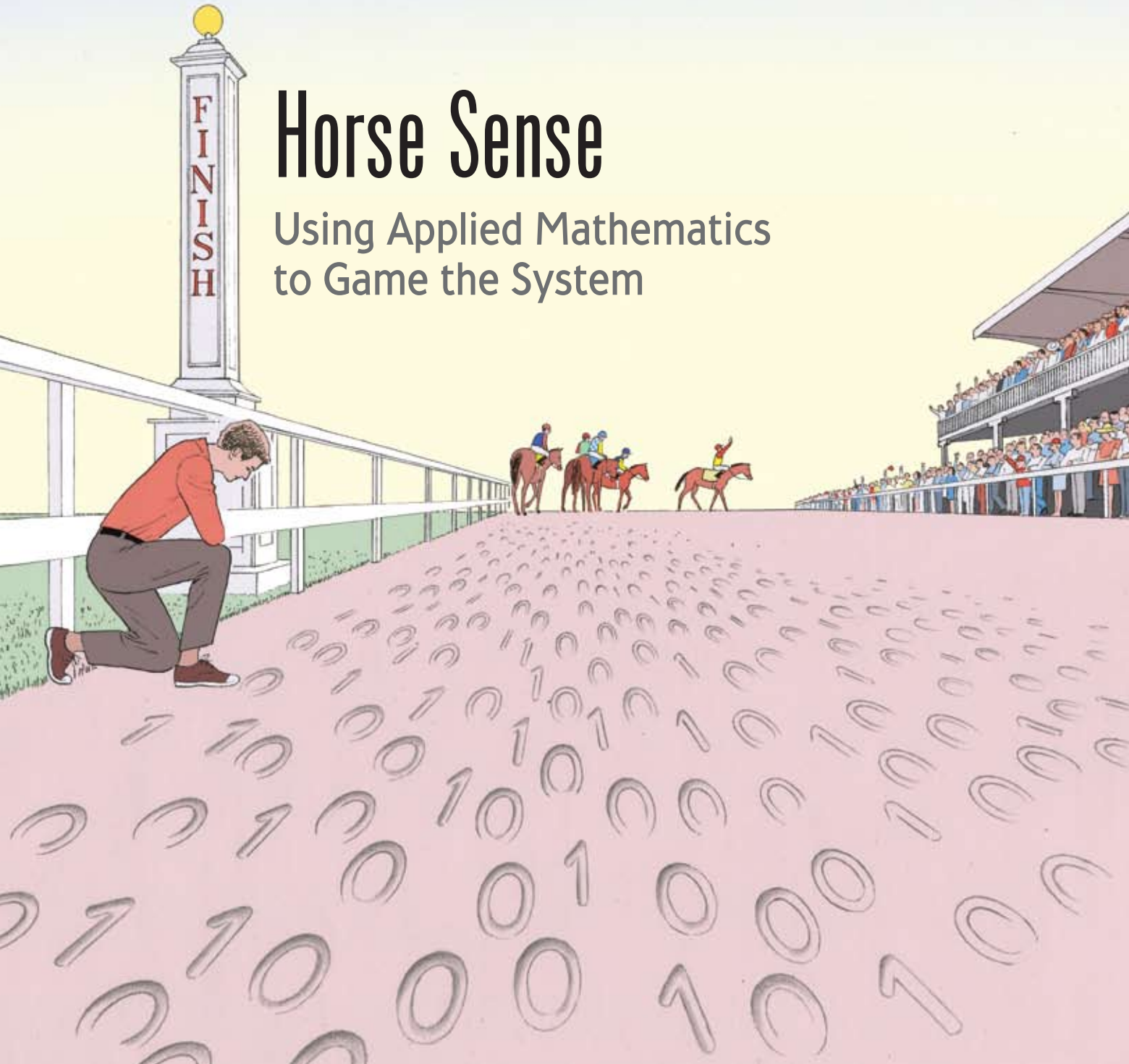
Contingencies
AMERICAN ACADEMY OF ACTUARIES ■ MAY|JUN ■ 2009

Horse Sense

Using Applied Mathematics to Game the System



Picture This—A Graphic Approach to Reinsurance Risk Analysis

THE MOST IMPORTANT CONSIDERATION in the decision to purchase reinsurance is selecting the type and level of benefits to be reinsured. Proper risk analysis by the plan, in conjunction with its reinsurer, should address the following considerations:

- What is predictable risk versus unpredictable risk?
- Where is the health plan at greatest risk for catastrophic claims?
- What is the appropriate reinsurance deductible for the health plan?
- What services should be reinsured?
- Which hospital facilities (both contracted and non-contracted) have the greatest impact on the reinsurance program cost?
- What reinsurance limits, if any, are being utilized to control the cost of reinsurance?

Sometimes pictures say it best. The accompanying charts illustrate the catastrophic claims experiences of several managed-care plans, which helped punctuate the analysis that led to the redesign of medical excess reinsurance coverage in ways that better suited these plans' needs.

HEALTH PLAN A ("How do I get to the top?")—Charts 1 and 2 indicate the top 10 hospital facilities utilized by this health plan, based on the total amount paid and the average cost per day. Looking at these charts should help the health plan as it reviews the reasonableness of any per diem limitations in the reinsurance treaty.

A reinsurance treaty recognizes the provider contracts that the plan has negotiated and typically delivers higher reinsurance benefits when medical care is provided in contracted facilities. In addition to higher coinsurance reimbursement levels, the treaty may waive or reduce limitations on reinsurance reimbursement. Most reinsurance arrangements for managed-care plans have some form of maximum per diem reimbursement, often called an average daily maximum (ADM).

An ADM limitation provides an incentive for the plan to negotiate strong provider contracts and to bring care back into the health plan's own network when care is being provided in a non-contracted facility.

This particular analysis demonstrates that a $2,500 ADM is more than adequate for this plan's catastrophic risk exposures.

HEALTH PLAN B ("Half a loaf is better than none.")—Occasionally a health plan may have a difficult time deciding on the appropriate reinsurance deductible level. One possible solution to this quandary is a variable-coinsurance design. For ex-

CHART 1

CHART 2

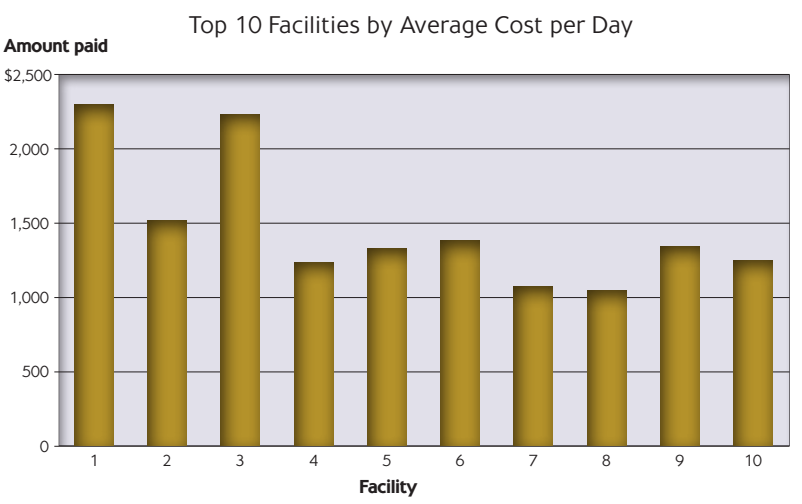


CHART 3

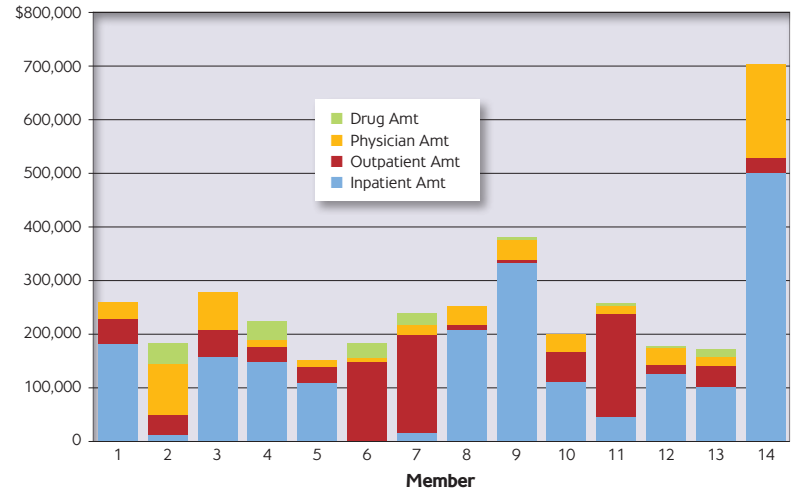
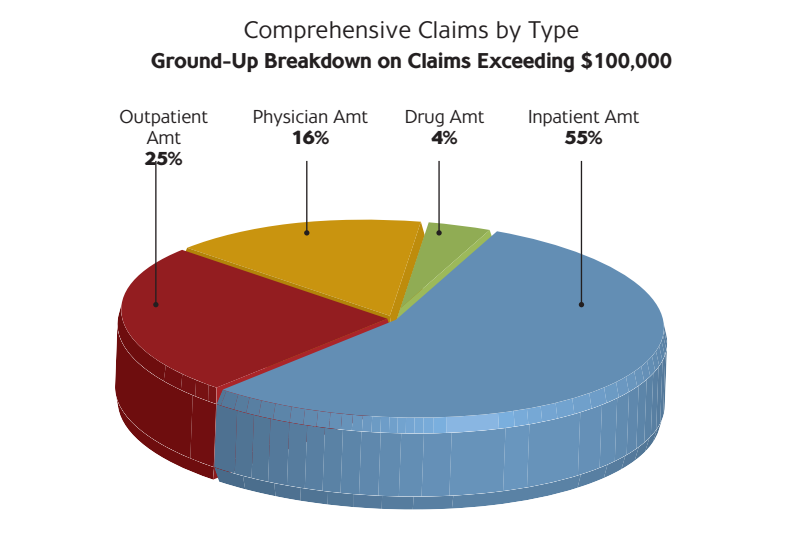


CHART 4



ample, the health plan may select an initial deductible of $250,000 and receive 50 percent coinsurance reimbursement for all claims between $250,000 and $500,000. Above $500,000, the coinsurance is increased to 75 percent, reaching 100 percent reimbursement for portions of claims in excess of $1 million. In this way, the health plan hedges its bets and lowers its premium with the reduced coinsurance on the lower layers. Given the already substantial economic interest by the health plan in catastrophic-claim experience, the ADM limitation could be waived on a variable coinsurance program.

HEALTH PLAN C ("Is the doctor in?")—Most insurance carriers and Blue Cross and Blue Shield plans purchase comprehensive coverage with few, if any, exclusions or limitations on covered service or their reimbursement. HMOs often reinsure only a subset of total medical costs. For example, the HMO might reinsure only hospital inpatient services since these are the primary drivers of catastrophic claims. Alternatively, the plan might purchase comprehensive coverage, emcompassing other medical and professional services such as prescription drugs (including blood and blood products), physician charges, durable medical equipment and supplies, ambulance services, outpatient facility services, mental health, and chemical dependency services. Professional services may not figure in the reinsurance coverage if they are capitated to provider groups.

An analysis of a health plan's own current experience and future trends in these regards could assist it in determining whether to purchase hospital-only or comprehensive coverage. Chart 3 and Chart 4 detail catastrophic hospital and non-hospital claims for one such health plan.

The analysis supported the health plan's decision to switch the coverage to comprehensive from hospital-inpatient only. This more adequately protected the health plan against catastrophic claims of all types. At the same time, the health plan increased its deductible from $100,000 to $150,000. While this isn't a major increase in retention, it does absorb some of the cost increase in moving from hospital inpatient coverage to comprehensive coverage. Inpatient charges are typically 55 percent to 60 percent of total charges. However, in this situation, outpatient charges were steadily increasing from 14 percent in one year to 25 percent two years later. This is consistent with the industry, as more and more high-cost procedures are being performed on an outpatient basis.

Although not a problem for this health plan, outpatient prescription drug treatment (including factor treatments for hemophiliacs), and infusion drugs for Gaucher disease in particular, generate large claims.

HEALTH PLAN D ("A prescription for what ails me, please.")—Health Plan D is located in a large, metropolitan area and focuses on Medicaid members. Since membership is primarily mothers and children, large claims are primarily from inpatient hospital confinements at facilities equipped to treat infants and small children who are severely premature or have other critical problems. Health Plan D saw an increase in large claims from this population.

Health Plan D utilized strong diag-

nosis-related group (DRG) contracts for most facilities in the state, with the exception of facilities such as children's hospitals. The state considered these to be in a unique category for Medicaid reimbursement, and the plan followed the state's lead, which paid the facilities a percentage of the billed charges. The state's intention was to recognize that a DRG reimbursement wasn't appropriate given the level and type of services these unique hospitals were providing. As a result, Health Plan D's most costly claims were being reimbursed as a percentage of billed charges rather than on a DRG or per diem basis. The plan had little ability to contractually modify the reimbursement methodology or renegotiate in the short term.

The plan was purchasing reinsurance coverage with a relatively low ADM limitation for inpatient hospital services because of the mistaken perception that a strong DRG reimbursement at many facilities and deep discounts at children's hospitals were protecting the plan from all risk except for exceptionally long hospital stays. In reality, the facilities being reimbursed as a percentage of billed charges had been rapidly raising their rates. The plan was experiencing average costs per day that were well in excess of its ADM limitation, despite the presence of these deep discounts.

Once the plan recognized these circumstances, it restructured the reinsurance coverage to provide more coverage for high-cost days. The quickest solution was for a higher ADM limitation for inpatient hospital services, coupled with a slightly higher deductible. This allowed the plan to exchange reinsurance premium dollars for better reinsurance reimbursement and for predictability on the risk of long and higher-cost per-day-hospital stays.

HEALTH PLAN E ("Is it real, or is it artificial?")—Health Plan E was subject to an artificial per diem reinsurance limitation on its owner hospital without realizing it. Upon review of its reinsurance claim experience with that hospital, a more reasonable reimbursement arrangement was suggested.

Provider-sponsored HMOs are distribution channels for the hospitals sponsoring the plans. Such charges from owner facilities are often called domestic charges. There are many ways to deal with the owner hospitals in the reinsurance. These may allow for excluding owner hospital charges from the reinsurance agreements, treating the risk the same as that from any other participating/nonparticipating facility in terms of coverage parameters, or providing a limited reimbursement for domestic charges. The latter can be accomplished by setting artificial per diems or by entering into contractual arrangements between the plan and the owner hospitals. Since provider-owned plans obviously have more control over their own facilities and the hospital reimbursement arrangements between the health plan and the provider owners, the question is whether the plan and provider owners feel comfortable managing the risk internally or would prefer to seek some form of reimbursement for domestic charges.

Entirely excluding the owner hospital from the reinsurance

CHART 5

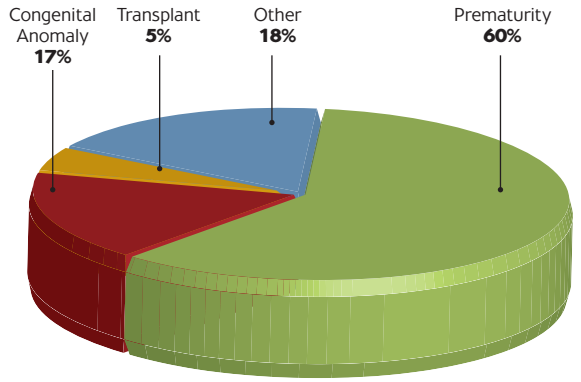
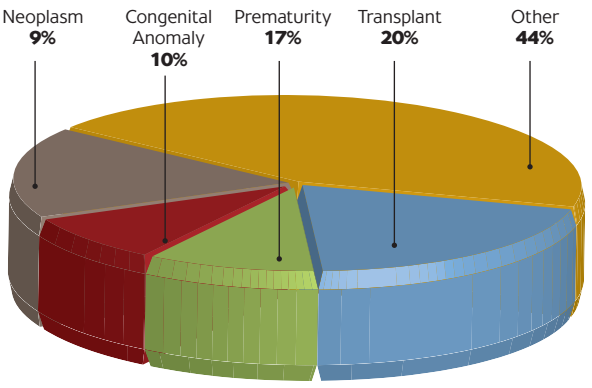


CHART 6



coverage may reduce the cost dramatically if a significant amount of hospital care is delivered there. A commercial health plan that excluded its owner hospital from the reinsurance reimbursement reduced its reinsurance cost by 25 percent. The artificial per diem on another owner hospital reduced the reinsurance cost by 50 percent on Medicare risk and 25 percent on commercial risk, but the plan experienced significant claim cutbacks resulting from this internal limitation.

HEALTH PLAN F ("We're from the government and we're here to reimburse you for managing care.")—Reinsurance coverage is typical for all populations insured by the plan, be they commercial, Medicare, or Medicaid members. But while the coverage parameters can be very similar, the types of catastrophic claims for these populations vary significantly.

Health Plan F is a Medicare plan. Since, by definition, it insures an older population, there are several key differences between the plan's catastrophic claim experience and that of a commercial population. There are no neonatal claims. At the same time, there are few organ transplants, although dialysis patients may qualify for Medicare after several months of dialysis and therefore also to be covered for a kidney transplant. More common Medicare diagnoses involve cancer treatment or heart conditions. Medicare claims also tend to be for long, drawn-out treatments compared with some of the shorter, higher-cost claims associated with traumas or complex treatments for infants and children.

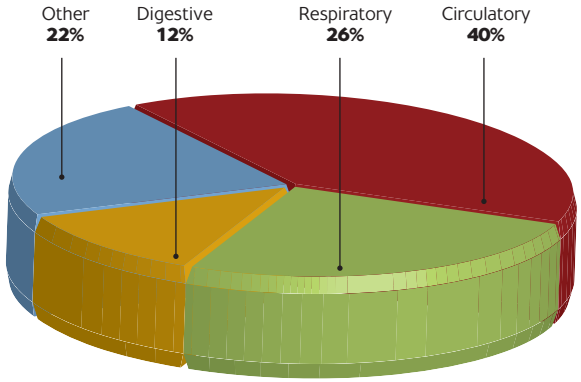
Given the typical Medicare DRG reimbursement mechanism, it's very difficult for a claim to reach high dollars unless there are very high levels of billed charges or possibly different admissions over the course of a year. Each admission and subsequent discharge would generate a new DRG payment. It's hard to accumulate large dollar payments even with several DRG payments without any large outlier amounts.

Medicare catastrophic claims also differ from commercial claims by the deductible chosen. At lower deductibles, Medicare claims are much more frequent than they are for a commercial population. At higher deductibles, due to the lack of neonates and transplants and the fact that many older patients are unable to survive extreme treatments, the frequency of catastrophic claims declines sharply.

Medicaid risk also requires specific demographic considerations. There are many younger women of child-bearing age in the various Medicaid risk categories. This translates to a higher prevalence of premature births and other health problems seen with newborn infants. The aged, blind, and disabled populations of Medicaid have distinct and different risk profiles. These members are subject to more chronic illnesses. This may be because their disability qualifies them for Medicaid Supplemental Security Income or simply because an aged population is more likely to suffer from chronic illnesses. Finally, there are occasionally members who are eligible for coverage under both Medicaid and Medicare.

As with Medicare, Medicaid reimbursement is typically DRG based. Reinsurers prefer DRGs and per diems with no outliers because they are predictable. Most state Medicaid reimbursement schedules result in a substantial discount from billed charges and are often the lowest forms of reimbursement available. The State Child Health Insurance Program (SCHIP) is an extension of Medicaid. Composed usually of healthy children, these populations have proven to be one of the lowest-risk segments of any govern-

CHART 7



ment program. Typically, SCHIP includes children aged 6 months to 19, so there's no neonatal risk.

Chart 5 looks at Medicaid claims by diagnosis. Chart 6 does the same thing for commercial insurance, as Chart 7 does for Medicare claims. The proposed reinsurance deductible level and disease management programs should take these claim frequency and severity trends by coverage type into consideration.

Taking the Mystery out of Reinsurance

The goal of proper reinsurance coverage is to take the mystery out of reinsurance. Reinsurance programs should protect those being reinsured based on their own unique needs and risk tolerance levels. This will ensure that the reinsurance coverage accomplishes its objectives of being a predictable budgeting tool with few surprises.

The motto of the Society of Actuaries, taken from John Ruskin, is "The work of science is to substitute facts for appearances and demonstrations for impressions." With a clearer picture of its catastrophic risk exposures and redesigned coverage for those exposures, the health plan is in a much better position to frame its future. □

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