Making Accountable Sustainable Oncology Networks (MASON): Environmental Scan/Annotated Bibliography

The research questions guiding the environmental scan and the search strategy are described in detail in the attached appendix. The components of the annotated bibliography below (with links and citations to sources) are grouped into topic areas with main points relevant to the proposal review outlined below.

BRIEF DESCRIPTION OF THE PROPOSAL
The Making Accountable Sustainable Oncology Networks (MASON) proposal aims to decrease overall Medicare spending for care of oncology patients, while retaining or improving quality of care. The submitting organization, Innovative Oncology Business Solutions (IOBS) proposes using community oncology practices and aspects of several current care and payment models to improve care coordination and create technological systems that use artificial intelligence (AI) to create clinical decision support aligned with treatment guidelines and corresponding payment categories for physicians. Thus, the model guides community-based oncologists in providing evidence-based care while receiving appropriate payments and incentives to reward quality of care and costs savings.

SUBMITTING ORGANIZATION
IOBS
In 2012, the Centers for Medicare and Medicaid Innovation (CMMI) awarded the Innovative Oncology Business Solutions (IOBS) a $20 million dollar Health Care Innovations Award (HCIA) to create and implement a program called the Community Oncology Medical Home (COME HOME). IOBS is a small (<10 employees) private, for-profit organization created to manage and administer the HCIA award.

COME HOME
The American Society of Clinical Oncology (ASCO) partnered with IOBS to announce their COME HOME model in January 2017. COME HOME provides care to Medicare beneficiaries, as well as commercially insured patients, with one of seven common cancer types (breast, colon, lung, thyroid, pancreas, lymphoma, and melanoma cancer). COME HOME includes the following components: (1) 24/7 access to care, (2) systematic pathways for triage, clinical care, and quality improvement, (3) an ongoing relationship with a personal physician and integrated/coordinated care; and (4) payment to recognize the value-add of a medical home. Seven community oncology practices participate in COME HOME: Austin Cancer Center, Ft. Worth Centers for Cancer & Blood Disorders, Dayton Physicians Network, New England Cancer Specialists, New Mexico Cancer Center, NW Georgia Oncology Centers, and Space Coast Cancer Center. COME HOME is being evaluated by the University of Tennessee Health Science Center for evaluation and cost analysis and Net.Orange, a software company for patient data integration and quality of care/pathway compliance tracking.

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Based on the results of the pilot CMMI award, the projected savings to Medicare is $4,178 per member per year (PMPY), which represents a savings rate of approximately 6.3%. Based on Medicare enrollment of 8,022 patients over 3 years, COME HOME is thus projected to save a total of $33.5 million and a net savings of $13.76 million (after implementation costs).²

VieCure/Viviphi

Previously called Viviphi, VieCure is a cognitive computing partner that is assisting IOBS with its analysis and development of the Oncology Payment Categories (OPCs). VieCure is a business that has developed a (proprietary) cognitive computing platform, complete with patient mobile app, to identify care management pathways for patients with cancer based on evidence-based standards of care, patient characteristics and other data including patient genomic data. For example, Vivphi created tools called PrecisionPlan™ or VieCurePrecision™ that use an Artificial Intelligence (AI) knowledge base to derive more than 500 clinical rules to generate precision medicine treatment plans.³

CURRENT ISSUES AND CONCERNS IN THE CARE OF ONCOLOGY PATIENTS

Access to Care

Instead of having patients responsible for scheduling their own appointments for primary and specialty care, MASON proposes its practices handle scheduling appointments and arranging resources as part of increasing access to care for oncology patients.

Changing Physician Incentives for Affordable, Quality Cancer Care: Results of an Episode Payment Model


Key Points

• A pilot study was conducted from 2009 to 2012 with UnitedHealthcare and five volunteer medical oncology groups to understand the outcome of altering certain aspects of the current fee-for-service (FFS) payment system for cancer therapy.

• One of the five oncology groups reported higher hospitalization rates compared to the other four groups. The single group with increased hospitalizations observed an association between admission rates and delayed appointments. Patients with appointments several weeks after a hospital discharge were more likely to be readmitted for the same problem. When appointments were subsequently scheduled within 48 hours of discharge, hospitalization rates decreased and became comparable to the other four groups.

Categorizing Patients and Payments

IOBS proposes developing Oncology Payment Categories (OPCs) that align with evidence-based diagnostic and therapeutic pathways for treating patients. The following article is cited in the proposal as describing an approach to cluster patients using claims data and the Oncology Care Model (OCM) definition of an episode into payment categories that appropriately represent intensity of care needs.

Identifying Subgroups of Complex Patients With Cluster Analysis


Key Points

• Cluster analysis methods have potential to be leveraged to develop meaningful categories for care episodes or payments.

• However, these methods are exploratory and not fully developed. With patient age and number of chronic conditions, identifying homogenous groups of complex patients from heterogeneous populations becomes particularly challenging. Large data sets can be used to identify clusters of patients and corresponding care management opportunities but require further clinical research to understanding the care needs of patients with similar but complex conditions.
Evidence-based Treatment Pathways

The MASON proposal suggests that a cognitive computing platform can be used to automate the evidence-based treatment pathways and corresponding payments into clinical decision support tools.

Clinical Pathways in Oncology: Software Solutions


Key Points

- Clinical pathways that include cost as a factor are helpful for monitoring drug use as well as likely reimbursement for care by episode, bundle, or at risk in an alternative payment model.
- Pathways can enhance transparency of drug prices and other costs of care, since pathways take into consideration costs when evaluating different therapies for comparable levels of efficacy and toxicity.
- Currently, the majority of clinical pathways are treatment-based, and have not yet integrated imaging or other diagnostic studies. This lack of incorporating diagnostics may be a barrier in using treatment pathways for the care of oncology patients.
- Even with challenges, clinical pathways for oncology care are becoming a commonly accepted approach to maintaining value while delivering evidence-based medicine.

CURRENT PAYMENTS FOR ONCOLOGY CARE

The MASON proposal recognizes the difficulty for independent practices to compete with hospital-based practices and sustain themselves. The model aims to make independent practices more competitive with HOPPS-based practices and thereby improving access to care. Although the MASON proposal does not directly target drug prices in their payment methodology, regulations and recent changes to regulations surrounding the payment of drugs under Medicare Part B impact the sustainability of independent oncology practices.

Hospital Outpatient Prospective Payment System (HOPPS)

MedPAC Report to the Congress: Overview of the 340B Drug Pricing Program


Key Points

- Under HOPPS, Medicare’s payment rate for Part B drugs for 340B hospitals and for non-340B hospitals are the same. Hospitals that qualify for the 340B program are able to purchase these Part B drugs at discounted prices. As a result, 340B hospitals generate revenue if Medicare reimbursement for the drugs exceed the 340B prices.
- The 340B statute does not limit the ways that entities can use the generated revenue; e.g., revenue can be used as intended to increase services offered to low-income patients
- The number of 340B hospitals has tripled from 583 in 2005 to 1,365 in 2010.
- Medicare spending for Part B drugs in 340B hospitals has increased from 22 percent of Medicare spending for drugs at all acute care hospitals in 2004, to 48 percent in 2013.
2018 Hospital Outpatient Prospective Payment System Proposed Rule Summary

Key Points

- CMS released the 2018 HOPPS proposed rule in July 2017, indicating there will be no new Comprehensive Ambulatory Payment Classifications (C-APCs).
- CMS proposes to continue providing additional payments to cancer hospitals. Beginning in CY 2018, a section of the 21st Century Cures Act requires the hospital's weighted average payment-to-cost ratio (PCR) for cancer care to be adjusted. The hospital’s PCR after will become 0.89 for each hospital delivering cancer care; the amount will be used to determine the CY 2018 cancer hospital payment adjustment to be paid at cost report settlement.

Payment for Drugs and the 340B Drug Discount Program

In 2005, changes to reimbursement under Medicare Modernization Act tied reimbursement more closely to acquisition costs for health care providers by paying for a drug’s average sales price (ASP) plus 6% to cover overhead costs for drugs administered in physician offices (or plus an annually updated margin (6%) for separately payable drugs administered in hospital outpatient settings).

Although the costs of oncology drugs themselves are not included in the MASON model payment methodology, medication cost transparency is part of the model so that both costs of care and quality can be viewed simultaneously and value assessed and compared among providers and systems. In the model, drug charges will be submitted and paid at invoice +2%, in addition to other payments for care. The proposal states that the display of the invoice price will allow CMS and providers to better monitor drug prices and usage as part of quality of care.

The focus on community oncologists also directly relates to the 340B Drug Discount Program which has resulted in discounts for medications administered by hospital based providers which has, in turn, resulted in the inability of community practitioners to compete or sustain themselves. Both the costs of and access to care have been adversely affected by the dearth of community oncology providers. IOBS’s model, MASON, attempts to protect non-hospital affiliated practices through its payment methodology.

Cost Consequences of the 340B Drug Discount Program

Key Points

- When insurers and patients pay for treatments at list price rather than the 340B-based discounted price, the hospital or physician practice can keep the price differential as revenue or profits. For example, a single practicing oncologist can generate about $1 million in profits for a hospital by obtaining drugs at 340B-discounted prices, and using them to treat well-insured patients.
• The article authors note the following concerns: (1) Physician prescribing behavior may change if incentivized to administer expensive cancer drugs, (2) A disparity is created between non-eligible and eligible hospitals and affiliated oncology practices by the increased revenue from the care of well-insured cancer patients, and (3) Drug manufacturers are therefore likely to further increase list prices to offset revenue losses of 340B discounted drug prices.

Consequences of the 340B Drug Pricing Program

Key Points
• Intentions of the program, such as the goal of providing more care to low-income communities and investing in safety-net providers are not being fulfilled. Because hospitals are reimbursed for parenteral (non-oral) drugs administered in hospital-owned facilities, qualifying hospitals are incentivized to employ physicians and acquire or open practices with physicians who order parenteral drugs that necessitate outpatient physician administration.
• As a result, more oncology practices are bought by hospitals; parental drugs are also preferentially prescribed.
• Eligible hospitals have also been found to treat Medicare patients who are especially likely to have private supplemental insurance to cover 20% of Part B drug costs not covered by Medicare to generate additional profit.

Changes to 340B Program Reduces Hospital Reimbursement for Pharmaceutical Products by 28.5%

Key Points
• Beginning January 1, 2018, CMS will adjust payment for drugs purchased through the 340B program to the average sales price (ASP) minus 22.5%, constituting a 28.5% reduction in reimbursement for some clinics and health systems.
• The reduced payment rate for certain Medicare Part B drugs purchased through the 340B program will produce savings to Medicare. These savings will be redistributed equally to hospitals covered under OPPS.
• The Community Oncology Alliance (COA) commended CMS for reducing drug payments to hospitals, whereas American Hospital Association, America’s Essential Hospitals, and Association of American Medical Colleges stated they believe CMS overstepped its authority.
• PhRMA cites evidence of Medicare over-paying for medications at some 340B facilities, thus benefitting hospitals at the expense of patients. (Further information here)
SOLUTIONS TO CURRENT PAYMENT PROBLEMS

Payment Methodology Proposed in Model

The MASON proposal cites the ASCO Patient-Centered Oncology Payment (PCOP) model for their approach to payment with fees for new patient consultation and care coordination. Additionally, the proposal mentions improved approaches to drug reimbursement as part of their methodology along with continual refinement of payment categories as a result of ongoing data collection and analysis.

Patient-Centered Oncology Payment (PCOP)


Key Points

- ASCO introduces four additional, flexible payments for oncology practices under PCOP: 1) $750 for each new oncology patient; 2) $200 per month per patient who receives parenteral or oral anti-cancer treatment prescribed by the practice (also available to hospice patients if the oncologist is a hospice physician; 3) $50 per month per patient actively monitored by the practice, even without receiving anti-cancer treatment; 4) $100 per month per patient participating in a clinical trial.
- The PCOP model was compared to a shared savings payment model for oncology practices. PCOP does not currently require that an individual oncology practice reduce spending by a set amount to achieve additional payments.
- ASCO’s Patient Centered Oncology Payment (PCOP) model of patient consultation and care coordination fees provides payment for needed services including patient education, care coordination discussions amongst a patient’s providers, and shared decision making with the patient around test results and treatment plans treatment options.

Reimbursement for Part B Drugs

The MASON proposal emphasizes the need for transparency of drug prices. Thus, drug charges will be submitted and paid at invoice +2%, in addition to other payments for care. The proposal states that the submission of invoice price will allow CMS and providers to better monitor drug prices and usage as part of quality of care.

Medicare Part B Reimbursement of Prescription Drugs


Key Point

- In 2005, changes to reimbursement under Medicare Modernization Act tied reimbursement more closely to acquisition costs for health care providers by paying for a drug’s average sales price (ASP) plus 6% to cover overhead costs for drugs administered in physician offices (or plus an annually updated margin [6%] for separately payable drugs administered in hospital outpatient settings).
Medicare Part B Drug Payment Policy Issues

Key Points
• Medicare and its beneficiaries paid approximately $26 billion for Part B covered drugs and biologics in 2015.
• Improvement on the existing average sales price plus 6 percent (ASP + 6 percent) payment system is needed. The following steps could be taken to remedy the current issues: (1) improve ASPE data reporting, (2) modify payment rates for drugs paid at 106 percent of wholesale acquisition cost, (3) determine an ASP inflation rebate, and (4) permitting use of consolidated billing codes to group particular Part B drugs.

Reinsurance
The MASON proposal states having reinsurance (insurance for providers and practices against losses for high costs of care associated with complex or high risk patients) would allow smaller practices to participate at a level of risk they can tolerate (p. 8 of proposal)

What’s the Difference between Reinsurance and a High-Risk Pool? Two Approaches to Insuring Those with Pre-existing Conditions

Key Points
• Reinsurance programs help pay health care claims associated with high-cost enrollees by transferring funds to individual market insurers. Reinsurance intends to discourage insurers from setting high premiums to cover potentially high-risk enrollees. Within these programs, all enrollees, regardless of health status, are in a single pool and have the same choice of plans.
• Evidence from the Affordable Care Act (ACA)’s temporary reinsurance program show that 1) net claim costs for high-cost consumers was reduced by about 10-14 percent in 2014, and 2) premiums in the individual market were lower before ACA’s reinsurance program ended in 2016.
EVALUATION OF SIMILAR MODELS
The MASON proposal cites both the strengths and shortcomings of other oncology models, including the Oncology Care Model (OCM) model.

Third Annual Report: HCIA Disease-Specific Evaluation

Key Points
• The COME HOME model included 5,349 patients with seven different types of cancers and with Medicare as the primary payer.
• Six of the seven COME HOME practices continued the program past the HCIA award period, with services of same-day appointments, and triage and treatment pathways. In addition to the six practices, 10 additional practices have expressed interest in the COME HOME triage pathway system.
• From July 2012 to December 2015, it was found that ED visits were reduced by 13 per 1,000 beneficiaries, and that there is significant decrease of $612 in average cost of care per patient per quarter.

Oncology Care Model: Short- and Long-Term Considerations in the Context of Broader Payment Reform

Key Point
• Total spending in U.S. for cancer care was reported to be about $125 billion in 2010, and is projected to increase between 27% and 39% by 2020.

Centers for Medicare and Medicaid Services: Using an Episode-Based Payment Model to Improve Oncology Care

Key Points
• OCM episodes of care are 6-month periods during which beneficiaries have received non-topical forms of chemotherapy.
• OCM provides $160 per-beneficiary-per-month (PBPM) to participating practices for each Medicare FFS beneficiary receiving chemotherapy during an episode of care in the model.
• Risk arrangements (2):
  o 1. One-sided risk; Medicare savings would be at 4% for the OCM participants qualifying for performance-based payment by end of the third performance year. Participants are not responsible for additional cost if performance year actual expenditures meet or exceed target price.
2. Phased-in two-sided risk; one-sided risk in first two performance years, symmetric two-sided risk after.

After year two, participating entities will be allowed to elect to switch between two arrangements on a semiannual basis.

Changing Physician Incentives for Affordable, Quality Cancer Care: Results of an Episode Payment Model

Key Points

• A pilot study was conducted from 2009 to 2012 with UnitedHealthcare and five volunteer medical oncology groups to understand the outcome of altering the following four aspects of the current fee-for-service (FFS) payment system for cancer therapy.
  1. Medical groups proactively registered all patients with breast, colon, and lung cancer. Clinical data was provided to the payer.
  2. A single episode payment was made at the initial visit.
  3. All drugs were paid using the average sales price rate as a proxy for the acquisition cost of the drug. Physician services continued to be reimbursed by FFS.
  4. The five medical groups met on an annual basis to review data on cost and quality outcomes.

• The actual chemotherapy drug cost (CDC) was about $13 million higher than predicted, however the actual fee-for-service total cost was $33 million less than predicted.

Community Oncology Medical Homes: Physician-Driven Change to Improve Patient Care and Reduce Costs

Key Points

• Two sets of pathways were developed to ensure best care practices and timely implementation of care protocols. During regular office hours, First Responders use an electronic interface to answer patient calls and connect patients to oncology triage nurses for further care. During evening and weekend clinics, triage nurses use physician-approved, symptom-specific decision support tools to determine need for same-day appointments, an ED visit, or a follow-up call in 24-72 hours.

• Medical teams for COME HOME include medical oncologists, midlevel providers, RNs, licensed practical nurses, pharmacists, medical technologists, care coordinators, and First Responders.

• COME HOME has an external vendor, Nanthealth, formerly Net.Orange, to develop custom interface solutions. Nanthealth provides meaningful performance-monitoring data, accessible to physicians.
• Across the seven practices within the program in the third quarter of 2014, the program averaged 1,265 nursing (triage) encounters, 440 extended hours visits, and 655 patient education encounters per month.

ASCO Launches COME HOME Initiative to Give Oncology Practices Concrete Path toward Alternative Payment System


Key Points
• ASCO expanded IOBS’s Community Oncology Medical Homes (COME HOME) program in 2017, along with implementation of the program’s readiness assessment and implementation tools.
• Early results from seven COME HOME practices demonstrate a reduction in 30-day hospital readmission rates (-11.7%), ED visits (-6.6%), inpatient hospital admissions (-12.5%), and overall cost of care (-7.2%). Additionally, patient satisfaction rate averaged from 91.3-98.1% throughout the COME HOME grant period.
• ASCO has created several tools for practices to provide high-quality, high-value cancer care, including: Quality Oncology Practice Initiative (QOPI) in 2002 with the PQRS module, Quality Care Symposium, Clinical Practice Guidelines, PracticeNET, CancerLinQ, and the PCOP model.

QUALITY METRICS OR OUTCOMES
The MASON proposal attests that patient perspectives on care quality and satisfaction of care received will be measured using the Consumer Assessment of Healthcare Providers and Systems (CAHPS), but does not cite use of the cancer-specific CAHPS instrument described below. Practice level quality of care is assessed using the measures of the Quality Oncology Practice Initiative (QOPI) and the Commission on Cancer (COC) NCQA certification for the Oncology Medical Home.

Patient Experience Measures from the CAHPS Cancer Care Survey

Key Points
• The core items from the CAHPS Cancer Care Survey produces six composite measures and four single-item measures, including two rating measures:
  o Getting timely appointments, care, and information (composite of 3 items)
  o How well the cancer care team communicates with patients (composite of 4 items)
  o Cancer care team’s use of information to coordinate patient care (composite of 3 items)
  o Helpful, courteous, and respectful office staff (composite of 2 items)
  o Cancer care team supports patients in managing the effects of their cancer and treatment (composite of 8 items)
  o Cancer care team is available to provide information when needed (composite of 3 items)
  o Involvement of family members and friends (1 item)
- Availability of interpreters (1 item)
- Patients’ rating of the cancer care team (1 item)
- Patients’ rating of overall cancer care (1 item)

**Quality Oncology Practice Initiative (QOPI)**

**Key Points**
- ASCO has created an oncologist-led, practice-based quality assessment program to assist practices in creating standards to ensure best care practices.
- Provides a three-year certification for outpatient hematology-oncology practices.
**Appendix: Environmental Scan for PTAC Proposals:**
*Making Accountable Sustainable Oncology Networks (MASON)*
Submitted by Innovative Oncology Business Solutions

<table>
<thead>
<tr>
<th>Research Questions Guiding Search</th>
<th>Sources (Last 5 years unless otherwise stated)</th>
<th>Keywords and Search Terms (Used individually or in combination)</th>
</tr>
</thead>
</table>
| 1 Who or what is the submitting organization? | Google, Wikipedia, organization websites and proposal links and citations | • Innovative Oncology Business Solutions (IOBS)  
• National Cancer Care Alliance (NCCA)  
• VieCure, Viviphi  
• HCIA grant, cancer, COME HOME |
| 2 What is the clinical care “problem” and/or the payment “problem” the proposed model is trying to solve or address? | Proposal, key references cited in the proposal, Google/Scholar, PubMed | • OCM, Participation  
• Provider perspectives  
• Evaluation  
• HOPPS, 340B  
• Access to oncology, specialists, cancer care |
• Pathways  
• Clinical decision support  
• Cognitive computing platform  
• Diagnostic and therapeutic pathways (DTR)  
• EHR |
| 4 What are the current payment methodology and relevant regulations/rules, legislative environment, controversies? | MedPAC, Federal Register, Google/Scholar, PubMed, CMS | • 340B  
• Changes  
• Updates  
• HOPPS, APCs |
| 5 Is there evidence that current practices and payments are problematic? | Google/Scholar, Pubmed | • Hospitals acquiring oncology practices  
• Costs of cancer  
• Disparities  
• Quality  
• Trends |
| 6 What is the basis/evidence that problem is relevant to Medicare: i.e., size of population within Medicare and/or costs | Google/Scholar, Pubmed | • Hospitals acquiring oncology practices  
• Costs of cancer  
• Trends, Age groups, elderly, older adults  
• Medicare  
• CMS |
| 7 Are there evaluations of the model or similar models of | Google, Pubmed, CMS.gov, | • Evaluation  
• CMMI |
<table>
<thead>
<tr>
<th>Question</th>
<th>Resources</th>
<th>Models/Methods</th>
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<tbody>
<tr>
<td>Care and/or payment? Pilot studies?</td>
<td></td>
<td>COME HOME&lt;br&gt;ASCO’s PCOP model&lt;br&gt;MASON&lt;br&gt;MEOS&lt;br&gt;APC&lt;br&gt;Virtual accounts&lt;br&gt;Reinsurance</td>
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<tr>
<td>8 Have there been alternative models/solutions to the problem(s) and any evaluations of these?</td>
<td>Google, PubMed, CMS.gov</td>
<td>Oncology Care Model</td>
</tr>
<tr>
<td>9 Is there support for the validity of quality metrics or outcomes used in the model?</td>
<td>Google/Scholar, NQF, NCQA, Commission on Cancer (COC)</td>
<td>Cancer-specific CAPHS&lt;br&gt;CAPHS&lt;br&gt;Quality Oncology Practice Initiative (QOPI)&lt;br&gt;Readmission&lt;br&gt;Hospitalization rates&lt;br&gt;Costs</td>
</tr>
<tr>
<td>10 Are there tools (proprietary or non-proprietary) involved in the model? Evidence for use, costs, effectiveness of such tools?</td>
<td>Google/Scholar</td>
<td>VieCure,&lt;br&gt;Viviphi</td>
</tr>
<tr>
<td>11 Miscellaneous – Any evidence behind statements and claims in proposal?</td>
<td>References cited in proposal, Google/Scholar</td>
<td>COME HOME (~$2500 savings per patient episode)&lt;br&gt;OPC methodology&lt;br&gt;Measures of effectiveness</td>
</tr>
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Additional Keywords related to clinical scenario, patient population, disease/conditions, setting:

Cancer, oncology, older adults, elderly

Keywords related to payment model/methodology: payment model, care model, payment methodology, Reinsurance, Virtual Account, OPCs, APCs, 340B, HOPPS

Keywords related to CMS/CMMI: CMS, CMMI, HCIA

Specific names of tools, models, organizations, awards, mentioned in proposal text:

Oncology Care Model (OCM), Community Oncology Medical Home (COME HOME), Innovative Oncology Business Solutions (IOBS), National Cancer Care Alliance (NCCA), Ambulatory Payment Classification (APC), Monthly Enhanced Oncology Services (MEOS), VieCure (Cognitive Computing Platform), Hierarchical Condition Categories (HCCs), ASCO PCOP model