ACMA Hospital Case Management Research Series

Questions in Case Management

Productivity Measurement – Part 2
Introduction: Productivity Measurement – Part 2

How is productivity of Social Work and RN Case Managers evaluated at your organization? The following report is the second of two installments investigating factors associated with the use of productivity measures for Case Managers. This study looks at the relationship of Case Management structural characteristics with specific productivity measures. The variables utilized in these analyses include: Case Management functions, key departmental outcomes, departmental challenges, and barriers to discharge. These factors are compared to the use of specific productivity measures for Social Work Case Managers and RN Case Managers.

Primary data for this study were collected during the 2009 ACMA National Hospital Case Management Survey. Use of productivity measures is identified using the following question: “How do you measure [Social Work/RN] Case Manager productivity at your organization?” Response choices are as follows:

<table>
<thead>
<tr>
<th>Social Work Case Manager</th>
<th>RN Case Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Number of SW interventions</td>
<td>• Number of patients assessed</td>
</tr>
<tr>
<td>• Case Load</td>
<td>• Number of interventions</td>
</tr>
<tr>
<td>• Placements to outside agencies</td>
<td>• Time increments</td>
</tr>
<tr>
<td>• Psychosocial assessments</td>
<td>• Number of Reviews Completed</td>
</tr>
<tr>
<td>• Patients assisted with Transportation</td>
<td>• Number of interventions per patient</td>
</tr>
<tr>
<td>• Discharges</td>
<td>• Discharges</td>
</tr>
<tr>
<td>• Prevented admissions/ Days saved</td>
<td>• Prevented admissions/ Days saved</td>
</tr>
<tr>
<td>• Variances / Avoidable Days/Delays recorded</td>
<td>• Variances / Avoidable Days/Delays recorded</td>
</tr>
<tr>
<td>• Tracking time increments</td>
<td>• Other (Specify)</td>
</tr>
<tr>
<td>• Other (Specify)</td>
<td></td>
</tr>
</tbody>
</table>

Specific productivity measures for both Social Work and RN Case Managers were found to vary significantly across factors included in this report. It is important to note that the existence of significant relationships does not by extension ensure causality, and many additional factors impact the use of productivity measures. Analytical methods for this study include Chi-square tests of independence. All statistical tests performed used an alpha level of .05.
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- Table 2: Measuring Social Work Discharges – Functional Accountability Comparison
- Graph 3: Measuring Social Work Discharges – Discharge Barriers

Social Work Case Manager External Placements

- Graph 4: Measuring Social Work External Placements – Key Outcomes
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RN Case Manager Number of Reviews Completed

- Graph 10: Measuring RN Number of Reviews Completed – Key Outcomes
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- Graph 14: Measuring RN Variances & Avoidable Days/Delays – Discharge Barriers
EXECUTIVE SUMMARY:

1. Table 1 displays the results of comparing the use of Social Work Case Manager caseload for productivity measurement across Case Management functions.

2. The proportion staff designated as primarily accountable for these functions varies significantly by productivity measurement. For example in Case Management departments measuring Social Work Case Manager caseload, RN Case Managers only are 19% less likely to be primarily responsible for discharge planning. In these departments, functional accountability is more likely to be shared between both RN and Social Work Case Managers.

3. Primary accountability for denials/appeals management is 14% less likely for Case Management Directors. Results show a higher proportion (6% higher) of RN Case Managers are primarily responsible for this function in departments using caseload as a measure of Social Work Case Manager productivity.

4. Collaborative accountability is also higher for the functions of Medicare IM delivery, and utilization review (19% and 11% respectively) for departments utilizing Social Work caseload as a measure of Social Work CM productivity.

QUESTION 1

Research Question:
"How are specific productivity measures related to functional accountability?"

Independent Variable:
Social Work CM productivity measurement: caseload

Dependent Variable:
Case Management functions:
1. Discharge planning
2. Denials/Appeals management
3. Medicare IM delivery
4. Utilization Review

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Functional accountability differed by measurement of Social Work CM caseload
1. $\chi^2 (3, N=348)=35.50, p<0.05$
2. $\chi^2 (2, N=182)=7.76, p<0.05$
3. $\chi^2 (3, N=219)=13.86, p<0.05$
4. $\chi^2 (2, N=274)=35.50, p<0.05$
Table 1: Measuring Social Work Caseload – Functional Accountability Comparison

<table>
<thead>
<tr>
<th>Staff Member Primarily Responsible</th>
<th>RN Case Manager Only</th>
<th>Social Work Case Manager Only</th>
<th>Both RN CM and Social Work CM</th>
<th>Case Management Director Only</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>19% less likely</td>
<td>-</td>
<td>23% more likely</td>
<td>-</td>
<td>-</td>
<td>348</td>
</tr>
<tr>
<td><strong>Discharge Planning</strong> - increased collaborative accountability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6% more likely</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>14% less likely</td>
<td>182</td>
</tr>
<tr>
<td><strong>Denials/Appeals Management</strong> - increased staff involvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24% less likely</td>
<td>-</td>
<td>19% more likely</td>
<td>-</td>
<td>-</td>
<td>219</td>
</tr>
<tr>
<td><strong>Medicare IM Delivery</strong> - increased collaborative accountability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4% less likely</td>
<td>-</td>
<td>11% more likely</td>
<td>-</td>
<td>-</td>
<td>274</td>
</tr>
<tr>
<td><strong>Utilization Review</strong> - increased collaborative accountability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY:

1. Departments using Social Work caseload as a productivity measure are significantly more likely to indicate that CC capture, case mix, and patient satisfaction are key departmental outcomes than departments who do not utilize this productivity measure.

- NOTE: For graphs concerning key outcomes (1, 4, 6, 7, 8, 10, 12) it may be useful to consider that the Case Management department leadership is responsible for defining both key outcomes and productivity measures used for staff, ideally striving to align these two elements. It may be useful to review these findings considering the productivity measures leaders have used to align staff priorities with key departmental outcomes.

QUESTION 2

Research Question:
“How are specific productivity measures related to departmental outcomes?”

Independent Variable:
Social Work CM productivity measurement: caseload

Dependent Variable:
Departmental Key Outcomes:
1. CC Capture
2. Case Mix
3. Patient Satisfaction

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of key departmental outcomes differed by measurement of Social Work CM caseload

1. $\chi^2 (1, N=359)=4.23, p<0.05$
2. $\chi^2 (1, N=359)=4.22, p<0.05$
3. $\chi^2 (1, N=359)=6.59, p<0.05$
Graph 1: Measuring Social Work Caseload - Key Outcomes

*Departments measuring Social Work CM caseload are significantly more likely to report this is a key departmental outcome (p<0.05).

Social Work CM (n=359)
EXECUTIVE SUMMARY:

1. Graph 2 displays the relationship between Social Work caseload measurement and discharge barriers.

2. Case Management departments using Social Work caseload as a productivity measure are significantly more likely to identify un/underinsured patients as a challenging barrier to discharge than departments not utilizing this productivity measure.

- NOTE: For graphs concerning discharge barriers & challenges, it may be useful to consider that productivity measures create, to some extent, staff focus, and relate to the challenges and barriers considered most important or problematic.

Research Question:
“How are specific productivity measures related to discharge barriers?”

Independent Variable:
Social Work CM productivity measurement: caseload

Dependent Variable:
Departmental Discharge Barriers:
1. Un/Underinsured Patients

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of departmental discharge barriers differed by measurement of Social Work CM caseload

1. $\chi^2 (1,N=357)=5.16, p<0.05$
Graph 2: Measuring Social Work Caseload - Discharge Barriers

*Departments measuring Social Work CM caseload are significantly more likely to report this measure is a challenging discharge barrier (p<0.05).
EXECUTIVE SUMMARY:

1. Table 3 includes results of comparing the use of Social Work Case Manager discharges as a productivity measure across Case Management functions.

2. For departments utilizing discharges as a productivity measure for Social Workers, discharge planning, Medicare IM delivery, and utilization review show an increase in collaborative accountability (7%, 18%, and 10% respectively).

Table 2: Measuring Social Work Discharges – Functional Accountability Comparison

Research Question:
“How are specific productivity measures related to functional accountability?”

Independent Variable:
Social Work CM productivity measurement: discharges

Dependent Variable:
Case Management functions:
1. Discharge planning
2. Medicare IM delivery
3. Utilization Review

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Functional accountability differed by measurement of Social Work CM discharges
1. \( \chi^2 (3, N=348)=23.93, p<0.05 \)
2. \( \chi^2 (3, N=219)=12.99, p<0.05 \)
3. \( \chi^2 (3, N=274)=7.84, p<0.05 \)
## Table 2: Measuring Social Work Discharges – Functional Accountability Comparison

<table>
<thead>
<tr>
<th>Staff Member Primarily Responsible</th>
<th>RN Case Manager Only</th>
<th>Social Work Case Manager Only</th>
<th>Both RN CM and Social Work CM</th>
<th>Case Management Director Only</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Planning - increased collaborative accountability</td>
<td>15% less likely</td>
<td>-</td>
<td>7% more likely</td>
<td>-</td>
<td>348</td>
</tr>
<tr>
<td>Medicare IM Delivery - increased collaborative accountability</td>
<td>22% less likely</td>
<td>-</td>
<td>18% more likely</td>
<td>-</td>
<td>219</td>
</tr>
<tr>
<td>Utilization Review - increased collaborative accountability</td>
<td>8% less likely</td>
<td>-</td>
<td>10% more likely</td>
<td>-</td>
<td>274</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY:

1. Graph 3 displays the relationship between the use of Social Work discharges as a productivity measure and discharge barriers.

2. Case Management departments using this productivity measure for social workers are significantly more likely to identify un/underinsured patients as a challenging barrier to discharge than departments not utilizing Social Work discharges as a measure of Social Work Case Manager productivity.

Research Question:
“How are specific productivity measures related to discharge barriers?”

Independent Variable:
Social Work CM productivity measurement: discharges

Dependent Variable:
Departmental Discharge Barriers:
  1. Un/Underinsured Patients

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of departmental discharge barriers differed by measurement of Social Work CM discharges

1. $\chi^2 (1, N=357)=4.51, p<0.05$
Graph 3: Measuring Social Work Discharges – Discharge Barriers

*Departments measuring Social Work CM discharges are significantly more likely to report this measure is a challenging discharge barrier (p<0.05).
EXECUTIVE SUMMARY:

1. As shown in Graph 4, departments using external placements to measure Social Work Case Manager productivity are significantly more likely to identify case mix and discharge timeliness as key departmental outcomes than departments not utilizing this productivity measure.
Graph 4: Measuring Social Work External Placements – Key Outcomes

*Departments measuring Social Work CM external placements are significantly more likely to report this measure is a key departmental outcome (p<0.05).
EXECUTIVE SUMMARY:

1. The use of external placements as a Social Work Case Manager productivity measure is also significantly related to the identification of certain challenging discharge barriers.

2. Guardianship/conservatorship and SNF placement are significantly more likely to be reported as challenging barriers to discharge in departments that use Social Work external placements as a productivity measure compared to departments that do not (see Graph 5).

Research Question:
“How are specific productivity measures related to discharge barriers?”

Independent Variable:
Social Work CM productivity measurement: external placements

Dependent Variable:
Departmental Discharge Barriers:
1. Guardianship/Conservatorship
2. SNF Placement

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of departmental discharge barriers differed by measurement of Social Work CM external placements

1. $\chi^2 (1, N=357)=5.32, p<0.05$
2. $\chi^2 (1, N=357)=4.37, p<0.05$
Graph 5: Measuring Social Work External Placements – Discharge Barriers

*Departments measuring Social Work CM external placements are significantly more likely to report this measure is a challenging discharge barrier (p<0.05).
EXECUTIVE SUMMARY:

1. **Significant relationships exist** between the use of variances and avoidable days/delays recorded as a Social Work Case Manager productivity measure and responsibility allocation for certain Case Management functions.

2. As shown in Table 3, **discharge planning, utilization review, and referrals to hospice** show an increased collaborative accountability between RN and Social Work Case Managers (16%, 12%, and 13% respectively).

3. The **management of RAC retractions/appeals (RACs)** shows an increased staff involvement (9% more likely) in departments measuring Social Work Case Manager variances and avoidable days/delays recorded.

**Table 3: Measuring Social Work Variances & Avoidable Days/Delays – Functional Accountability Comparison**

| Research Question: | "How are specific productivity measures related to functional accountability?"
|---------------------|--------------------------------------------------------
| **Independent Variable:** | Social Work CM productivity measurement: variances & avoidable days/delays recorded
| **Dependent Variable:** | Case Management functions:
| 1. Discharge planning | 2. Managing RAC retractions/appeals
| 3. Utilization Review | 4. Referrals to Hospice
| **Statistical Procedure:** | Chi-squared test of independence
| **Significant Results:** | Functional accountability differed by measurement of Social Work CM variances & avoidable days/delays recorded
| 1. $\chi^2 (3, N=348)=17.29, p<.05$ | 2. $\chi^2 (2, N=110)=7.17, p<.05$
| 3. $\chi^2 (2, N=274)=6.72, p<.05$ | 4. $\chi^2 (2, N=334)=11.23, p<.05$
### Table 3: Measuring Social Work Variances & Avoidable Days/Delays – Functional Accountability Comparison

<table>
<thead>
<tr>
<th>Staff Member Primarily Responsible</th>
<th>RN Case Manager Only</th>
<th>Social Work Case Manager Only</th>
<th>Both RN CM and Social Work CM</th>
<th>Case Management Director Only</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>16% less likely</td>
<td>-</td>
<td>16% more likely</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Discharge Planning</strong> - increased collaborative accountability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9% more likely</td>
<td>-</td>
<td>-</td>
<td>11% less likely</td>
<td></td>
<td>348</td>
</tr>
<tr>
<td><strong>RACs</strong> - increased staff involvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>110</td>
</tr>
<tr>
<td>12% less likely</td>
<td>-</td>
<td>12% more likely</td>
<td>-</td>
<td>-</td>
<td>274</td>
</tr>
<tr>
<td><strong>Utilization Review</strong> - increased collaborative accountability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12% less likely</td>
<td>-</td>
<td>13% more likely</td>
<td>-</td>
<td>-</td>
<td>334</td>
</tr>
<tr>
<td><strong>Referrals to Hospice</strong> - increased collaborative accountability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY:

1. The use of Social Work Case Manager variances and avoidable days/delays recorded as a productivity measure is also significantly associated with some key departmental outcomes.

2. As shown in Graph 6, the use of avoidable days/delays, case mix, DRG coding, and patient satisfaction as key outcome measures is significantly more likely in departments using this productivity measure than in departments that do not.

Research Question:
"How are specific productivity measures related to departmental outcomes?"

Independent Variable:
Social Work CM productivity measurement: variances & avoidable days/delays recorded

Dependent Variable:
Departmental Key Outcomes:
1. Avoidable days/delays
2. Case Mix
3. DRG Coding
4. Patient Satisfaction

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of key departmental outcomes differed by measurement of Social Work CM variances & avoidable days/delays recorded

1. $\chi^2 (1, N=359)=10.56, p<0.05$
2. $\chi^2 (1, N=359)=11.27, p<0.05$
3. $\chi^2 (1, N=359)=4.00, p<0.05$
4. $\chi^2 (1, N=359)=5.85, p<0.05$
Graph 6: Measuring Social Work Variances & Avoidable Days/Delays – Key Outcomes

*Departments measuring Social Work CM variances & avoidable days/delays recorded are significantly more likely to report this is measure is a key departmental outcome (p<0.05).
EXECUTIVE SUMMARY:

1. Table 4 displays results of comparing the use of RN Case Manager discharges as a productivity measure across Case Management functions.

2. Discharge planning, referrals to home health, and referrals to hospice show an increased RN Case Manager only involvement (9%, 25%, and 15% respectively) in departments using discharges to measure RN Case Manager productivity.

Research Question:
“How are specific productivity measures related to functional accountability?”

Independent Variable:
RN CM productivity measurement: discharges

Dependent Variable:
Case Management functions:
1. Discharge planning
2. Referrals to Home Health
3. Referrals to Hospice

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Functional accountability differed by measurement of RN CM discharges
1. $\chi^2 (3, N=377)=22.51, p<0.05$
2. $\chi^2 (2, N=362)=26.48, p<0.05$
3. $\chi^2 (2, N=363)=13.10, p<0.05$
**Table 4: Measuring RN Discharges – Functional Accountability Comparison**

<table>
<thead>
<tr>
<th>Staff Member Primarily Responsible</th>
<th>RN Case Manager Only</th>
<th>Social Work Case Manager Only</th>
<th>Both RN CM and Social Work CM</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 % more likely</td>
<td>18% less likely</td>
<td>7% more likely</td>
<td></td>
<td></td>
</tr>
<tr>
<td>increased Nurse involvement - <strong>Discharge</strong></td>
<td><strong>Planning</strong> - increased collaborative accountability</td>
<td></td>
<td>377</td>
<td></td>
</tr>
<tr>
<td>25% more likely</td>
<td>13% less likely</td>
<td>12% less likely</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Referrals to Home Health</strong> - increased Nurse involvement</td>
<td></td>
<td></td>
<td>362</td>
<td></td>
</tr>
<tr>
<td>15% more likely</td>
<td></td>
<td>12% less likely</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Referrals to Hospice</strong> - increased Nurse involvement</td>
<td></td>
<td></td>
<td>363</td>
<td></td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY:

1. The use of number of interventions as a measure of RN Case Manager productivity is significantly associated with an increased focus on inappropriate admissions, quality issues, and readmissions as key departmental outcomes.
Graph 7: Measuring RN Number of Interventions – Key Outcomes

*Departments measuring RN CM number of interventions are significantly more likely to report this is measure is a key departmental outcome (p<0.05).

- **Inappropriate Admissions**: 76%* measures vs. 66% does not measure.
- **Quality Issues**: 37%* measures vs. 23% does not measure.
- **Readmissions**: 79%* measures vs. 68% does not measure.
EXECUTIVE SUMMARY:

1. As shown in Graph 8, using the number of patients assessed as an RN productivity measure is significantly associated with certain key Case Management department outcomes.

2. Caseload/case review, case mix, quality issues, and readmissions are all significantly more likely to be identified as key outcomes in departments using this RN productivity measure than in departments that do not.

Graph 8: Measuring RN Number of Patients Assessed – Key Outcomes

Research Question:
“How are specific productivity measures related to departmental outcomes?”

Independent Variable:
RN CM productivity measurement: number of patients assessed

Dependent Variable:
Departmental Key Outcomes:
1. Caseload/case review
2. Case mix
3. Quality issues
4. Readmissions

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of key departmental outcomes differed by measurement of RN CM number of patients assessed

1. $\chi^2 (1, N=392)=10.47, p<0.05$
2. $\chi^2 (1, N=392)=4.16, p<0.05$
3. $\chi^2 (1, N=392)=4.85, p<0.05$
4. $\chi^2 (1, N=392)=5.62, p<0.05$
Graph 8: Measuring RN Number of Patients Assessed – Key Outcomes

*Departments measuring RN CM number of patients assessed are significantly more likely to report this is measure is a key departmental outcome (p<0.05).
EXECUTIVE SUMMARY:

1. As shown in Graph 9, using the number of patients assessed as an RN productivity measure is significantly associated with certain key Case Management challenges.

2. The identification of discharge barriers as a top challenge is significantly less likely in departments measuring this RN Case Manager productivity measure than in departments that do not.

Research Question:
“How are specific productivity measures related to top challenges?”

Independent Variable:
RN CM productivity measurement: number of patients assessed

Dependent Variable:
Departmental top challenges:
1. Discharge barriers

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of top challenges differed by measurement of RN CM number of patients assessed

1. $\chi^2 (1, N=392)=5.82, p<0.05$
Graph 9: Measuring RN Number of Patients Assessed – Challenges

*Departments measuring RN CM number of patients assessed are significantly less likely to report this measure is a top departmental challenge (p<0.05).
EXECUTIVE SUMMARY:

1. When used as a productivity measure, the number of reviews completed by RN Case Managers is significantly related to certain Case Management outcomes.

2. Avoidable days/delays, case mix, and physician advisor referrals are significantly more likely to be identified as key departmental outcomes if the number of reviews completed is used to measure RN Case Manager productivity (see Graph 10).

Research Question:
“How are specific productivity measures related to departmental outcomes?”

Independent Variable:
RN CM productivity measurement: number of reviews completed

Dependent Variable:
Departmental Key Outcomes:
1. Avoidable days/delays
2. Case mix
3. Physician advisor referrals

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of key departmental outcomes differed by measurement of RN CM number of reviews completed

1. $\chi^2 (1, N=392)=5.45, p<0.05$
2. $\chi^2 (1, N=392)=10.38, p<0.05$
3. $\chi^2 (1, N=392)=5.28, p<0.05$
Graph 10: Measuring RN Number of Reviews Completed –
Key Outcomes

*Departments measuring RN CM number of reviews completed are significantly more likely to report this measure is a key departmental outcome (p<0.05).
EXECUTIVE SUMMARY:

1. As shown in Graph 11, the measurement of completed case reviews by RN Case Managers is also **significantly associated** with the identification of certain discharge barriers.

2. The identification of *un/underinsured patients* and *attending physician not in agreement with the discharge* are **significantly more likely** in departments utilizing this productivity measure than in departments who do not.

**Research Question:**
“How are specific productivity measures related to discharge barriers?”

**Independent Variable:**
RN CM productivity measurement: number of reviews completed

**Dependent Variable:**
Departmental Discharge Barriers:
1. Un/Underinsured Patients
2. Attending physician not in agreement with discharge

**Statistical Procedure:**
Chi-squared test of independence

**Significant Results:**
Identification of departmental discharge barriers differed by measurement of RN CM number of reviews completed

1. \( \chi^2 (1, N=390)=5.16, p<0.05 \)
2. \( \chi^2 (1, N=390)=4.92, p<0.05 \)
Graph 11: Measuring RN Number of Reviews Completed – Discharge Barriers

*Departments measuring RN CM number of reviews completed are significantly more likely to report this measure is a challenging discharge barrier (p<0.05).

RN CM (n=390)
EXECUTIVE SUMMARY:

1. Graph 12 displays the relationship between Case Management department outcomes and the RN Case Manager productivity measure, prevented admissions/days saved.

2. Inappropriate admissions, observation status, patient satisfaction, quality issues, and readmissions are significantly more likely to be focused upon in Case Management departments using this measure of RN Case Manager productivity than in departments in which it is not used.

Research Question:
“How are specific productivity measures related to departmental outcomes?”

Independent Variable:
RN CM productivity measurement: prevented admissions/days saved

Dependent Variable:
Departmental Key Outcomes:
1. Inappropriate admissions
2. Observation status
3. Patient satisfaction
4. Quality issues
5. Readmissions

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of key departmental outcomes differed by measurement of RN CM prevented admissions/days saved

1. $\chi^2 (1, N=392)=5.55, p<0.05$
2. $\chi^2 (1, N=392)=4.85, p<0.05$
3. $\chi^2 (1, N=392)=5.85, p<0.05$
4. $\chi^2 (1, N=392)=4.85, p<0.05$
5. $\chi^2 (1, N=392)=5.62, p<0.05$
Graph 12: Measuring RN Prevented Admissions/Days Saved – Key Outcomes

*Departments measuring RN CM prevented admissions/days saved are significantly more likely to report this measure is a key departmental outcome (p<0.05).
EXECUTIVE SUMMARY:

1. Measuring RN Case Manager prevented admissions/days saved is also significantly associated with the identification of patient flow/throughput as a top challenge faced by the Case Management department.

2. Departments using this RN Case Manager productivity measure are significantly more likely to report patient flow/throughput is a challenge compared to departments in which this measure is not utilized.

Research Question:
“How are specific productivity measures related to top challenges?”

Independent Variable:
RN CM productivity measurement: prevented admissions/days saved

Dependent Variable:
Departmental top challenges:
1. Patient flow/throughput

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of top challenges differed by measurement of RN CM prevented admissions/days saved

1. $\chi^2 (1, N=392) = 4.27, p < 0.05$
Graph 13: Measuring RN Prevented Admissions/Days Saved - Challenges

*Departments measuring RN CM prevented admissions/days saved are significantly more likely to report this measure is a top departmental challenge (p<0.05).
EXECUTIVE SUMMARY:

1. As shown in Table 5, for departments measuring RN Case manager variances and avoidable days/delays recorded, the functions of case facilitation and referrals to home health show an increased RN Case Manager only involvement and accountability (9% and 11% respectively).

Research Question:
“How are specific productivity measures related to functional accountability?”

Independent Variable:
RN CM productivity measurement: variances & avoidable days/delays recorded

Dependent Variable:
Case Management functions:
1. Case facilitation
2. Referrals to Home Health

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Functional accountability differed by measurement of RN CM variances & avoidable days/delays recorded
1. $\chi^2 (3, N=373)=9.56, p<0.05$
2. $\chi^2 (2, N=362)=7.36, p<0.05$

Table 5: Measuring RN Variances & Avoidable Days/Delays – Functional Accountability Comparison
Table 5: Measuring RN Variances & Avoidable Days/Delays – Functional Accountability Comparison

<table>
<thead>
<tr>
<th>Staff Member Primarily Responsible</th>
<th>RN Case Manager Only</th>
<th>Social Work Case Manager Only</th>
<th>Both RN CM and Social Work CM</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Facilitation - increased Nurse involvement</td>
<td>9% more likely</td>
<td>-</td>
<td>7% less likely</td>
<td>373</td>
</tr>
<tr>
<td>Referrals to Home Health - increased Nurse Involvement</td>
<td>11% more likely</td>
<td>11% less likely</td>
<td>-</td>
<td>362</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY:

1. As shown in Graph 14, measuring RN Case Manager productivity using variances and avoidable days/delays recorded is significantly related to the identification of discharge barriers, such that Case Management departments using this productivity measure are significantly more likely to report family/patient related delays are a challenging barrier to discharge.

QUESTION 4

Research Question:
“How are specific productivity measures related to discharge barriers?”

Independent Variable:
RN CM productivity measurement: variances & avoidable days/delays recorded

Dependent Variable:
Departmental Discharge Barriers:
1. Family/Patient related delays

Statistical Procedure:
Chi-squared test of independence

Significant Results:
Identification of departmental discharge barriers differed by measurement of RN CM variances & avoidable days/delays recorded

1. $\chi^2 (1, N=390)=4.92, p<0.05$
Graph 14: Measuring RN Variances & Avoidable Days/Delays – Discharge Barriers

*Departments measuring RN CM variances & avoidable days/delays recorded are significantly more likely to report this is measure is a challenging discharge barrier (p<0.05).
Question Index

- QUESTION 1: For each of these functions, please use these choices to tell me which department primarily owns the function, and if it is performed by case management, who within the Case Management department is primarily responsible for performing the function. (only Case Management personnel have been included for comparison)

  CHOICES
  - RN Case Manager
  - Social Work Case Manager
  - Both RN and Social Work Case Manager
  - Case Management Director

  FUNCTIONS
  - Case Facilitation
  - Denials/Appeals
  - Discharge Planning/Placement
  - Refer Patients to Hospice and Palliative Care
  - Managing RAC retractions/appeals
  - Utilization Review
  - Referrals to Home Health
  - IM delivery

- QUESTION 2: What are the key outcome measures for your department?
  - Readmissions
  - Patient satisfaction
  - Avoidable Days/Delays
  - Denial/Appeals Management
  - DRG/Coding
  - Observations
  - Inappropriate admissions
  - D/C Timeliness
  - Physician Advisor Referrals
  - Case load/Case review
  - Case Mix Index (CMI)

- QUESTION 3: What would you say are your top two current challenges in the Case Management Department?
  - Discharge barriers
  - Patient flow/Throughput

- QUESTION 4: Please identify the most challenging discharge barriers faced by case management at your organization. (RANK TOP FIVE)
  - Guardianship/Conservatorship
  - Family/patient related delays
  - Attending physician refuses to discharge/transfer patient
  - Patient Uninsured/Underinsured
  - Placement not available – SNF
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