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Valuation of Diagnostic Imaging: Reimbursement Environment

The U.S. government is the largest payor of medical costs, through Medicare and Medicaid, and has a strong influence on physician reimbursement. In 2021, Medicare and Medicaid accounted for an estimated $900.8 billion and $734.0 billion in healthcare spending, respectively.[1] The prevalence of these public payors in the healthcare marketplace often results in their acting as a price setter, and being used as a benchmark for private reimbursement rates.[2]

Diagnostic imaging services are reimbursed by Medicare under the Medicare Physician Fee Schedule (MPFS). In order to make these payments, Medicare utilizes the Resource Based Relative Value Scale (RBRVS) system, which assigns relative value units (RVUs) to individual procedures based on the resources required to perform each procedure. Under this system, each procedure in the MPFS is assigned RVUs for three categories of resources:

(1) Physician work (wRVUs);
(2) Practice expense (PE RVUs); and
(3) Malpractice (MP RVUs) expense.

Each procedure's RVUs are then adjusted for local geographic differences using Geographic Practice Cost Indexes (GPCIs) for each RVU component. Once the procedure's RVUs have been modified for geographic variance, they are summed, and the total is then multiplied by a conversion factor (CF) to obtain the dollar amount of governmental reimbursement.

The formula for calculating the Medicare physician reimbursement amount for a specific procedure and location is as follows:[3]

Payment = [(wRVU x GPCI work) + (PE RVU x GPCI PE) + (MP RVU x MP GPCI)] x CF

The wRVU component represents the physician's contribution of time and effort to the completion of a procedure. The higher the value of the code, the more skill, time, and work it takes to complete. The PE RVU is based on direct and indirect physician practice expenses involved in providing healthcare services. Direct expense categories include clinical labor, medical supplies, and medical equipment, while indirect expenses include administrative labor, office expenses, and all other expenses. MP RVUs correspond to the relative malpractice practice expenses for medical procedures, adjusted by specialty.[4]

The GPCI accounts for the geographic differences in the costs of maintaining a practice. Every Medicare payment locality has a GPCI for the work, practice, and malpractice components.[5] A locality's GPCI is determined by taking into consideration the median hourly earnings of workers in the area, office rents, medical equipment and supplies, and other miscellaneous expenses.[6] There are currently 112 GPCI payment localities.[7]

The conversion factor (CF) is a monetary amount that is multiplied by the RVU from a locality to determine the payment amount for a given service.[8] This CF is updated yearly by a formula that takes into account:

(1) The previous year's CF;
(2) The estimated percentage increase in the Medicare Economic Index (MEI) for the year (which accounts for inflationary changes in office expenses and physician earnings); and,
(3) An update adjustment factor.[9]

The Medicare Access and Children's Health Insurance Program (CHIP) Reauthorization Act of 2015 (MACRA) contains a predetermined schedule of updates to the CF. However, these annual updates are relatively small, and in fact the update is 0% for years 2020 through 2025.[10] In actuality, due in part to the COVID-19 pandemic, MPFS reimbursement decreased in each of the last four years (2021-2024) after seeing positive updates to reimbursement rates in each of the four years prior to that (2017-2020). It should be noted that, although the annual updates to the MPFS may be (at best) stagnant for at least the next couple years, MACRA includes several provisions related to financial rewards for providers who furnish efficient, high quality healthcare services.

MPFS reimbursement for diagnostic imaging services is split into a professional component (PC), representing the physician's efforts in interpreting a test, and a technical component (TC), representing "all non-physician work performed by an [Advanced Diagnostic Imaging] ADI supplier, including administrative and non-physician personnel time and use of the ADI equipment and facility."[11] Adding another layer of complexity, the reimbursement methodology changes depending on where the diagnostic imaging services are performed. For example, if the imaging services are performed in a physician practice, both the PC and the TC are billed using the MPFS.[12] However, if the imaging services are performed in a hospital, the PC is billed using the MPFS,

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while the TC is billed using the appropriate hospital prospective payment system, depending on whether the patient had been admitted.[13]

One source of payment reduction for imaging services is the equipment utilization rate. The Centers for Medicare & Medicaid Services (CMS) uses the utilization rate to calculate PE RVUs, reasoning that the more often a fixed piece of equipment is used, the lower the expense per use (and therefore, lower reimbursement for the use of that equipment). For most equipment, CMS assumes a utilization rate of 50% (i.e. the equipment is in use 50% of the time the provider is open for business).[14] However, for certain imaging equipment (including CT and MRI machines) that costs more than $1 million, CMS assumes a utilization rate of 90%.[15] With this higher utilization rate, imaging services receive less reimbursement per use of the equipment. Industry stakeholders have argued that 90% utilization is nearly unattainable, asserting that average utilization rates for imaging equipment are much closer to (and perhaps lower than) CMS's original assumption of 50%.[16]

Further, in an effort to control outsized diagnostic imaging costs in the early 2000s, the Deficit Reduction Act of 2005 (DRA) required MPFS reimbursement for the TC of diagnostic imaging services to be "capped" at what Medicare pays for those services under the Outpatient Prospective Payment System (OPPS).[17] The DRA also required Medicare to reduce reimbursement for certain repeated TC imaging services delivered by the same physician to the same patient on the same day, known as the Multiple Procedure Payment Reduction (MPPR).[18] Therefore, depending on the services provided, such imaging reimbursement policies may or may not have an impact on revenue.

Notably, Medicare reimbursement for diagnostic imaging procedures has generally decreased over the years. A 2022 study found that Medicare reimbursement for common diagnostic imaging studies, after adjusting for inflation, generally decreased between 2011 and 2021,[19] which trend has continued to present,[20] and is expected to continue going forward.[21] As alluded to above, the reimbursement environment is strongly driven by the complex regulatory environment, and a "[l]ack of compliance results in hefty fines and lower reimbursement rates."[22] Accordingly, the current state of the regulatory environment in which diagnostic imaging centers operate will be addressed in the next installment of this five-part series.

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