



CASE STUDY

PATIENT CENTRED CARE PROGRAMME (PCC)

OUTCOMES ANALYSES

PRE- AND POST-INTERVENTION

PROBLEM STATEMENT

The mantra that measurement drives management remains true. The biggest problem in healthcare is predicting the unknown and, once done, identifying the correct candidate for a timely intervention to reduce future event risk and costs.

THE SOLUTION

To manage health risk a *Patient Driven Care*[™] (PDC) Programme was established whereby high-risk beneficiaries are identified and managed accordingly. These high-risk beneficiaries are identified by considering claims, authorisation requests and / or biometric information supplied by customer or provider of clinical services. This allows for predictive modelling of individuals identifying their potential event risk in any benefit year. The individuals suffering specific diseases (risk adjusted) or identified with a higher than 80% potential risk for admissions are then contacted and once consent is received, put on an intensive monitoring programme to drive adherence to prescribed care. Even though the funder may not be responsible for total care plan assisting the customer to do the right thing improves clinical outcomes. The aim being to prevent avoidable admissions and re-admissions after discharge which translates into more satisfied customers but also drives down costs.

OUTCOMES OF THE CASE STUDY

This study monitored the effect of the PDC risk management programme by considering cost and event rate before and after intervention.

An outcomes-based approach was followed whereby the cost and event rate pre- and post-intervention was evaluated. An event was defined as an index event of a disease related, or disease identifiable, event. Called a PDC event, it would impact a patient's risk profile for future events with putative interventions to drive risk down. The rate was calculated based on frequency and severity.

The study population consisted of 2 276 beneficiaries who had a (Index event) PDC event (hospital admission) before December of the intervention year. A full year was selected as an intervention period to compare the same months pre- and post-intervention, taking seasonality out of the equation.

The pre-intervention period was from January to December of the prior year, while the post-intervention period dated from January to December of the intervention year. Cost and event rate pre- and post-intervention are considered to measure the full impact of the PDC programme. The study population was defined by only considering customers who were active from January to December over the two-year period on the study population.

A clear reduction in hospital authorisations (part of index event definition) was noted post-intervention compared to pre-intervention, see **Table 1** to **Table 3**. The reduced hospital authorisations resulted in a total cost saving of 21.2% in this specific study population which consisted of the 12-month period of PDC events.

The adjustment for inflation provides a clearer comparison since time value of money should be considered. Note that overall, 24% fewer authorisation requests for hospital admissions were noted for this population post-intervention, compared to the pre-intervention period with a hospital cost saving of 6%, or when adjusting for inflation, a saving of 11%.

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Hospital Authorisations: Pre-and post-intervention (Study population)

| DESCRIPTION | ALL HOSPITAL AUTHORISATIONS | AUTHORISATIONS: CHRONIC CONDITIONS |
|--|-----------------------------|------------------------------------|
| Pre-intervention | 1962 | 1442 |
| Post-intervention | 1493 | 1070 |
| Difference (Pre-and post-intervention) | -469 | -372 |
| Difference (Relative) | -24% | -26% |

Table 1: Hospital authorisations pre- and post-intervention

Table 2 below indicates the type of chronic diseases identified with high risk for hospital events should a patient have suffered an admission before. The intervention was therefore aimed at reducing the future event rate by ensuring adherence to outpatient care and planned admissions only as far as possible. Most of the conditions are cardiovascular related but diabetes carried a specific risk also for cardiovascular admissions over and above other diabetes related risks.

| DISEASES TYPE | AUTHORISATIONS PRE-INTERVENTION | AUTHORISATIONS POST INTERVENTION | DIFFERENCE (COUNT) PRE- AND POST-INTERVENTION | DIFFERENCE (RELATIVE) PRE- AND POST-INTERVENTION |
|--|---------------------------------|----------------------------------|---|--|
| Diabetes (DM1 and DM2) | 285 | 199 | -86 | -30% |
| Hypertension / Cardiovascular disease | 194 | 173 | -21 | -11% |
| Asthma | 226 | 184 | -42 | -19% |
| Hyperlipidaemia / Cardiovascular disease | 139 | 77 | -62 | -45% |
| Cardiomyopathy/Heart failure | 53 | 34 | -19 | -36% |

Table 2: Hospital authorisations per disease type pre-and post-intervention.

Claims: Pre-and post-intervention

The volume and value of claims received after the intervention was significantly reduced (Tables 1 to 3) and translated in a saving for the funder. Of interest was that the total resource use was reduced (21.2%) and medicine expenditure was not increased, even with a drive towards better adherence. This change was ascribed to fewer prescriptions for the treatment of new catastrophic and / or symptomatic events due to prior non-compliance by the high-risk patients.

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Disease specific: Pre-and post-intervention (Claims)

| DISEASES TYPE | COST DIFFERENCE (RELATIVE) PRE- AND POST-INTERVENTION |
|--|--|
| Diabetes (DM1 and DM2) | -11% |
| Hypertension / Cardiovascular Disease | -2% |
| Asthma | -15% |
| Hyperlipidaemia / Cardiovascular Disease | -31% |
| Cardiomyopathy/Heart Failure | -1% |

Table 3: Percentage Difference in Costs per Disease Type

From **Table 3:** The time horizon for intervention outcomes of some diseases is short and, as a result, it is difficult to demonstrate a large benefit in a single subsequent benefit year due to longer outcomes not always in close proximity to intervention. However, the mere fact that all diseases demonstrated a good reduction in costs and event rate speaks to the success of the programme. **The programme prevented patients oscillating in and out of hospital as is often experienced with these high-risk individuals.**

CONCLUSION

The aggressive approach in identifying patients with “high-risk” diseases and actively recruiting them onto a risk management programme resulted in a significant event rate reduction where hospital related events were counted as a proxy of event, as well as a total lower cost exposure for the funder. The success of this patient centric approach is not only a reduction in costs, but the embedded better clinical outcome and improvement in quality of life. Although the latter was not explicitly measured, hospitalisation is a valuable proxy for patient experience. Assisting customers to understand and adhere to their care plans is critical, whether covered by the insurance plan or not. Often patients need frequent nudging to do the right thing and the programme assist in achieving just that.

The patient centred approach including tracking of disease specific goals (asking the patient and making them aware of the importance of achieving goals as set by treating clinician) such as:

- HbA1c (Diabetes)
- Blood Pressure (Cardiovascular disease)
- Peak Flow (Asthma)
- Cholesterol (Hyperlipidaemia)
- New York Heart Association Score (NYH) (Heart failure)

The parameters were collected by the patients' care coordinators (nursing professional) who reached out to patients based on automated alerts triggered by claims rules, voluntary data shared by customers, as well as outreach calls by nurses scheduled for high-risk patients.

Key elements of success are dedicated data collection from all sources (e.g. application questionnaire, underwriting detail, prior admissions and voluntary data sharing by customers) and translating data into automated action supported by a sophisticated IT system, ensuring that care coordinators are alerted to at risk patients on a daily dashboard. Monitoring of those at risk is therefore a constant, translating into early detection and action to nudge customer behaviour change and his or her understanding of the importance of adhering to prescribed care.

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