1459 – the number of visits is shown on the y axis:



IntelliMax allows a case manager to investigate each of these patients in detail. The following report shows the visit details for patient 'QCZ1758', who is one of the patients in the report above:

Business_Unit_Name	Cost	ICD_Name	Patient_Code	Profit	Revenue	Service_Name	Visit_Code
VISIT_COUNT		DRG_Description					
admit_date		Chest Pain	Injuries W/O Catast	Intellimax Unknown	Major Affective Dis	Personality Disord	Poisoning/Toxic E
31/07/2011 12:00:00 AM				1			
8/08/2011 12:00:00 AM				1			
17/08/2011 12:00:00 AM					1		
26/08/2011 12:00:00 AM				1			
30/08/2011 12:00:00 AM					1		
5/09/2011 12:00:00 AM				1			
7/09/2011 12:00:00 AM			1				
8/09/2011 12:00:00 AM			1				
18/09/2011 12:00:00 AM				1			
28/09/2011 12:00:00 AM			1				
6/10/2011 12:00:00 AM			1				
1/12/2011 12:00:00 AM							
20/12/2011 12:00:00 AM							
1/01/2012 12:00:00 AM			1				
9/01/2012 12:00:00 AM					2		
10/01/2012 12:00:00 AM				1			
11/01/2012 12:00:00 AM					1		
2/02/2012 12:00:00 AM		1					
27/03/2012 12:00:00 AM					1		
28/03/2012 12:00:00 AM						1	
8/04/2012 12:00:00 AM					1		

- So the patient had a number of interactions with Doctor 1459 around October 2011, during which his DRG's were classified as either 'Unknown', or 'Major Affective Disorder', until eventually, they are twice recorded as 'Chest Pain'.

- A month or two later, in January 2012, the patient again sees Doctor 1459 - initially with DRG's related to drugs or poisoning (which might indicate self-harm in this case, given the context), again with chest pain, then with 'Major Affective Disorder', and then one more time with 'Unknown'.

- A few months later, the patient is again admitted, and this time the DRG is recorded as 'Personality Disorder' and 'Major Affective Disorder'. One final admission is made, where the DRG is classified as 'Unknown'.

This picture is that of a patient not getting better in spite of multiple visits to Doctor 1459.

It is also worth noting that the patient only saw this doctor (so he was not referred to a specialist at any point in the course of treatment).

Hospitals with dedicated case-oriented staff will be well placed to find and address issues such as the example above. The reports above, as well as IntelliMax's open and comprehensive architecture, allows case management staff to quickly identify and investigate cases such as the example discussed here - the IntelliMax screen the below, for example, shows details of all the patient's visits and how a case officer would be able to access all of the details she would need to understand exactly what the history of the case we discussed, would have been:

Single Patient - DEMO - (Ac 2016/11) - 4.0.4.25178 - admin														
Patient: QCZ1758 - Patient 107757														
Visits Episode of Care Patient Demographic Visit Details Measures OR Details Professionals ICD Procedure Contracts Day Of Stay														
Visit Code Product Group												Rows: 274	Menu	
Product Group	Cost Rate	Product	S	Service Da	Period	Versi	DOA	Line	Qu	Adjust	Total Cost	Revenue	Dis	Profi
Visit Code : 173089 (2 items)	\$64.07								2.0000	\$0.00	\$64.07	\$454.23	\$0.00	\$390.16
Visit Code : 173116 (5 items)	\$942.10								13.00	\$0.00	\$942.10	\$1,265.20	\$0.00	\$323.10
Visit Code : 173540 (6 items)	\$4,284.05								23.00	\$0.00	\$4,320.10	\$2,695.88	\$0.00	\$-1,62...
Visit Code : 174118 (6 items)	\$3,078.78								22.00	\$0.00	\$3,114.83	\$3,012.37	\$0.00	\$-102...
Product Group : Accommodation (3 items)	\$2,266.17								5.0000	\$0.00	\$2,302.23	\$133.23	\$0.00	\$-2,16...
Accommodation	\$18.03	Food	So...	2016/01/23	2016/01	Ac		1,612	Cost	3.0000	\$0.00	\$54.08	\$0.00	\$0.00
Accommodation	\$2,248.15	Provide Bed	So...	2016/01/23	2016/01	Ac		1,612	Cost	1.0000	\$0.00	\$2,248.15	\$0.00	\$0.00
Accommodation	\$0.00	DAYBEDFEE	So...	2016/01/23	2016/01	Ac		1,612	Revenue	1.0000	\$0.00	\$0.00	\$133.23	\$0.00
Product Group : Doctor Fee (4 items)	\$212.62								4.0000	\$0.00	\$212.62	\$340.00	\$0.00	\$127.38
Product Group : Lab (3 items)	\$128.06								3.0000	\$0.00	\$128.06	\$569.23	\$0.00	\$441.16
Product Group : Patient services (3 items)	\$162.88								3.0000	\$0.00	\$162.88	\$0.00	\$0.00	\$-162...
Product Group : Radiology (1 item)	\$309.03								1.0000	\$0.00	\$309.03	\$453.00	\$0.00	\$143.97
Radiology	\$309.03	Chest PA (P)	Im...	2015/12/07	2016/01	Ac		1,565	Revenue	1.0000	\$0.00	\$309.03	\$453.00	\$0.00
Product Group : Supplies (6 items)	\$0.00								6.0000	\$0.00	\$0.00	\$1,516.92	\$0.00	\$1,516...
Visit Code : 174967 (5 items)	\$1,041.48								16.00	\$0.00	\$1,065.15	\$1,311.69	\$0.00	\$246.54
Visit Code : 175478 (5 items)	\$777.61								11.00	\$0.00	\$777.61	\$894.15	\$0.00	\$116.54
Visit Code : 176019 (5 items)	\$717.62								10.00	\$0.00	\$717.62	\$741.05	\$0.00	\$23.42
Visit Code : 176616 (4 items)	\$706.29								9.0000	\$0.00	\$706.29	\$531.33	\$0.00	\$-174...
Visit Code : 177241 (4 items)	\$621.72								14.00	\$0.00	\$621.72	\$1,968.25	\$0.00	\$1,346...
Visit Code : 177756 (4 items)	\$744.82								10.00	\$0.00	\$744.82	\$553.23	\$0.00	\$-191...
Visit Code : 178421 (4 items)	\$621.72								13.00	\$0.00	\$621.72	\$1,652.33	\$0.00	\$1,030...
Visit Code : 178660 (5 items)	\$673.29								15.00	\$0.00	\$673.29	\$2,073.25	\$0.00	\$1,399...
Visit Code : 179136 (4 items)	\$572.11								9.0000	\$0.00	\$572.11	\$478.23	\$0.00	\$-93.89
Visit Code : 179629 (5 items)	\$526.15								13.00	\$0.00	\$526.15	\$1,604.22	\$0.00	\$1,078...
Visit Code : 181460 (5 items)	\$788.56								19.00	\$0.00	\$788.56	\$2,551.27	\$0.00	\$1,762...
Visit Code : 181917 (5 items)	\$658.94								16.00	\$0.00	\$658.94	\$2,238.24	\$0.00	\$1,579...
Visit Code : 183170 (5 items)	\$668.96								11.00	\$0.00	\$668.96	\$1,062.17	\$0.00	\$393.21
Visit Code : 183334 (5 items)	\$666.50								10.00	\$0.00	\$666.50	\$657.94	\$0.00	\$-8.56
Visit Code : 183997 (5 items)	\$784.83								14.00	\$0.00	\$784.83	\$1,727.33	\$0.00	\$942.49
Visit Code : 184503 (5 items)	\$918.03								13.00	\$0.00	\$918.03	\$1,285.28	\$0.00	\$367.25
Visit Code : 185081 (5 items)	\$838.06								11.00	\$0.00	\$838.06	\$816.05	\$0.00	\$-22.01

5. Conclusion

It is important for hospitals to be able to identify patients making a very high number of visits to the hospital, because this may indicate an underlying issue with the treatment the patients received, and because multiple visits can end up costing the hospital large amounts of money.

In the example in this case study, it looked as if a specific doctor was involved in a large number of cases where patients had multiple visits – so once this has been identified, hospital management would be able to follow some of these cases up with the doctor, so that the root cause for this issue can be addressed.