Value Care Team model in South Africa

Case study

Anja Smith and Atiya Mosam
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## Contents

Acknowledgements iv

Abbreviations v

Executive summary vi

1. Introduction 1
   1.1 Providers and local service delivery 2
   1.2 Patients: onboarding, demographics and management 4

2. Incentivizing quality through payment 7
   2.1 The overall payment model 8
   2.2 Quality metrics and data collection and management 9
   2.3 Payments and incentives 13
   2.4 The link between quality improvement and payment 15

3. Model performance 17
   3.1 Facilitating and inhibiting factors 22
      3.1.1 Regulation and governance 22
      3.1.2 Leadership and management 22
      3.1.3 Providers 23
      3.1.4 Technology 24
      3.1.5 Incentive design, payment and overall financial model 24
      3.1.6 Funding and scaling up 24
   3.2 Suggestions for improvement and lessons learned 25

4. Conclusions 27

References 31

Annex: Provider quality indicators 33
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### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>DBI</td>
<td>Disease Burden Index</td>
</tr>
<tr>
<td>FFS</td>
<td>fee for service</td>
</tr>
<tr>
<td>GEMS</td>
<td>Government Employees Medical Scheme</td>
</tr>
<tr>
<td>GP</td>
<td>general practitioner</td>
</tr>
<tr>
<td>HPCSA</td>
<td>Health Professions Council of South Africa</td>
</tr>
<tr>
<td>ICS</td>
<td>Intelligent Care System</td>
</tr>
<tr>
<td>MDT</td>
<td>multidisciplinary team</td>
</tr>
<tr>
<td>VBC</td>
<td>value-based care</td>
</tr>
<tr>
<td>VCT</td>
<td>Value Care Team</td>
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</table>
Executive summary

PPO Serve was established in March 2015 and registered with the South Africa Council for Medical Schemes in 2022. In September 2019, PPO Serve implemented its second value-based care pilot, known as the Value Care Team (VCT) model, funded by the Government Employees Medical Scheme (GEMS). GEMS is a closed medical insurance scheme offered to civil servants and their families. It is subject to the same regulations as other health insurers. GEMS aims to promote financial sustainability by reducing reliance on hospital-based care.

The VCT model aims to replace the fee-for-service payment system with capitation to promote efficient and cost-effective team-based care, shift care to the primary care setting when appropriate and target social and environmental factors to reduce hospitalizations and length of stay. The four components of the model include a multidisciplinary health care team, a comprehensive risk management strategy, an information technology tool that triggers health interventions and a contract between GEMS and PPO Serve that specifies a risk-adjusted capitation payment and a quality-based payment for providers.

Under the VCT model, chronic disease care is managed at the primary care level for patients in the pilot geographical area in Pretoria North, Gauteng province, South Africa. The programme began with 2300 patients in 2019 and currently covers 5620 people, or about 21% of eligible members. Patient enrolment is voluntary. Enrolled patients are considered at high risk of noncommunicable diseases.

The capitation payment covers a predetermined package of health care services for enrolled patients, adjusted using the patient’s Disease Burden Index. The majority (65%) of the quality-based payment is determined by hospital utilization metrics (i.e. reduction in avoidable admissions, readmissions and length of stay), and 35% of the payment is determined by process measures for primary care level chronic disease care.

The average monthly payment is approximately 115 South African rand (roughly US$ 7.20) per patient, similar to the average fee for service paid by GEMS to the practices; an additional 20% is paid by GEMS to reward accountability and to compensate for managing complex patients. This amounts to a payment of up to 130 South African rand (roughly US$ 8.15) per month per enrolled patient. The best performing health providers receive approximately 240 South African rand (roughly US$ 15.00) per patient monthly. The payment amounts to approximately 25–33% of provider income.
No formal evaluation has been done. Since implementation of its second pilot in 2019, the overall hospital admissions rate was less than predicted for the first three quarters of 2021. The overall number of patient bed days was 7% lower than expected, and the medical admission rate was 29.6% less than expected. However, the surgical admission rate during the same period was 20.5% higher than expected. Without a formal evaluation, it is difficult to attribute these changes to the purchasing arrangements.

This case study provided information to the WHO-OECD publication, *Purchasing for quality chronic care: summary report*. 
1

Introduction
PPO Serve was established in March 2015 in South Africa. In September 2019, PPO Serve implemented its second value-based care (VBC) pilot, known as the Value Care Team (VCT) model, funded by the Government Employees Medical Scheme (GEMS). GEMS is one of the largest private, voluntary health insurers in South Africa. It is a closed medical scheme offered to civil servants and their families. It is governed by a Board of Trustees, managed by third-party administrators and subject to the same regulations as other health insurers. GEMS is experimenting with several VBC models, with the aim to promote financial sustainability by reducing reliance on hospital-based care. The pilot of the VCT model took place in Pretoria North, Gauteng province, South Africa. Patients were voluntarily enrolled from the beginning of 2019 and enrolment is ongoing.

This paper was informed by a review of internal and external presentations, reports and secondary data extracts from the VCT and PPO Serve. Any remaining uncertainties were addressed through six clarifying conversations with the management of PPO Serve and the VCT, participating service providers and members of the multidisciplinary (health) teams (MDTs).

1.1 Providers and local service delivery

In 2022, the VCT model included approximately 17 general practitioners (GPs) working within four general practices in one geographical area. PPO Serve recruited larger practices active in the community. Participation is voluntary; however, once a practice is included in the VCT model, the GPs within the practice are also included by default. The decision to participate in the model was made by the owners of the practice, whether an individual or a group.

Initially, due to regulations that affect group practices and the way in which fees are shared among providers (1, 2), the practices formed a consortium to serve as the legal entity providing services. However, this approach required company-related activities, such as strategic planning, administration, marketing, quality review and financial management. It became evident that much of this was outside the remit of the individual practices. Therefore, PPO Serve contracted with each practice separately, created a local MDT and provided administration, management and data analysis services to each practice in exchange for a management fee.

The MDT is the core of the VCT model. It comprises not only the GPs, who act as team leads, and a local specialist physician but also other health care professionals including physiotherapists, occupational therapists and social workers, who each provide between 0.4 and 0.6 of full-time equivalent care, and palliative care specialists, who are retained when needed.
GPs are closely supported by care coordinators. The three care coordinators for the VCT model (equivalent to 2.5 full-time roles) are registered nurses with experience in intensive care, trauma or hospital care. On average, each care coordinator manages approximately 1100 patients. Practices have lower ratios of patients to care coordinators if they have higher numbers of patients with chronic care needs.

Care coordinators manage patients who have chronic and complex illnesses to ensure they receive optimal care. Using the algorithm-informed action list, care coordinators contact patients by telephone and also visit patients and their families when there is a need for home-based visits to:

- assess disease severity, frailty and social challenges;
- proactively develop care plans and encourage patients to return to the practice (when care is needed) and the MDT to ensure optimal clinical and social care;
- support patients by providing education about their illness and counselling about the importance of adherence to medical advice;
- guide patients through the VCT model and the health system, especially after admissions and crises.

A practice coach acts as a liaison between GPs and care coordinators for the whole VCT. The practice coach focuses on strengthening the MDT and the system to ensure that the MDTs use all available support, with the ultimate goal of ensuring good outcomes for patients.

Multidisciplinary meetings take place regularly. These include meetings between the care coordinator and the GP as well as between the care coordinator and the allied health service providers. These meetings focus on patient management. An additional monthly meeting includes all GPs, care coordinators, allied providers, the palliative care doctor, the practice coach and a representative from PPO Serve. These meetings focus on disseminating knowledge and encouraging education as well as on specific disease areas; they are also used to analyse the impact of the outcomes metrics, the reasons for certain outcomes and to discuss potential improvements. The meetings are not part of the overall incentive structure, but they are compulsory. Furthermore, individual discussions with each doctor regarding their own outcomes are also held, but these assessments are not shared with the larger MDT group as the intention is to develop the peer review process to a point that it is seen as supporting better quality care rather than criticizing an individual.

Vertical linkage to hospital and emergency care is provided by a contracted company offering a 24-hour call centre staffed by registered nurses. The call centre, which is linked to the Intelligent Care System (ICS), assesses and refers patients to appropriate
services, including by arranging emergency transport, if necessary. The ICS summarizes insurance information and clinical data. The area in which the pilot is taking place also has a 24-hour pharmacy.

Hospital care is provided by local private hospitals, although they are not part of the VBC reimbursement model and are reimbursed on a fee-for-service (FFS) basis by GEMS, outside of the overall VCT fee. Hospital admissions are monitored by onsite case managers, who are part of the VCT model and are contracted through a case-management service company. The local specialist physician is also made aware of admissions.

Beyond the health system, local churches coordinate with social workers to assist patients, and plans are under way to bolster support by including community volunteers to offer psychosocial support, such as visits to lonely patients. Social prescribing – that is, encouraging patients to participate in community activities – is not a formal part of the model.

1.2 Patients: onboarding, demographics and management

When patients who are members of GEMS visit a contracted practice or contact GEMS with queries about care, they are invited to join the VCT programme. Patient onboarding is also supported by posters and flyers in participating practices.

If patients consent to participate, they sign a data privacy agreement, in accordance with the Protection of Personal Information Act. Less than 2% of those approached decline to participate. Patients are assigned to a care coordinator affiliated with their GP or practice. The care coordinator registers the patient on the ICS, completes a comprehensive health assessment and evaluates the patient’s health risks. This risk stratification considers the presence of chronic disease, age, functionality and social status (e.g. isolation, financial) and is used by the care coordinator to determine the care plan as well as the extent of interaction needed with the MDT. For example, a newly registered, young, healthy person will have fewer interactions with the MDT.

Patients in the VCT model are stratified by risk into the following groups:

- healthy – people with no significant health challenges (25%);
- at-risk – patients with risk factors for chronic disease and patients who have had one-off hospital admissions (32%);
- chronic – patients with a significant chronic disease (35%);
- complex – patients with multimorbidity (8%).
Patients in the complex and chronic segments have much higher admission rates and account for more hospital bed days than those in the at-risk and healthy segments, so they are prioritized for more intensive management. Additionally, for providers, this segmentation allows for the creation of relatively homogeneous groupings, which assists in calculating the Disease Burden Index (DBI) that ultimately informs remuneration, risk-adjusted outcomes, staffing norms and resource mobilization (Section 2.1).

Algorithms for patient management are based on GEMS funding and treatment protocols, and also highlight when patients require non-hospital-related home visits. A list of patients requiring home visits and follow up calls is created by the ICS for the care coordinators.

During routine management, if a patient has exhausted the outpatient funding available through GEMS and needs hospitalization,\(^1\) the VCT recommends to the insurer outpatient management, such as investigations and home-based monitoring (i.e. remote and home visits).

In the event of hospitalization, onsite case managers follow up and 3 days after admission meet with the treating hospital doctor to discuss the hospital care plan. Through the ICS, the patient’s care coordinator is able to see the hospital treatment and plan and follow the patient’s progress. The onsite case manager and the care coordinator liaise about the patient’s progress, and the care coordinator relays information to the GP. When indicated and clinically suitable, ongoing subacute care or home support is offered to avoid extended hospital stays. Hospitals are not a formal part of the VCT payment model.

Additionally, the VCT model recognizes that managing chronic conditions extends beyond physiology and pharmacology and must consider the complex interrelation between chronic disease and psychosocial factors. Thus, care coordinators’ engagements with patients include assessing a disease’s impact on quality of life and providing educational information and motivational interviewing, for example, by discussing lifestyle modifications and medications and by monitoring adherence to treatment. Care coordinators also refer patients to appropriate health and social services providers, such as social workers or occupational therapists. Patient engagement and education are measured as part of the provision of primary care, and good performance is incentivized as part of the quality payment part of the model (Section 2.1).

Patients exit the VCT model programme if (i) they choose to no longer participate or leave the area; (ii) they have not seen their

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\(^1\) Given the way prescribed minimum benefits have been formulated in the private health financing sector, more generous benefits are available for a core set of in-hospital conditions than are typically available for outpatient care. This means that providers often recommend inpatient care to their patients as the only way to obtain care, given that cover for outpatient care is not always available.
assigned GP for a specified period, which varies by risk cohort; or (iii) they have not seen their assigned GP but have seen GPs outside of the consortium more than twice. Once a patient exits, the practice is no longer paid for that patient.

The patient population during mid-2022 consisted of 60% females and 40% males ($N = 5\,620$), with the age distribution relatively consistent across different age groups (i.e. 0–19, 20–39, 40–59, 60–79 and > 80 years).
Incentivizing quality through payment
Quality measurement and management in the model are closely intertwined with specific payments and overall incentives. Incentive is used to refer to “one particular form of payment which is intended to achieve some specific change in behaviour” (3) (i.e. a motivating factor), and reward is used to indicate the monetary payment or financial outcome for meeting a certain set of incentives.

2.1 The overall payment model

Providers receive a capitation payment adjusted for case mix and intended to cover a predetermined package of health care services, and there are also payments based on quality metrics (known as outcomes-based payments or rewards).

The capitation payment accounts for approximately two thirds of the average total payment, and the outcome-linked VBC payment (on average) constitutes the other third. For a top-performing GP practice whose outcome scores are very high, the fee can match the guaranteed capitation fee, with the guaranteed capitation payment totalling around 50% of the payment received. A poor score will earn little, so the guaranteed capitation fee may be >90% of the total.

The capitation payment is adjusted for patient risk by weighting, using the patient’s DBI factor, which is recalculated monthly. The average monthly payment is approximately 115 South African rand (roughly US$ 7.20) per patient, similar to the average FFS paid by GEMS to the practices; an additional 20% is paid by GEMS to reward accountability and to compensate for managing the complex patients. This amounts to a payment of up to 130 South African rand (approximately US$ 8.15) per month per enrolled patient.

The remaining payment is based on quality metrics and accounts for between 3% and 50% of the total payment. The size of the quality payment is weighted based on scores of 0 to 100 multiplied by the maximum possible amount (140 South African rand, approximately US$ 8.80). The scores are calculated using 22 metrics at 2 levels.

1. Hospital utilization metrics account for 65% of the total weight, as measured by a reduction in avoidable admissions, readmissions and the patient’s length of stay.

2. The metrics for quality of primary care for chronic disease account for 35% of the total weight, as measured by various process indicators.

If the top range of good performance in terms of health outcomes is achieved, the monthly payment per patient is around 240 South African rand (about US$ 15.00). For providers with average quality scores, the quality-related payment tends to be around 25% of the
Incentivizing quality through payment

The scores are calculated relative to a blended benchmark range. This benchmark is arrived at by combining the performance of other providers aggregated nationally with the performance of local primary and secondary care providers. The performance of providers outside the VCT model is also taken into account and is adjusted for in cases in which specialist services may be influencing outcomes. The outcomes for the VCT model are then reported as an overall performance score relative to the average score of GEMS-contracted providers as well as in relation to service providers in the local area; for example, a provider may score 50% above average in the geographical area. Rewards are then calculated in relation to the performance of service providers in the area.

Initially, the scores from providers participating in the model were calculated relative to only the national benchmark. However, PPO Serve suggested using a blended benchmark to correct the incentives for providers. The blended benchmark makes it possible for good primary practices in “difficult” areas to be rewarded for incremental improvement. A national benchmark would penalize them and over-reward a relatively poorly performing primary region in a good tertiary area (i.e. an area with relatively poor primary care but good tertiary care). PPO Serve argued that the effect of ignoring relative regional performance served to preserve the status quo rather than promote incremental local innovation and improvement.

Outcomes-based payments were determined to be sufficiently sizeable to incentivize behaviour change.

2.2 Quality metrics and data collection and management

A total of 22 metrics, each with their own rating, constitute the overall quality score for each practice (Annex 1) with each receiving a weighting of about 2 points.

The ICS tracks daily metrics for specific populations (Table 1), with weightings for each metric determined by GEMS. Monthly reports are generated for each care coordinator to inform them whether their patients have received the recommended evidence-based services within the expected time frame (e.g. having a viral load measurement for someone who is HIV-positive). The reports prompt discussions with patients about their well-being and barriers to adherence, and the importance of following their management plan. Metrics related to patient care are captured as part of the first factor rewarded for the quality payment (i.e. primary care for chronic
In the future, the quality payment will include measures of patient satisfaction.

Table 1. Chronic disease measures used for care and provider monitoring of the Value Care Team contract providing value-based care, South Africa

<table>
<thead>
<tr>
<th>Chronic illness</th>
<th>Test or category</th>
<th>Annual frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td>Viral load</td>
<td>≥2</td>
</tr>
<tr>
<td>Diabetes</td>
<td>HbA1c (glycated haemoglobin)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Adherence to medication for diabetes</td>
<td>10</td>
</tr>
<tr>
<td>Ischaemic heart disease</td>
<td>Lipid-modifying agents prescribed</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Antithrombotic agents prescribed</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Adherence to medication for ischaemic heart disease</td>
<td>10</td>
</tr>
<tr>
<td>Ischaemic heart disease and diabetes</td>
<td>ACE inhibitor or ARB prescribed</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Urea and electrolytes or urine microalbuminuria</td>
<td>≥1</td>
</tr>
<tr>
<td></td>
<td>Adherence to medication for the two diseases</td>
<td>10</td>
</tr>
<tr>
<td>Chronic illness or aged ≥65 years</td>
<td>Influenza vaccination</td>
<td>≥1</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Creatinine clearance</td>
<td>≥1</td>
</tr>
<tr>
<td></td>
<td>Serum creatinine</td>
<td>≥1</td>
</tr>
<tr>
<td></td>
<td>Urinary protein excretion</td>
<td>≥1</td>
</tr>
<tr>
<td>Hyperlipidaemia</td>
<td>Number of lipid studies</td>
<td>≥1</td>
</tr>
<tr>
<td></td>
<td>Number of dietitian visits</td>
<td>≥1</td>
</tr>
<tr>
<td>Hypothyroidism</td>
<td>Number of thyroid tests</td>
<td>≥1</td>
</tr>
<tr>
<td></td>
<td>Adherence to medication for hyperthyroidism</td>
<td>10</td>
</tr>
</tbody>
</table>

ACE: angiotensin-converting enzyme; ARB: angiotensin receptor blocker.

Source: Reproduced with permission from PPO Serve internal documents.
Incentivizing quality through payment

The remainder of the quality measures relate to the use of hospital services (Table 2). The aim of these is to prevent unnecessary admissions through good management at the primary care level. Therefore, the higher the scores, the poorer the care. Additionally, outcomes associated with hospitalization are analysed by comparing them with the GEMS benchmark and then conducting a further root cause analysis to identify systemic reasons for the outcomes.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPO Serve Patient Quality Index</td>
<td>Hospitalization for avoidable episodes, such as urinary tract infection, dehydration, complications of diabetes</td>
</tr>
<tr>
<td>Admissions</td>
<td>All medical admissions</td>
</tr>
<tr>
<td></td>
<td>Hypertensive patients admitted for stroke</td>
</tr>
<tr>
<td></td>
<td>All surgical admissions</td>
</tr>
<tr>
<td>Readmissions</td>
<td>Readmissions that occur within 30 days of discharge from a previous admission, regardless of cause</td>
</tr>
</tbody>
</table>

*a Because the aim of value-based care is to prevent unnecessary admissions through effective management at the primary care level, higher scores indicate poorer care.

Source: Reproduced with permission from PPO Serve internal documents.

The patient outcome scores are calculated every six months based on the average of the last year’s (rolling 12-month period) data. The number of data points available for quality outcomes for a patient varies based on the patient’s individual DBI value (DBI < 1), the metric used for risk adjustment, which determines their expected engagements with health professionals and facilities. There is a clear relationship between the DBI and the four possible categories into which patients fall.

The practice coach sends performance reports to the VCT every quarter and to individual practices every 6 months. These reports include provider scores for each of the quality measures in the contract. The metrics provide feedback about the provider’s patient profiles and chronic disease outcomes.

Table 3 is an example of a report generated for a practice, depicting aggregated data for all patients for the hospital-related measures during a 6-month period. The reports are also accompanied by a

Although 6 months is a long period, not all patients in an individual practice are associated with the VCT, so their activities do not impact the VCT greatly.
short analysis of the practice’s achievements and areas for improvement.

Table 3. Example of aggregated data for all patients in a Value Care Team practice (one doctor’s profile) for the risk-adjusted hospital-related measures, South Africa

<table>
<thead>
<tr>
<th>Measure</th>
<th>Actual rate or number (n = 157)</th>
<th>% or number expected using the blended benchmark (n = 157)</th>
<th>% difference (n = 157)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission rate (%; number of admissions)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgical</td>
<td>12.1% (19)</td>
<td>13.4% (21)</td>
<td>−9.9% (2)</td>
</tr>
<tr>
<td>Medical</td>
<td>1.9% (3)</td>
<td>10.1% (16)</td>
<td>−81.0% (13)</td>
</tr>
<tr>
<td>Total</td>
<td>14.0% (22)</td>
<td>23.5% (37)</td>
<td>−40.4% (15)</td>
</tr>
<tr>
<td>Average length of hospital stay (days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgical</td>
<td>1.9</td>
<td>2.5</td>
<td>−21.4%</td>
</tr>
<tr>
<td>Medical</td>
<td>5.0</td>
<td>4.2</td>
<td>20.1%</td>
</tr>
<tr>
<td>Total</td>
<td>2.4</td>
<td>2.7</td>
<td>−12.7%</td>
</tr>
<tr>
<td>Annual no. of bed days/1 000 lives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgical</td>
<td>236</td>
<td>333</td>
<td>−29.2%</td>
</tr>
<tr>
<td>Medical</td>
<td>96</td>
<td>419</td>
<td>−77.2%</td>
</tr>
<tr>
<td>Total</td>
<td>331</td>
<td>753</td>
<td>−56.0%</td>
</tr>
</tbody>
</table>

Source: Reproduced with permission from PPO Serve internal documents.

Discussions between the hospital case manager and the care coordinator, and the early identification of patients who are hospitalized without the knowledge of their GP, are essential to ensuring quality. For example, the integrated ICS and medical insurer administrative systems flag patients who independently seek care for a surgical issue, and the treating surgeon and patient are then contacted to facilitate postdischarge care.

The model also collects data about socioeconomic factors. These data are used in parallel with clinical risk stratification to trigger preventive actions that are based on a comprehensive review of the patient’s health status, demographic characteristics, underlying conditions and socioeconomic status. For example, an elderly patient living alone may be assessed for mental status, loneliness and fall risk to improve their care plan.
Incentivizing quality through payment

2.3 Payments and incentives

Doctors can bill for additional expenses, mostly consumables, not covered by the overall fee, as per normal insurance procedures. These additional billables tend to be for small amounts. Services and consumables covered by the model have no associated copayments, although these may apply for services that are outside the model’s package.

Individual practices use the money received to reimburse the practice owner (the GP), locums and other members of the MDT, as per their individual reimbursement arrangements. Physiotherapists, occupational therapists and palliative care specialists are paid a day rate due to the prohibition on fee-sharing by the Health Professions Council of South Africa (HPCSA). Doctors are the only provider participants who are not reimbursed at a set rate and are paid on an at-risk basis, depending on their performance and patients’ outcomes.

In the VCT model, GPs focus on patients in the chronic and complex categories; the combined DBIs for patients in these categories show that despite relatively small patient numbers, they account for most of the overall resource usage. Their risk-adjusted quality outcomes (through the DBI score) are continually monitored, and improvement strategies are continually implemented.

Although the aggregate DBI values of all enrolled patients determine the MDT’s overall monthly reimbursement, the focus on patients’ outcomes, through implementing preventive care, and the disincentives for hospitalization create incentives for early detection of patients in the at-risk category and better management of patients in the chronic and complex categories. Assessments of psychosocial and socioeconomic risks are used for care plan adjustment and have no bearing on financial incentives.

The model has positive incentives for good performance, but there are no penalties (i.e. loss of income) for poor performance. Given that this is a new model for the broader South African health financing environment, there was a fear that penalties for poor performance would mean that no GPs would be willing to participate.

Although it is possible for GPs to challenge the findings of the aggregated data, this has not happened. If it were to happen, VCT management (a business unit of PPO Serve) would share data with the GP during an individual review session.

Additionally, providers participating in the VCT model continue to treat patients not covered by it and, therefore, are paid by multiple insurers. Thus, a practice is more likely to undertake the
reengineering needed to adopt the VCT model if the relative share of the practice’s VCT population is larger than the non-VCT population. The share of income from the model varies for providers. GEMS members constitute 5–25% of a participating GP’s patient base. For some GPs, the VCT programme provides a substantial share of their overall income. This may be further enhanced by high overall reimbursement if the GP scores well on the VBC component.

Nonfinancial incentives include knowledge gained by participating providers about alternative reimbursement strategies as well as enhanced collaboration and reduced competition between MDT members. This incentive is enhanced through shared clinical and social summaries, shared proactive MDT care plans, and collaboratively identified improvement opportunities. The use of an overall fee and the MDT approach, together with the VCT management of the contract with GEMS, helps to guarantee a proportion of stable income for providers who have more patients signed up to the VCT, and it also rewards care excellence.

The VCT model funds better out-of-hospital benefits in a managed environment to achieve lower hospital use over time. In the context of South Africa’s private sector, it is about 10 times more costly to deliver a service in a hospital than in a well-structured primary care environment (e.g. gastroscopy or other minor procedure).

Currently, the additional costs funded by GEMS in the VCT model that would not be funded in an FFS environment include:

- an accountable care boost – that is, GPs in the model receive a proportionally larger payment than the average FFS on the services covered by the usual overall GP fee;
- the cost of the care coordinators – the amount depends on the volume and case mix of the MDT’s patients;
- the services of allied health care professionals for out-of-hospital services per life per month – these services are typically paid from generic out-of-hospital benefits, so the model increases spending on these benefits.

The PPO Serve management fee is designed to diminish as the volume of patients enrolled in the VCT model expands – that is, it covers fixed costs and will eventually shrink to less than the fee for the care coordinator, an unusual, additional expense for medical schemes.

The VCT model currently costs GEMS an additional 5–6% per insured person per month. This higher expenditure is offset by savings from reduced hospital bed days, but the savings are expected to grow as the model becomes more effective over time.³

³ An analysis of patient savings from the programme over time is not yet available.
Areas with a higher percentage of patients with high DBIs have higher costs but also have higher potential savings, thereby incentivizing GEMS and other funders to implement this type of reimbursement. While PPO Serve and GEMS do not have a set budget for the pilot, the current number of patients and fairly good performance by providers translates into a total additional budget of around 16 million South African rand (US$ 1 million) per annum for the model.

### 2.4 The link between quality improvement and payment

While the VCT model was designed to use financial incentives to encourage behaviour change and quality improvement, PPO Serve believe that it is not solely financial incentives currently driving improved outcomes, given that enrolled patients still constitute a small percentage of each practice’s overall patients. Rather, it is the change in day-to-day management of patients, supported by a quality measurement system (at this stage) that could account for any improved outcomes. PPO Serve believes incentives will become more important drivers of behaviour change once more funders use the population-based medicine provided by the VCT model, and more providers are reimbursed for more patients based on an overall fee plus a quality-linked payment.
3

Model performance
Up until 2023 no formal external evaluations have been undertaken. Causal impact analysis results are not available. However, the patient outcome scores are calculated every six months by GEMS, and results are discussed with PPO Serve.

The model aims to reduce unnecessary hospitalizations, and an analysis by GEMS for 2021 found that the overall hospital admission rate was less than predicted by the model for the first three quarters of the year. The overall number of patient bed days was 7% lower than expected (using the blended benchmark), and the medical admission rate was 29.6% less than expected in quarter 3 of 2021 (blended benchmark). However, the surgical admission rate during the same period was 20.5% higher than expected (blended benchmark) in quarter 3 of 2021. The area of the VCT pilot has an oversupply of surgical hospitals, so this will remain a challenge. Additionally, delayed surgical cases due to the COVID-19 pandemic may account for part of the increase in cases in 2021. As an example, Box 1 illustrates the preventive care being provided for musculoskeletal conditions, which is likely to reduce these admissions over time.

Box 1. The Value Care Team approach to chronic musculoskeletal conditions

Problem: The outcomes reports produced by PPO Serve and the Value Care Team model consistently reflected excessive admissions for musculoskeletal conditions and high related costs. Musculoskeletal conditions commonly include osteoarthritis and degenerative diseases.

Investigation: Analysis of admission reports together with discussions with patients, participating practices and members of the multidisciplinary team highlighted a few specific causal factors.

- Patients may have limited outpatient insurance benefits, which resulted in bypassing primary care and encouraging access to specialist and hospital-based care. This also resulted in the patient’s general practitioner being unaware of their hospital admissions and procedures.

- A low threshold by surgeons for admission and surgery may be related to the fee-for-service reimbursement system.

Opportunities missed: The analysis also identified some missed opportunities.

- There was a lack of patient-centred care and opportunities to discuss more conservative management or alternatives with high-risk patients.

- Holistic consideration of the patient’s physiology and comorbidities was lacking as well as an assessment of the
psychosocial impact of surgery and the patient’s ability to recuperate.

- A patient’s preoperative physiological status and chronic disease control activities were not optimal and could not be addressed in a timely manner

**Interventions implemented:** A monthly list of patients at risk of needing interventions for musculoskeletal impairment is now compiled, and care coordinators alert the primary GP to patients who have been experiencing musculoskeletal symptoms, thereby allowing GPs to proactively assess patients holistically. Care coordinators then engage with patients to offer them alternatives to surgery, such as physiotherapy.

The practice coach visits orthopaedic specialists in the area to inform them about the VCT model and invite them to engage with her before seeking authorization for a procedure. This allows some admissions to be rerouted to outpatient management and support.

**Results:** While the results are preliminary and limited, there has been a promising trend in the decreased use of in-hospital services, such as radiology, as well as an overall decrease in admissions.

Overall, there has been improvement in the aggregated performance scores for all practices participating in the VCT model since 2019. There has been a slow increase in average performance scores from September 2019 to October 2020 compared with baseline scores before practices joined the programme (Fig. 1).
Fig. 1. Average aggregated performance scores of providers in the Value Care Team model, South Africa, 2019–2021

Source: Data extracted with permission from PPO Serve internal documents.

Improvements in performance scores for hospital bed days and hospital readmission rates are shown in Figs. 2 and 3. While hospitalization metrics have shown improvements in performance scores over time, some of the primary care prevention metrics for patients with chronic conditions have remained relatively constant. This lack of improvement is ascribed to the short period for the VCT model. Some prevention metrics are included as part of the overall VBC contract (e.g. administration or receipt of the influenza vaccine).

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4 The performance score for hospital readmission rates has an inverse relationship to performance – that is, an increase in the performance score indicates a decrease in hospital readmission.
Fig. 2. Average performance scores of providers in the Value Care Team model for hospital bed days, South Africa, 2019–2021

Source: Data extracted with permission from PPO Serve internal documents.

Fig. 3. Average scores of providers in the Value Care Team model for hospital readmission South Africa, 2019–2021

\(^a\) The performance score for hospital readmission rates has an inverse relationship to performance – that is, an increase in the performance score indicates a decrease in hospital readmission.

Source: Data extracted with permission from PPO Serve internal documents.
3.1 Facilitating and inhibiting factors

It may be useful to think of facilitating and inhibiting factors as factors that have affected the experience of the VCT model, whether positively or negatively, and to realize that at some point they may act as facilitators, while at others they may be inhibitors.

3.1.1 Regulation and governance

HPCSA regulations on business practices are being reviewed to determine whether they may inhibit some of the arrangements needed to enable VBC. At the time of the VCT pilot, some regulations prevented doctors from being employed by private sector institutions, although exceptions could be granted, or from employing other doctors who were not in the same professional category. For example, a surgeon was not allowed to employ an anaesthetist in their practice. Similarly, group practices were allowed only for doctors in the same professional category. Additionally, fee-sharing was prohibited and only those providers who played a role in the direct care of a patient were eligible for reimbursement.

The VCT was able to work around some regulations by using a per practice overall payment model in conjunction with a consortium shareholder and employer structure. This allowed different practice types and providers to be included in the VBC contract. However, private sector funding regulations are not currently set up to facilitate VBC contracting.

3.1.2 Leadership and management

It is essential that the leadership of an organization such as PPO Serve should have good relationships with a wide set of stakeholders, prospective funders and providers. However, it has not always been easy to build good relationships, given the concentrated nature of the South African health insurance market, in which two fund administrators cover 80% of insured people, and the potential threats posed by the VCT model to the financing system in the private sector, which is largely centred around curative care.

Additionally, South African GP practices are run in a siloed manner, based on the clinical skill of the owner of the GP practice; thus, GPs in the consortium had difficulty managing an expanded team that included care coordinators, allied health professionals and other clinical resources, as well as managing the consortium itself, with its shared business functions. Overall, good VCT management is essential to the VBC model to realize its efficiencies, and management requires a strong leader to liaise with various providers within and outside the MDT. Therefore, a parallel model was
developed in which a dedicated practice coach takes responsibility for managing the MDT as well as business administration, thereby allowing doctors to concentrate on the clinical aspects of care.

### 3.1.3 Providers

It is crucial to select GP providers with appropriate skills and interests in practice management and data-driven improvement and productivity, as well as an appetite for innovation. However, the model works as an integrated system in local regions and providers must be selected on a geographical basis; it is difficult to ensure that the aforementioned qualities are present in all participating providers.

In the current VCT pilot team, medical leadership was initially provided by a physician specializing in internal medicine. While the physician’s clinical leadership skills were superb, this person’s communication skills, failure to participate in the local hospital’s after-hours care roster and unhappiness with the overall payment (which, while in aggregate was higher than the FFS income, did not reflect the intense work of some months during the COVID-19 pandemic), eventually resulted in the physician leaving the VCT. This potential leadership gap is less evident than it might be because of the extensive experience of the current GPs. A replacement is being sought by PPO Serve in addition to reconsidering the overall payment mechanism for these specialists, and potential candidates are being screened based on their admission rates, as well as their willingness to work with an MDT.

The care coordinators that were recruited were well suited to their position, which required the ability to multitask, serve as a means of connection with patients, understand the socioeconomic circumstances of patients’ lives and, consequently, develop empathy for patients. Importantly, the perseverance of the care coordinators in building a trusting relationship with patients and their families, many of whom were initially sceptical of the VCT’s intentions, is vital to the success of the model. The scepticism is unsurprising given that the model of care delivered by the VCT is unlike current models within the South African health sector.

Other challenges arose because in the current model the patients are only a small share of each practice’s population. In addition, implementing the VCT model is easier in larger practices, where it is possible to maximize income. Although smaller, individual practices may be more patient-centred and less income-focused, it is more difficult to demonstrate the value of the VCT model and subsequently implement it cost effectively.

Furthermore, the reluctance of some providers to engage critically with their regular performance reports has consequences both for
patient care and for providers’ ability to draw insights from population-level data. The onus thus remains on PPO Serve to make the reports easy to understand so that the next steps for providers are intuitive.

3.1.4 Technology

The ICS, an electronic information system that includes medical records, facilitates continuity of care between providers and facilities. The ICS, proprietary to PPO Serve, integrates with GEMS’ and the provider’s systems and allows the care coordinator to easily view a patient’s records.

However, options such as call centres may be a barrier to some patients, especially those who are older and may have hearing or visual impairments that make access difficult or those who have had limited exposure to technology. Patients currently do not have access to the ICS, although this is planned.

3.1.5 Incentive design, payment and overall financial model

PPO Serve believes that financial incentives could drive changes in providers’ behaviour towards improved quality if the incentives are substantial, both as a share of overall payment and in their scale (i.e. they should apply to a large proportion of patients). While PPO Serve has built in quality-linked payments, the scale is lacking in terms of having the VCT model apply to a sufficiently large percentage of patients. Scaling up requires other funders to also contract coverage for their members under the VCT model. Therefore, the financial incentives are not yet having an optimal impact, and it takes time for them to be optimized.

3.1.6 Funding and scaling up

GEMS’s interest in alternative models of reimbursement has not only allowed for the VCT model to be implemented but also allowed patients to receive services that are sometimes still poorly covered in their benefits packages (e.g. allied health, social work).

However, there are significant costs associated with being the first to implement a new model. Chiefly, the current FFS model may suppress providers’ motivation to implement new models of care. It is only recently that doctors’ remuneration has become pegged to their performance (i.e. as an individual and relative to their peers). It will require time and energy for providers to learn about alternative financing arrangements and how to optimize care quality in an efficient manner to receive these payments; therefore, the untraditional nature of this payment could be considered a disincentive in itself.
3.2 Suggestions for improvement and lessons learned

Expanding the MDT to include other medical disciplines and related services would enhance the package of services available to patients and, thus, enhance the value of the model. Within a practice, this would include adding a dedicated nurse and social worker; outside the practice, access could be improved by adding radiologists, pathologists and other specialists, such as psychiatrists, cardiologists and orthopaedic surgeons.

Training providers in VBC and team-based care is essential to allow each provider to better understand their role within the team as well as empower them to monitor outcomes and adjust processes. A strong leader can help a team to understand how their processes may be helping or hindering VBC and assist them in finding innovative solutions to challenges. In addition, systems that alert providers about unnecessary care being sought by or delivered to patients will empower providers to improve their processes, and their communication with and education of patients.

Similarly, patients need to be educated about the model so they understand both its advantages and their role in managing their health.

Finally, a central information system that integrates funder information, electronic medical records and outcomes data, as well as allows patients to access information about their care, will allow for continuity of care, patient empowerment and outcomes monitoring.
Conclusions
PPO Serve is a private company serving privately insured patients. Nonetheless, it aims to improve some aspects of universal health care by prioritizing patient-centred preventive care delivered through expanded primary care services, while ensuring there is limited financial impact on patients. The project is now almost three years into its second pilot. It has not undergone a formal impact evaluation, but early trends are in a positive direction. Thus, resources can be used more efficiently, so that more care can be provided when needed or to more individuals.

This experience offers guidance to other health systems about the building blocks required for health care funders and the larger system of providers. Efforts are needed to implement a uniform health information system across providers. Certain funders have put into place a health information system that can track patients’ visits across different providers (based on claims), but currently there is no single, shared health information system. This makes it difficult to identify when patients do not receive needed care, receive duplicate care or deviate from their care plans.

A last consideration around scale up is the best way to involve GP practices. This model moved from the consortium approach, in which GP practices were expected to fulfil business functions, to a version in which PPO Serve took over these functions. PPO Serve is considering an approach akin to a franchise model. A franchise model assumes that franchisees have an interest in the business model and will work to make the business grow. It recognizes that this can happen only over time and with support from PPO Serve. It is likely to be a long-term process.

In South Africa, the private health insurance sector has clear legal divisions between purchasers and providers. Private health insurers are required to purchase care via their administrative function for their populations from a combination of networked and independent outpatient and hospital providers. In this context, the purchaser–provider split in GEMS supported its focus on efficiency and quality, thereby enhancing its willingness to experiment with VBC. However, GEMS is unique among the larger context of private health care funders in South Africa: it operates a closed scheme rather than an open commercial scheme, with beneficiaries being both the employer (i.e. the government) and employees. Therefore, the Board of GEMS views the benefits as part of the package offered to employees, rather than as a lucrative business function.

The absence of strong, independent boards at major commercial medical schemes managed by large for-profit administrators fails to adequately separate the member protection requirements of a scheme from the commercial interests of the third-party administrator (4). This system, unless sufficiently limited by effective regulation, constrains the long-term success of a model like the VCT pilot.
To make the VCT model work, at least two types of critical support were required:

- strong team management – the practice coach appointed to oversee the model and liaise with practices in a defined geographical region must manage the MDT, including ensuring their understanding of the model and the VBC model;

- business support – basic business acumen and support for business practices were required for the shared-patient model.

These two features, depending on the specific geographical context of the model, can be viewed as either constraining (in their absence) or facilitating (in their presence) factors. They are necessary enablers for the model’s success.
References


Annex

Provider quality indicators
<table>
<thead>
<tr>
<th>Metric</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV viral load</td>
<td>Among those known to be HIV-positive, what percentage of patients has had their viral load tested twice per year?</td>
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<tr>
<td>HbA1c measured once per year</td>
<td>Among patients with diabetes, what percentage has had an HbA1c test once per year?</td>
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<tr>
<td>HbA1c measured twice per year</td>
<td>Among patients with diabetes, what percentage has had an HbA1c test twice per year?</td>
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<tr>
<td>Lipogram (measurement of total cholesterol, lipid-carrying proteins and triglycerides)</td>
<td>Among patients who have ischaemic heart disease, what percentage has had a lipogram at least once per year?</td>
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<tr>
<td>Antithrombotic medication</td>
<td>What percentage of patients with ischaemic heart disease are taking antithrombotic medication?</td>
</tr>
<tr>
<td>ACE inhibitor or ARB</td>
<td>What percentage of patients with ischaemic heart disease or diabetes, or both, are using an ACE inhibitor or ARB?</td>
</tr>
<tr>
<td>Urea and electrolytes test</td>
<td>What percentage of patients have had a urea and electrolytes test?</td>
</tr>
<tr>
<td>Adherence to medicine for chronic illness</td>
<td>What percentage of patients known to have a chronic disease take their prescribed medication regularly?</td>
</tr>
<tr>
<td>Flu vaccine</td>
<td>What percentage of patients with a chronic condition or aged &gt;65 years received a flu vaccine?</td>
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<tr>
<td>Creatinine clearance</td>
<td>Among patients with hypertension, what percentage has had a creatinine clearance test?</td>
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<tr>
<td>Serum creatinine</td>
<td>Among patients with hypertension, what percentage has had a serum creatinine test?</td>
</tr>
<tr>
<td>Urinalysis for urinary protein</td>
<td>Among patients with hypertension, what percentage has had a test for urinary protein?</td>
</tr>
<tr>
<td>Lipogram (measurement of total cholesterol and triglycerides)</td>
<td>Among patients with hyperlipidaemia, what percentage has had a lipogram at least once per year?</td>
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<tr>
<td>Dietitian consultation</td>
<td>Among patients with hyperlipidaemia, what percentage has consulted a dietitian at least once per year?</td>
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<tr>
<td>Thyroid function test</td>
<td>Among patients with hyper- or hypothyroidism, what percentage has had a thyroid function test at least once per year?</td>
</tr>
<tr>
<td>Physician consultation</td>
<td>Among patients with hyper- or hypothyroidism, what percentage has consulted a physician at least once per year?</td>
</tr>
<tr>
<td>Metric</td>
<td>Measure</td>
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<td>-----------------------------------------------------------------------</td>
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<tr>
<td>Number of bed days in medical wards</td>
<td>What is the total number of bed days for inpatient care in medical wards paid for by PPO Serve?</td>
</tr>
<tr>
<td>Number of bed days in surgical wards</td>
<td>What is the total number of bed days for inpatient care in surgical wards paid for by PPO Serve?</td>
</tr>
<tr>
<td>Ratio of total cost of outpatient health care to total cost of inpatient health care</td>
<td>What is the ratio of the total cost spent on outpatient care to the total cost spent on inpatient care?</td>
</tr>
<tr>
<td>Indicators of preventable admissions</td>
<td>How many admissions were for potentially preventable reasons? (These conditions are prespecified, for example, dehydration, uncontrolled asthma.)</td>
</tr>
<tr>
<td>Readmissions</td>
<td>How many patients were admitted to hospital more than once in 12 months?</td>
</tr>
<tr>
<td>Admissions for hypertensive stroke</td>
<td>How many patients with hypertension were admitted to hospital for cerebrovascular bleeding?</td>
</tr>
</tbody>
</table>

ACE: angiotensin-converting enzyme; ARB: angiotensin receptor blocker; HbA1c: glycated haemoglobin.

Source: Data extracted with permission from PPO Serve internal documents.