



Tutorial on ezDI's ROI Calculator

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CASE-MIX INDEX :

Case Mix Index (CMI) is a relative value assigned to a diagnosis-related group (DRG/MS-DRG) of patients in a medical care environment. A hospital's CMI is derived by adding the relative weights (RW) of all of the actual DRG/MS-DRG cases and then dividing by the total number of cases discharged in a given period.

Hospitals use the CMI to monitor performance. The higher the number, the greater the reimbursement received. Fluctuations in CMI indicates incorrect coding, changes in patient populations, changes in physician practices and personnel, or other conditions.

Blended Rate: The blended rate consists of the hospital-specific rate, based on historical financial data provided annually to CMS by the hospital, and additional factors such as regional labor costs and graduate medical education. The blended rate is expressed in dollar amount specific to each hospital. All hospitals are reimbursed on the basis of the same national RW for each MS-DRG multiplied by the individual hospital's blended rate.

To calculate Return on Investment (ROI) forecast on CMI using ezDI's calculator, follow these steps:

To provide a Return on Investment (ROI) forecast, ezDI calculator calculates the CMI impact for inpatient Medicare claims in the following way.

1. **Open this link in your browser:** <https://www.ezdi.com/calculators/cmi-impact/>
2. **Enter the following details:**
 - a. Set your hospital's Current CMI.
 - b. Set your hospital's blended rate. In our research we found that typical blended rate is \$ 5,500.
 - c. Set total no. of annual Medicare discharges.

Current CMI*	<input type="text" value="1.5"/>
	<i>Please input your current CMI here</i>
\$/Case (Blended rate)*	<input type="text" value="5,500"/>
	<i>Please input your hospital's blended rate (Typical - \$ 5,500)</i>
# Discharges (Medicare)*	<input type="text" value="5,000"/>
	<i>Please input # Discharges (Medicare)</i>

3. Auto-calculation of Inpatient Revenue:

- a. If you have filled the correct CMI, blended rate, and no. of annual Medicare discharges, \$ value of inpatient revenue (Medicare) will be displayed here.

# Discharges (Medicare)*	5,000
	<i>Please input # Discharges (Medicare)</i>
\$ Inpatient revenue (Medicare)	\$41,250,000
	<i>Auto calculated: Please fill CMI, Blended rate, and # Discharges</i>

4. Targeted Improvement in CMI:

- a. Here, you need to enter expected percentage improvement in CMI.

\$ Inpatient revenue (Medicare)	\$41,250,000
	<i>Auto calculated: Please fill CMI, Blended rate, and # Discharges</i>
Expected Improvement of CMI (%)*	5
	<i>Our customers are seeing 2%-7.5% improvement in their CMI.</i>

5. ROI Forecast:

- a. We are now ready to calculate the unknown value. Your screen should look like this.

Expected Improvement of CMI (%)*	5
	<i>Our customers are seeing 2%-7.5% improvement in their CMI.</i>
Potential improvement of CMI due to ezDI software	\$2,062,500
	<i>Auto calculation based on filled CMI, Blended rate, and numbers of discharges</i>

If you need these results and data in your mailbox, enter your work email address in the field at the bottom and we send the same to you right away. You can also contact us on sales@ezDI.com or our toll free number (866) 473-5655 and our team of experts will assist you to calculate your hospitals ROI.

Potential improvement of CMI due to ezDI software	\$2,062,500
	<i>Auto calculation based on filled CMI, Blended rate, and numbers of discharges</i>
Email	abc@yourcomany.com
	<i>We will send you a copy of the result at your email address</i>
	<input type="button" value="Submit"/>

DISCHARGED, NOT FINALLY CODED DAYS :

Discharged, not finally coded (DNFC) days is the number of days a case remains uncoded before being finally coded post-discharge. A higher DNFC impedes the cash flow in hospital.

To calculate Return on Investment (ROI) forecast on DNFC using ezDI's calculator, follow these steps:

1. **Open this link in your browser:** <https://www.ezdi.com/calculators/dnfc-impact/>
2. **Enter the following details:**
 - a. Set your hospital's current DNFC days. If you left it as it is, calculations will be done as per 6 DNFC days.
 - b. Set your hospital's annual average Net Patient Revenue.
 - c. Set your hospital's borrowing or investment interest rate. Typical interest rate is 4%.

Current DNFC (days)*	6	<small>Please input your hospital's DNFC days</small>
\$ Average Net Patient Revenue (Annually)*	\$3,35,023,551	<small>Please fill your hospital's Annual Net Patient Revenue</small>
Interest Rate on borrowing/ Interest rate on Investment (%)*	4	<small>Please input your hospital's Borrowing or Investment Interest Rate (%)</small>

3. Targeted reduction in DNFC Days:

- a. Here, you need to enter the expected reduction in DNFC Days that you are aiming.

Interest Rate on borrowing/ Interest rate on Investment (%)*	4	<small>Please input your hospital's Borrowing or Investment Interest Rate (%)</small>
Expected Improvement of DNFC (days)/Case*	1	<small>Our software can help you reduce DNFC days at your hospital. Please fill the improvement (Low</small>

4. Auto-calculation of cash in hand:

- a. This tab is auto calculated. If you have entered correct numbers in above fields, then you will be able to see the free cash in hand (\$) value here.

Expected Improvement of DNFC (days)/Case*	1
<i>Our software can help you reduce DNFC days at your hospital. Please fill the improvement (Low improvement = 1 Day, High improvement = 2 Days)</i>	
Free cash on hand	\$917,873
<i>Auto calculation</i>	

5. ROI Forecast:

- a. We are now ready to calculate the unknown value. This tab represents interest cost saved per year. Your screen should look like this:

Free cash on hand	\$917,873
<i>Auto calculation</i>	
Interest Cost saved by ezDI per year	\$36,715
<i>Auto calculation</i>	

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Interest Cost saved by ezDI per year	\$36,715
<i>Auto calculation</i>	
Email*	abc@yourcomany.com
<i>We will send you a copy of the result at your email address</i>	
<input type="button" value="Submit"/>	

DENIALS :

A denial rate is calculated by taking the total dollar amount of claims that have been denied by payers within a given time period and then dividing by the total dollar amount of claims submitted within the same time period.

To calculate Return on Investment (ROI) forecast on Denials using ezDI's calculator, follow these steps:

1. **Open this link in your browser:** <https://www.ezdi.com/calculators/denials/>
2. **Enter the following details related to claim denials faced by your hospital:**
 - a. Set claims submitted by your hospital per annum.
 - b. Enter percentage of complex denials faced by your hospital. Typically hospital experiences 10% of its claims being rejected as complex denials.
 - c. Set the input dollar value of complex denials per case. Industry typical is \$5451/case.
 - d. Set the input dollar value of automatic denials per case. Industry typical is \$867/case.
 - e. Enter percentage of complex case denials due to coding error. Industry typical is 81%.

# Claims Submitted per year*	4,910
	<i>Please input your hospital's numbers of claims submitted per year</i>
Complex Denials (%)*	10
	<i>Please input your hospital's Denials (%)</i>
\$ value of denials/case (Complex)*	\$5,451
	<i>Please fill your hospital's \$ value of denials per case.</i>
\$ value of denials/case (Automatic)*	\$867
	<i>Please fill your hospital's \$ value of automatic denials per case. Industry typical is \$ 867</i>
Complex Coding Error in denials (%)*	80
	<i>Please input your hospital's % of Coding Error in denials, Industry Typical is 81%</i>

3. Enter the following details related to claim reworked and resubmitted by your hospital:
- Set your hospital's percentage of denials reworked and resubmitted out of all claims denied. Industry typical for this field is 65%.
 - Set your hospital's cost to rework a denial. Industry typical is \$ 25/case.
 - Set your hospital's "days to handle a rejection". Industry typical is 30 days.
 - Set % of denials that gets rejected out of total claims (even after appeal). Industry standard ranges from 0.18% to 3%.

Complex Coding Error in denials (%)*	80	<input type="button" value="v"/>
<i>Please input your hospital's % of Coding Error in denials, Industry Typical is 81%</i>		
Denials Reworked & Resubmitted (%)*	100	<input type="button" value="v"/>
<i>Please input your hospital's % Denials Reworked & Resubmitted, Industry typical is 65%</i>		
Cost to rework a denial (\$)*	\$25	<input type="button" value="v"/>
<i>Please input your hospital's cost to rework a denial, Industry Typical is \$ 25</i>		
Time to Handle a Rejection (days)/Internal rate of return (IRR)*	30	<input type="button" value="v"/>
<i>Industry Typical is 30 Days</i>		
% Denials Rejected of Total Claims (even after Appeal)*	0.6	<input type="button" value="v"/>
<i>Industry Typical is 0.18% to 3%</i>		

4. Enter your hospital's borrowing rate:
- Set the "interest rate of return" faced by your hospital. Typical industry average is 4%.

% Denials Rejected of Total Claims (even after Appeal)*	0.6	<input type="button" value="v"/>
<i>Industry Typical is 0.18% to 3%</i>		
Interest Rate/ Internal rate of return (IRR)*	4	<input type="button" value="v"/>

CODER PRODUCTIVITY:

Coder productivity is defined as the time required to code a patient record. According to survey done by AHIMA, most of the coders spend 40% of their time doing unproductive things. Coder productivity is one of the critical Key Performance Indicator post ICD-10 implementation. Don't sweat it by looking the length of the Coder productivity calculator, it's more simple than it looks. Most of the fields are auto calculated, So let's get started.

To calculate Return on Investment (ROI) forecast on Denials using ezDI's calculator, follow these steps:

1. **Open this link in your browser:** <https://www.ezdi.com/calculators/coder-productivity/>
2. **Enter the following details related to coders of your hospital:**
 - a. According to your hospital's current workflow, select one from the drop down in the first tab.
 - b. Set your hospitals no. of In-house inpatient coders (Full Time Employees).
 - c. Set your hospitals No. of In-house Emergency Department(ED) and Outpatient (OP) coders (Full Time Employees).
 - d. Set pay rate for In-house Inpatient coder per hour in fourth field.
 - e. Set pay rate for in-house Emergency department and Outpatient coder per hour.
 - f. Set your hospital's overhead coding staff. Remember, this field is in percentage form.

Do you have coders who are (Select One)*	In-house
No. of In-house IP coders (FTE)*	5
No. of In-house ED and OP coders (FTE)*	5
Pay rate for In-house IP coder per hour (\$/hr)*	\$25
Pay rate for in-house ED and OP coder per hour	\$15
Over-head (%)*	15

- 3. Enter the following details related to cases coded by coders of your hospital:**
- Set your hospital's numbers of inpatient cases coded in-house per year.
 - Set your hospital's numbers of ED or OP cases coded in-house per year.
 - Next, select one from drop-down i.e how you pay for outsourced work - By hour or By case?

No. of IP cases coded in-house per year*	15,000
No. of ED or OP cases coded in-house per year*	100,000
Cost per in-house coded IP case (\$ per case)	\$260 <i>Auto calculation</i>
Price per in-house coded ED or OP case (\$ per case)	\$23.4 <i>Auto calculation</i>
Total in-house annual cost	\$6,240,000 <i>Auto calculation</i>
For Out-sourced do you pay (Select One)*	By Hour ▼

- 4. Enter the following details for "Outsourced work paid on hourly basis"**
- Set the no. of outsourced inpatient coders.
 - Set the no. of outsourced ED and OP coders.
 - Set the pay rate for outsourced IP coder per hour (\$/hr).
 - Set the pay rate for outsourced ED and OP coder per hour (\$/hr).
 - Set no. of IP cases coded by out-sourced coder per year.
 - Set no. of ED or OP cases coded by out-sourced coder per year..

For outsourced coders paid on "Hourly basis"	
No. of outsourced IP coders*	<input type="text" value="4"/>
No. of outsourced ED and OP coders*	<input type="text" value="6"/>
Pay rate for outsourced IP coder per hour (\$/hr)*	<input type="text" value="\$40"/>
Pay rate for outsourced ED and OP coder per hour (\$/hr)*	<input type="text" value="\$20"/>
No. of IP cases coded by out-sourced coder per year*	<input type="text" value="5,000"/>
No. of ED or OP cases coded by out-sourced coder per year*	<input type="text" value="20,000"/>
Annual out-sourced IP coding cost	<input type="text" value="\$332,800"/> <i>Auto calculation</i>
Annual out-sourced ED and OP coding cost	<input type="text" value="\$249,600"/> <i>Auto calculation</i>
Total out-sourced annual cost (pay by hr)	<input type="text" value="\$582,400"/> <i>Auto calculation</i>

5. Enter the following details for "Outsourced work paid on case basis"
- Set the price per inpatient case.
 - Set the price per ED or OP case.
 - Set your hospital's no. of annual Inpatient cases per year.
 - Set the numbers of annual ED or OP cases.
 - Rest of the fields are auto-calculated.

For outsourced work paid on "case basis"

Price per IP case (\$ per case)*	<input type="text" value="\$15"/>
Price per ED or OP case (\$ per case)*	<input type="text" value="\$3"/>
No. of IP cases per year*	<input type="text" value="15,000"/>
No. of ED or OP cases per year*	<input type="text" value="100,000"/>
Annual out-sourced IP coding cost	<input type="text" value="\$225,000"/> <i>Auto calculation</i>
Annual out-sourced ED or OP coding cost	<input type="text" value="\$300,000"/> <i>Auto calculation</i>
Total out-sourced annual cost (pay by case)	<input type="text" value="\$525,000"/> <i>Auto calculation</i>

6. ROI Forecast:

- a. We are now ready to calculate the unknown value. Your screen should look like this:

Total out-sourced annual cost (pay by case)	<input type="text" value="\$525,000"/> <i>Auto calculation</i>
Savings if out-sourced by hr	<input type="text" value="\$5,657,600"/> <i>Auto calculation</i>
Savings if out-sourced by case	<input type="text" value="\$5,715,000"/> <i>Auto calculation</i>

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Savings if out-sourced by case	<input type="text" value="\$5,715,000"/>
	<i>Auto calculation</i>
Email*	<input type="text"/>
	<i>We will send you a copy of the result at your email address</i>
	<input type="submit" value="Submit"/>

Transcription ROI Calculations

A better clinical documentation helps physician improve quality care, a good Medical Transcription Service partner can help you achieve that goal.

To calculate Return on Investment (ROI) forecast on Denials using ezDI's calculator, follow these steps:

1. **Open this link in your browser:** <https://www.ezdi.com/calculators/transcription/>
2. **Enter the following details related to coders of your hospital:**
 - a. Set no. of full time in house Medical Transcriptionist (MT's).
 - b. Set the hourly rate of in house MT's.
 - c. Set the overhead staff (%), if any.
 - d. Set the cost of your current transcription platform.
 - e. Next field is auto-calculated. This field will display annual cost of in house MT's.

In-house MTs

No. of FTE in-house MTs*	<input style="width: 90%;" type="text" value="2.5"/>
Hourly Rate of in-house MTs (\$)*	<input style="width: 90%;" type="text" value="\$12"/>
Overhead (%)*	<input style="width: 90%;" type="text" value="5"/>
Cost of dictation/transcription platform*	<input style="width: 90%;" type="text" value="\$20,000"/>
Annual Cost of in-house MTs (\$)	<input style="width: 90%;" type="text" value="\$394,400"/>

Auto calculation

3. **Enter the following details related to "Outsourced Transcription Services":**
 - a. If you wish to have outsourced your transcription services or some part of it, then set the annual cost of your outsourced transcription.
 - b. Set the rate per line (65 characters) charged by your outsourced vendor.
 - c. Next field is auto calculated. This field shows total annual cost on transcription spending.

- d. Set the total annual lines of transcription (65 characters per line).
- e. Set the rate per line quoted by new vendor.
- f. Set the cost quoted by vendor for new transcription platform.

Out-sourced Transcription Services	
Annual cost of out-sourced transcription*	\$120,000
Rate per line charged by out-sourced vendor*	\$0.10
TOTAL CURRENT ANNUAL COST	\$514,400
	<i>Auto calculation</i>
Total Annual lines of transcription (65 character)*	2,500,000
Rate per line quoted by new vendor*	\$0.07
Cost of dictation/transcription platform*	\$5,000

4. ROI Forecast:

- a. We are now ready to calculate the unknown value. This tabs are auto calculated based on your inputs. First two tabs shows the potential annual cost and annual savings. Next tab shows the return on investment because of your New Transcription Vendor. Your screen should look like this:

New Transcription Vendor	
Potential Annual cost of transcription	\$180,000
Annual Savings	\$334,400
	<i>Auto calculation</i>
ROI %	%2.79
	<i>Auto calculation</i>

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ROI %	<input type="text" value="%2.79"/>
	<i>Auto calculation</i>
Email*	<input type="text" value="abc@yourcomany.com"/>
	<i>We will send you a copy of the result at your email address</i>
	<input type="submit" value="Submit"/>