**UNIT 4: Incentive Systems**

Overview:

This unit consists of five (!) videos. (This is by far the longest unit in the course.):

4A: The video provides background for our discussion of value-based payment model mechanisms by briefly reviewing extrinsic/intrinsic motivation, principle-agent problems, and contracting goals in healthcare (maximize patient experiences, maximize population health, and minimize costs).

4B: (*Note that this video was further broken into four parts during production.)* The video reviews fee for service, bundling, capitation, and shared-savings compensation mechanisms as components of value-based payment models. For each component, I consider both benefits and concerns from the perspective of adding value; I also note what investments can further value-based implementation. I consider the difficult balance between over-treatment versus under-treatment (or stinting). I also briefly consider how each compensation mechanism fares in terms of general employee preferences for controllable compensation models.

4C: The video reviews three issues that commonly arise in implementation of value-based payment models. First, provider choice of compensation scheme allows for adverse selections. Second, instrumental process measures are often useful but also risk issues with treating to the “test.” Third, specific targets are most motivating to organizations that start below, but close to, the target level.

4D: The video briefly reviews Accountable Care Organizations (ACOs) as examples of value-based care initiatives

4E: The brief video notes that information evaluating providers can fulfill an incentive function, potentially changing provider behavior even in the absence of (apparent) use by patients

Learning Objectives:

1. Review basic pay for performance themes and issues regarding using extrinsic incentives to address principal-agent issues. (This is largely a re-cap of management course content.)
2. Understand the pros and cons of four basic building blocks of provider incentives particularly in terms of where they focus provider attention regarding value, what risks they impose on providers, and what investments are most needed for encouraging value. Across these mechanisms, there are tradeoffs regarding likelihood of over- (versus under-) treatment and regarding coordination versus controllability. The incentive mechanisms are:
   1. Fee-for-service (payment per discrete procedure)
   2. Bundled payments (aggregate payment per illness episode)
   3. Capitation (set payments per covered person per time period)
   4. Shared savings mechanisms (usually add-ons to one of the payment mechanisms above).
3. Understand the impact on overall compensation systems of: provider choice, employment of process measures, and specific performance targets
4. Recognize ACOs are systems that combine various aspects of incentive systems
5. Recognize “report card” information can serve an incentive function.

Role in Course: Incentive systems are the center-piece of most value-based care initiatives. These videos (particularly videos 4A-4C) are very important for you team project and the final exam.

**Incentive Systems: General Introduction**

(Note that much of this information overlaps with your management class this term.)

Value-based care is generally focused on **extrinsic** incentives. We need to be mindful of general advice from management (Jack and Rick!) and try to ensure that extrinsic incentive systems do not unduly erode intrinsic incentives (e.g., provider professionalism, work satisfaction, etc.). Often, the balance between extrinsic and intrinsic rewards points out the need to create direct provider engagement and buy-in with value-based payments systems.

Organizations generally use extrinsic motivation to solve principal-agent problems in compensation. Optimal incentive design aligns the interests of principles and agents; for instance, a firm may create an external incentive for a salesperson to work hard to make sales by paying that salesperson partially with commission on those sales (aligning salesperson goals for pay with employer goals for sales).

We can apply these ideas to healthcare, but when we do so, we see that multiple potential “principals” exist. In the simplest version of these problems, the principal is the patient. That is, we want providers to execute healthcare in a way that is most consistent with the patient’s preferences, aligning patient and provider incentives for high-value healthcare. However, providers also must be agents for payers; that is, providers act on the behalf of payers in delivering care that is compensated by payers, so payers have an interest in aligning incentives. Given that patient and payer interests may not be aligned, the provider is often caught between serving the incentives of each. Payers may be interested in pushing providers in the direction of lower costs and hence higher value. However, patients, and policymakers acting on behalf of patients, will often be most interested in maintaining the benefits of care. Hence, we often see multifaceted incentive systems including both measures to incentivize cost savings and also some protections to ensure that care quality is maintained.

Heath care delivery presents complications on the agent side as well. Specifically, health outcomes are usually determined by teams of providers, coordinating across time and clinical expertise. This means that providers must act as agents for each other.

Physicians may also act as agents of hospital (or other) employers; these provider-as-employee issues are often possible to address with standard techniques for managing employees in organizations (as covered in your management course).

**Defining Value**

Value must balance the need to maximize the benefits of care (often focal for patients) against the need to minimize the costs of care (often focal for payers). According to the **Triple Aim** Model put forth by the Institute for Healthcare Improvement, value is based on:

1. Benefits: maximize the patient experience of care, that is, all else equal we want patients to get what they want. This aim reflects a respect for patient autonomy and conceptualizes healthcare as a service.
2. Benefits: maximize population health. This aim reflects the desire to minimize disease burden, thereby both reducing mortality and enhancing health-related quality of life.
3. Costs: providing care at the lowest total cost per capita possible, including direct costs of provider care, administrative costs (e.g., billing), and patient opportunity cost such as the burden on patient time.

Beyond balancing these aims, another goal for all incentive-compatible contracting is to implement systems that mitigate gaming. **Gaming** occurs when agents use their superior knowledge and / or control of information flows to mis-represent their actions (e.g., by recording overly aggressive diagnoses to generate bigger fees).

**Compensation Mechanisms: Fee-for-Service**

For fee-for-service (FFS) payment, total payment to a provider is based on the sum of payments for each distinct procedure performed. Services are unbundled in this case, in that they are paid for separately with a specific price for each, as follows:

Payment = Σ (N \* $M)

Where:

N = number of each procedure performed

$M = reimbursement rate (“price”) for each specific procedure

Because procedures are the units of analysis that drive monetary payments to providers, this system creates incentives for two things. First, there are incentives for **volume**, or to perform as many procedures as possible. This volume can come from serving more patients as well as from providing more procedures per patient. Second, across procedures, there are incentives for **higher-margin services** rather than lower-margin services. Margin is simply the price set for the procedure by the payer minus the direct costs to the provider such as for supplies.

In this model the provider is only at **risk** for the overall costs of providing the service: these costs are any direct cost for the procedure and any opportunity costs regarding provider time or facility use. Often only the provider and the provider’s own staff is involved in generating payments, so disbursement of payments is relatively simple and often provider-controlled.

The FFS payment mechanism is often considered a major culprit in healthcare conflicts of interests, with many value-based care initiatives involving a move away from FFS payments. However, it is quite possible to encourage greater **value** even within a FFS model. Specifically, providers often have a choice of different procedures they can perform across patients and / or for a particular patient. If the payer wants more of one type of procedure and less of another, that is if certain procedures are evaluated as higher value, then the payer can align incentives by changing prices (reimbursement rates) to better compensate desired procedures. This would work best in an acute care setting where there is a current, identifiable need. What FFS cannot do well is create provider incentives to optimize the mix of health services across time and types of service because the provision of care is fragmented (i.e., each provider is generally focused on his or her procedures performed, rather than overall care).

In a FFS setting, value can be improved with **investments** in cost accounting so that physicians and others actually know margins. It can also be improved with a good understanding of the comparative effectiveness of various treatments so that payers know how to set reimbursement levels to incentivize more beneficial procedures.

**Compensation Mechanisms: Bundled payments**

Bundled payments occur when providers are paid based on illness episode (e.g., a knee replacement). Overall payment in this case is simply a sum of all of the episodes of illness a provider addresses multiplied by the payment for each illness. A provider (such as a hospital system) that cares for many different types of disease will have overall payments equal to the sum of reimbursements for every type of illness that is treated. Payments based on Medicare DRGs (or diagnostic related groups) are an example of bundled payments (although Medicare typically adds additional adjustments, for instance for teaching hospitals).

Payment = N \* $B

Where:

N = number of illness episodes addressed

$B = reimbursement rate (“price”) for each bundle

(Note that the above assumes a provider only addresses one type of illness, e.g., uncomplicated knee replacement. In reality, most providers would address multiple, related illnesses, each with a potentially different reimbursement amount.)

With bundled payments, the provider receives one overall payment per illness episode, so the provider has an incentive to treat the illness episode **efficiently**. (The provider also has an incentive for volume, that is to treat as many distinctly-reimbursable illness episodes as possible.) With bundled payments, the provider would get the same payment for a particular hospital stay whether a specific procedure was performed once or twice during that stay. Obviously, this creates an incentive for efficiency, such as through getting it right the first time or through better coordination to root out redundancy. Hence, bundled payments shift incentives by making it costly for the provider if a patient is subject to complications or errors in care.

Bundled payments, also called global and/ or episode-based payments, are often the first step away from fee for service payments. This payment model shifts some of the **risks** of inefficient care from payers to providers. This makes sense because the providers often have more control over care quality and efficiency. Bundled payments also generally incentivize a provider system to coordinate care, so that each provider has at least some incentive to ensure that other providers on their team offer high-value care. For instance, one provider may have an economic incentive to minimize errors or redundancies caused by a different provider on the overall team addressing the illness (and sharing a bundled payment).

Overall, the basic logic of bundled payments is that by giving provider organizations control over a complete episode of care, payers directly incentivize these organizations to increase **value** by maximizing the efficiency of that care. For this efficiency to best occur, payment schemes need some specific features. First, the payer must create good clinical episode definitions that are risk-adjusted to mitigate adverse selection. Specifically, if physician payments are not risk adjusted somehow, bundling can easily turn into unintended incentives for selecting better (e.g., lower risk and hence cheaper to serve) patients for care. This is a form of adverse selection in that providers would have an incentive to focus on, or encourage selection of services by, particular patients. Second, the payer must create good definitions around the boundaries of a care episode. A major concern with bundled payments is the phenomenon of “un-bundling” whereby low value care actually creates additional illness episodes requiring additional payments outside of the bundle (e.g., to address issues from avoidable complications). For bundled payments to truly motivate high-value care, all care needs to be attributed to the relevant illness episode. There are also opportunities for gaming if providers are solely in charge of attributing care to illnesses (e.g., if providers are free to define complications as new events generating new payments).

One important design feature for bundles is whether they include some expected cost of potentially avoidable complications. It might be tempting for a payer to define a bundle in terms of optimal care, but if we know that providers are going to see some complications on average, this payment level may be too low to motivate a continued desire to treat patients.

A more general issue with bundled payments is that only some conditions have clear **boundaries**. Bundled payments tend to work better for specific, acute, well-defined illness episodes and interventions (e.g., acute, procedure-based interventions such as surgeries).

With bundling, we may begin to worry about **stinting** on needed care. The concern is simply that providers will be incented to withhold some valuable care to save themselves additional cost. Stinting won’t make economic sense if the care that is withheld could cause expensive complications– as long as treatment of those complications must be performed by the provider and without additional payments. Stinting would make economic sense if the care that is withheld could cause complications that won’t be the responsibility of the provider paid for the bundle.

Efforts to increase value in bundled care settings often require specific **investments**. Both a benefit and a challenge of bundled payments is that multiple providers with distinct expertise often share in one summary payment (and also have to cover various direct costs from that payment). Thus, for providers, bundled payments often motivate investments in tracking accountability and activity to ensure equitable payment sharing for multiple providers. These systems often have spillover benefits of allowing better tracking and encouraging coordination, but they can be both expensive and politically challenging to set up (with providers from each specialty tending to over-estimate the importance of their own contribution to the bundle).

Finally, as mentioned above, bundles only align incentives well if the bundles have appropriately broad boundaries and if payments levels reflect clinically sound risk adjustments. Both efforts require a good deal of evidence-based knowledge that payers must either undertake themselves or gather from policymakers. Hence, bundled payments motivate investments in understanding the bundles themselves and the main patient risk factors associated with bundle outcomes.

**Compensation Mechanisms: Capitation**

At the other end of the continuum from fee for service, we have capitation. With capitation, payments are disconnected from both procedures and illnesses. Instead, the healthcare organization is compensated per patient per time period. This payment covers a specifically-defined package of healthcare services (e.g., all care, all physical care, all diabetes-related care, etc.). For instance, a health care organization may receive a certain payment per covered individual per month, regardless of the specific illnesses or interventions occurring for that individual. If a covered individual needs any medical procedure, then the organization is responsible for providing the care and funding it from the overall pool of fixed payments. Capitation significantly shifts the incentive paradigm.

With Capitation, the only way the provider changes its overall payments is by enrolling more patients. That is, payment is a fixed amount per patient per time period.

Payment= Ps \* $F \* T

Where:

Ps = number of people covered

$F = fee per time period (e.g., month)

T = time period (e.g., 12 for scaling monthly to annual payment)

The provider is also responsible for all costs related to the service definition; thus, capitation provides the strongest provider incentives for overall **efficiency** and coordination of all care (within the service definition at least). Given that payments are fixed, the provider has economic incentives to avoid the need for medical interventions. As with bundled payments, providers are incented to avoid expense from complications or errors. However, capitation goes well beyond bundled payments because the provider is now incented to avoid the need for care associated with illness episodes altogether (e.g., perhaps encouraging physical therapy instead of surgical intervention). Thus, capitation causes incentives for efficiency by more fully shifting the **risks** of care to providers.

Under capitation, policy makers (and others) worry most about the potential for **stinting** on care. Stinting would be a particular problem for care that is deemed beneficial to patients but that is not likely to offset later, more expensive events that would be covered by the provider organization receiving capitation payments. Hence, stinting is less of an issue as patients are covered for longer time periods because healthcare underutilization tends to lead to longer term problems on average. In many cases, however, patients churn in and out of capitation systems because they might change geography, or change health insurance, etc. And even with stability in the patient base, a provider system might be myopic, particularly if administrators are under pressure to show positive short term economic outcomes. In these situations, provider organizations may be motivated to stint on current care, or equivalently to under-treat. Overall, concern about stinting on care arises if better quality care does not reduce the expected probability of illness and hence the expected need for additional services within the expected (or focal) covered period. Sometimes assurances against stinting result in form of specific **quality measures**, for instance in terms of primary care and preventive screening. These measures might be tracked and even separately compensated (perhaps as a per-patient quality bonus) as a safeguard against stinting.

Capitation also brings up the adverse patient selection issues relevant to bundling – and these issues tend to be more extreme for capitation. If all capitation payments are equal, then young, healthy, low-risk individuals become very sought after and older, sicker, higher-risk individuals may be avoided.

Another feature of capitation is that it tends to require a certain **provider scale**. Because it shifts all risks from costs of care to the provider, capitation is more attractive and sustainable for larger provider organizations that can spread risk.

In terms of incentivizing value, capitation is often the best choice for **chronic care**, particularly in situations where better clinical process quality and better patient experience reduce the need for additional healthcare services. That is, capitation does best in situations where high quality care up front reduces the need for more expensive care within the time period under consideration for providers (e.g., with diabetes management that lowers the provider’s need to fund expensive care for complications).

If capitation is only in place for a set of health services, such as primary care or diabetes management, then providers have economic incentives to **refer outside** of the capitation system. (This is analogous to the unbundling problem we discussed with respect to bundled payments).

Value-based capitation incentives require **investment** in clinical knowledge. For capitation to work, some entity must invest in and monitor patient factors for clinically sound risk adjustment. Similarly, an entity must often invest in measures of process or outcome quality to mitigate stinting. Even more than is the case with bundling, capitation requires accountability and payment sharing for multiple providers. This joint accountability can create incentives for coordination but it also increases creates administrative and decision making costs.

**Compensation Mechanisms: Continuum of FFS to Capitation**

One way to think about payment mechanisms is as a continuum from fee-for-service to bundling to capitation.

* As we move from FFS to Capitation, the provider takes on more risk; that is, it becomes easier (more common) for a provider to lose money on a particular patient.
* As we move from FFS to Capitation, we also move from financial provider incentives pushing towards over-treatment to financial provider incentives pushing towards under-treatment (stinting).

**Compensation Mechanisms: Shared Savings**

Shared savings payment mechanisms involve a bonus or penalty for results that come in under (for a bonus) or over (for a penalty) benchmark value levels. The simplest form would be to pay (or charge) some percentage of overall cost savings (or overages). Shared savings incentives are generally a feature of more comprehensive value-based payment systems rather than being freestanding payment mechanisms.

The most basic shared savings models do exactly what their names suggest. That is, they incentivize providers to save money by sharing a portion of that savings.

Typically, a shared savings model will specify some fraction (or beta) of savings that goes to the provider, with the rest of the savings retained by the payer. Often the amount of the savings is capped. For instance, a provider might be offered 80% of savings from some benchmark up to a cap of 15% of total costs.

Some shared savings programs are one-sided, that is they only provide gains to providers in the form of extra payments. Some are two-sided, in that providers can be financially penalized for losses (i.e., costs that come in over the benchmark). The **risk** to the provider with shared savings is in terms of monetary costs of foregone bonus payments or (with a two-sided model) the monetary costs of penalties.

Clearly, shared savings models are intended to align incentives towards cost savings by sharing that savings with providers. Generally, a shared savings model would be deemed too risky to make it the basis of total payment. That is, it’s very difficult to consistently and reliably bring costs down while ensuring that patients get needed care.

Often savings are defined over an entire health system or provider organization. In this case, as with bundling and capitation, shared savings becomes an incentive to provide accountability for coordination and it also requires providers to create some model for sharing any bonus payments across multiple providers.

As always, when we incentivize cost savings, we need to worry about stinting on needed care. This means there can be limits to the benefits of shared savings. Shared savings models are often specifically targeted to balance against specific incentives to over-treat. For instance, shared savings may be used to balance incentives from fee for service models.

In shared savings models, we need **investments** in modeling and forecasting expected baseline expenditure levels. We also want to make sure these benchmarks are not easy for provider organizations to game (e.g., by deliberately over-spending in a baseline year). On the provider side, if shared savings is defined at the system level, provider organizations often have to create accounting systems to track patients and costs attributable to individual providers.

**Provider Compensation Mechanisms as Pay for Performance**

As discussed in Unit 3, we know that compensation mechanisms can shift a professional’s **focus**, potentially unintentionally. With fee for service, the focus is on doing more procedures. For bundled payments, one focus is on covering a greater number of care episodes, another is to focus on cost-efficiency for each episode. For capitation, the focus shifts to more holistic value-based care where providers want to minimize the need for care (and particularly expensive care) overall. And for shared savings, of course, the focus of effort is on cost reduction.

As we move from fee for service to bundled payment and then to both capitation and/or shared savings, providers generally have to accept lower **controllability**. That is, we tend to move from outcomes that are largely controlled by individual providers (with fee for service) to outcomes that are controlled by care teams (with bundling) to outcomes that are jointly determined by all providers in a system (with capitation and shared savings). Contingent rewards (such as salesperson commissions) tend to be, in general, *less* preferred when controllability is lower. Hence, the low controllability of value-based incentives (such as capitation and shared savings) often creates difficulties. However, there is often an inherent tradeoff between controllability and the comprehensive health benefits (and overall positive outcomes) we actually want to incentivize. Health itself is multiply determined, so very controllable systems (such as we see with fee for service) will not tend to be well aligned with the actual outcomes desired (such as coordinated care resulting in lower overall mortality).

We can evaluate these payment mechanisms by additional features known to influence general employee reactions to pay for performance systems. First, individuals prefer **stability** over longer time periods. For instance, stability allows time for providers to make adjustments to care processes and see rewards. As a result, accountable care or other value-based quality contracts often guarantee a reimbursement schedule for a few years.

Individuals also tend to dislike **relative** outcome benchmarks; for instance, benchmarks that reward outcomes that are above median as compared to peer hospitals. Given that peer performance is not controllable, relative measures generally seem risky and reduce motivation. Still, relative measures are quite common in healthcare because they allow payers to control for common environmental and market factors (such as perhaps cost of living) in assessing value.

Finally, for incentive systems, **incremental** rewards often beat “high stakes,” all-or-nothing outcomes, particularly in risky environments. To implement increments, we have to be able to measure increments in improvement.

Difficulty balancing all of these factors is one reason we often combine payment mechanisms in value based care. For instance, an overall payment system might provide some incentives for reaching stable (absolute) benchmarks with some (incremental) incentives for improvement.

**Payment Model Features: Provider Choice**

In some settings, payers will offer a menu of possible payment schemes, allowing providers to choose how (according to what mechanism) they will be compensated. Provider choice is often politically necessary, particularly when payers are attempting to change compensation systems. However, choice also creates adverse selection.

On the provider side, the issue is that through adverse selection, choice can cause sorting that looks like provider behavior change, but isn’t. Usually a payer might have some sense about provider quality, but providers will generally have more complete information. That is, providers have private information they can exploit in making their choices. For instance, imagine that a system (such as Medicare) decides to allow providers to choose between standard fee-for-service and capitation payments, where capitation is intended to encourage increased value. With choice, lower-quality providers may know that it will be difficult for them to deliver the kind of effective and efficient care that keeps patients out of the hospital, so they may choose more conventional, fee for service reimbursement. Higher-quality providers may choose the capitation system, as these providers are more confident that they can deliver high-quality care that actually saves money by preventing or minimizing disease burden. Once these choices are made, one would observe that providers under the capitation system deliver healthcare with higher value than providers under the fee for service system. Hence, it will look very much as if capitation caused an increase in value; however, this result could be due to provider self-selection alone.

On the patient side, some providers treat riskier patients, that is patients with worse expected outcomes. Providers could have more information relevant to patient risk than payers or others might have, due to the providers’ direct points of contact. If value-based compensation (e.g., a bonus for quality) is allocated according to actual (that is, non-risk-adjusted) patient outcomes, providers who serve patients with better expected outcomes may sort into the value-based system while the other providers may not. If this sorting happens, then the average patient outcome for providers under the bonus system will be higher than the average patient outcome for providers who forgo the bonus system. But, as before, this doesn’t mean that the bonus system motivated better care, just that providers were able to predict their own outcomes and sort into the compensation system that is best for them. Even more worrisome, providers in this situation also have an economic motivation to avoid the riskier patients, changing expected provider outcomes by changing the patient mix.

Overall, then, when providers can choose whether or not to adopt a value-based payment, it is then important to recognize that any final differences in quality across compensation systems can be driven by one of two factors: 1) compensation changing provider behavior by incentivizing quality (the desired outcome), 2) sorting whereby already higher-quality providers are more likely to choose the value-based payment option.

**Payment Model Features: Instrumental Process Measures**

For healthcare, we typically have a good sense of the desired ends. These are factors that are inherently valuable such as the triple aim of positive patient experience, excellent health outcomes, and low overall cost. We have a particular problem for health outcomes, however. Payers generally can’t wait to determine quality by observing factors such as overall mortality, as they need to assess care close to the time it’s provided (and hence compensated). Further, overall health outcomes are often determined by many, many providers as well as by the patient’s own behavior.

If we can’t rely solely on measures of end states, it’s often useful to consider the means to these ends. These are instrumental measures, that is measures that are valued because they are demonstrated (through scientific evidence) to lead towards our desired ends. They might include performing specific screening or diagnostic tests in appropriate situations, prescribing particular high-value drugs, managing biomedical markers of disease, etc.

For providers, compensation based on instrumental process measures is often more acceptable than compensation based on overall (aggregate) health measures, for several reasons. Process measures tend to be generally more controllable by the provider than outcome measures. Process measures also: 1) tend to be stable as far as evidence base is stable, 2) can often be defined on an absolute (rather than a relative) basis, and 3) are inherently incremental, allowing for at least the possibility of small rewards as specific processes improve. Process measures also provide some inherent risk adjustment in that it is often feasible to identify provider process measures that are not reliant on patient characteristics or behaviors.

Process measures can be used in one of two ways in incentive systems. First, process measures can provide additional components of compensation, as an add-on to the basic payment systems discussed earlier (e.g., providers under any system could be given an extra monetary bonus for excellent performance on quality measures). Second, even if not directly tied to compensation, process measures might be tracked as checks on the quality or benefits of care, particularly where there are concerns about stinting.

While there is much to recommend process measures, they also provide significant danger of what many call treating to the test. This is a concern in (very common) situations where desired provider behaviors are varied and complex such that it is not feasible to set an incentive for (and measure) each possible provider behavior. When payers choose a subset of instrumental process measures to incentivize, they may also create spillover effects. We say there are spillover effects whenever measured (and incentivized) processes influence unmeasured processes. These spillover effects can either increase or decrease performance for processes that aren’t incentivized.

Spillover effects can be positive. This is likely to occur if the relevant behaviors are themselves correlated, perhaps because the behaviors are supported in the same way (e.g., an appointment scheduling process for mammography screening may be used to schedule and track additional screening behaviors even if those screening tests are not directly incentivized).

Spillover effects can also be negative. These negative effects are what is meant by concerns about treating to the test. If provider processes and behaviors are independent of (or uncorrelated with) one another, then a diversion of resources to incentivized behaviors could cause a neglect of other behaviors. For instance, this could occur if a provider responds to incentives for mammography screening by shifting clinical time that would have been spent on mental health screening towards support and discussion of mammography. In this case, there may be an improvement on cancer screening but it is coming at a cost to mental health care.

If we are worried about negative spillovers characterized by treating to the test, there are a few remedies that we can consider. First, a payer can continue to measure overall outcomes as well, perhaps even with some incentives tied to longer term patient health outcomes. Of course, this typically requires a longer-term initiative. Second, payers could change some measures randomly (e.g., engage in “pop quizzes”), so that providers are not sure what they can actually neglect without the potential for losing compensation. This tends to be unpopular. Third, it might sometimes be feasible to track un-compensated measures to look for spillovers, with no immediate links to incentives. This is basically a soft version of the pop quiz approach and will at least allow payers to assess the magnitude of the problem.

**Payment Model Features: Target Levels**

Once a payer has specified desired processes of care, the next step is to set targets that trigger compensation levels. Targets are often tied to process measures (e.g., a percentage of patients getting a flu shot) but can be tied to outcomes as well (e.g., Taiwan's national breast cancer program provides targets for the proportion of patients meeting or exceeding stage-specific survival goals).

Targets are not equally motivating for everyone. An individual or organization who is very far below a target may feel it is too costly, or even futile, to improve. Costs will almost always go up with improvement, and the firm may not have the resources (or even the patience) to endure rising costs for a substantial time before a target is hit and hence revenues increase.

An organization already above a target has no incentive to improve. The only economic incentive this firm has is to save costs by lowering quality down to the target level. This is why targets often go up over time. That is, some incentive systems raise targets over time to continue to create motivations to improve.

So, we see a goldilocks effect: The “just right” level for maximum motivation is a target that is somewhat, but not significantly, above levels of current performance. Targets generally work for organizations who are below the target, but close enough that they forecast an ability to economically get there. Payers can sometimes address this issue by implementing multiple targets, resulting in stepwise compensation systems (e.g., a small bonus for hitting a more modest target, a moderate bonus for hitting a somewhat higher target, etc.).

**Accountable Care Organizations (ACOs)**

ACOs typically combine several value-based incentive mechanisms in an attempt to create a provider organization with a comprehensive culture of providing high-value care. Usually, ACOs employ some form of risk-adjustment, and also employ some system of bonuses for better than average performance and for improvements on quality measures. More generally, ACOs often combine multiple financial incentives into an overall system that tries to balance incentives for value against assurances of quality standards in care. Medicare ACOs, for example, involve: 1) pathways intended to allow provider groups to make some choice regarding phasing from fee for service to capitation, 2) shared savings incentives ranging from bonus-only to bonus-plus-penalty, and 3) bonuses for hitting targets in terms of quality process measures. The benchmarks for both shared savings and for process measure targets introduce a good deal of complexity into Medicare ACO contracts, as baselines reflect provider history (allowing for improvement incentives), patient characteristics (risk adjustment), national trends, and regional costs.

A recent review (Kaufman et al. 2017 *Medical Care Research & Review*) looked at 42 separate studies evaluating ACOs. They conclude that ACOs show relatively modest results with some variability. The two most common associations with ACOs are: 1) a reduction in inpatient and Emergency Department utilization, and 2) improvements in prevention and chronic disease management. There are no clear effects (either way) for overall health outcomes or patient experiences. Further, average savings tend to be nominal at best.

Kaufman et al. note that any effects from ACO contracts involve the combination of contract incentives (e.g., financial accountability of providers, quality measures, and data sharing) and

provider group characteristics (e.g., governance or how providers organize themselves to coordinate care and share incentives, information technology, and patient mix or types of patients covered and how they are managed). They note that the key promise of ACOs is that contract features and provider group characteristics will combine to actually spur **innovation** in the value of care delivery.

**Information as Incentives**

We focus on the aggregation and dissemination of evidence-based information in course Section 2. Note, however, that even if never tied to any monetary payment, information can function as an incentive, particularly if it is public, as with ratings report cards. First, patients may change their choices, shifting market share towards better-rated providers. This mechanism could have an indirect effect on provider behavior, through patient choice. Second, and importantly, ratings may directly incentivize providers to change their behavior. Providers (like others!) don’t like to be evaluated negatively and will be incentivized to avoid negative ratings.

An early example of this second mechanism comes from the New York State’s publishing of risk-adjusted mortality rates for heart bypass surgeries in 1991. As a result, surgeons with the highest mortality rates tended to move on, no longer performing heart bypass in New York. Some surgeons retired or changed to non-surgical provider roles, while others moved to another state and continued to perform surgery. There is also some indication that referrals to specialty centers such as the Cleveland Clinic increased in the wake of the public ratings.

**Summary**

Unit four discusses several potential payment mechanisms and relates them to value-based care.

* Fee-for-service (payment per discrete procedure) payments focus providers on volume and margins and encourage over-treatment. Payers can encourage valuable activities by setting prices (to determine margins). Investments in cost accounting systems can also be useful for helping providers understand and track margins.
* Bundled payments (aggregate payment per illness episode) focus providers on increasing value through efficiency in treating illness episodes, and start to put providers at risk for the costs of inefficient care. Concerns regarding stinting (under-treatment) also begin to occur here, particularly if the costs of suboptimal care can be defined as outside of the current bundle (e.g., if care provided following a complication can actually generate new fees). Under bundling, provider organizations often must invest in systems allowing for accountability and coordination to ensure efficient care delivery and fair distribution of overall bundle payment amounts across various providers.
* Capitation (a set payment per covered person per time period) focuses providers on creating value and efficiency for all care; it also puts providers at risk for the total costs of care. Under-treatment (stinting) becomes a concern, and the possibility of stinting may be monitored with quality measures. Capitation works best for large-scale provider organizations (that can spread risk), chronic care, and when there is little possibility to game the system by referring out of the capitated services. Implementation can benefit from investments in risk adjustment, monitoring for stinting, and assessment of accountability and coordination across providers.
* Shared savings mechanisms are usually add-ons to one of the payment mechanisms described above. They focus providers on costs savings, and often encourage coordination across individual providers in an organization. Often, specific investments are needed to determine the baseline against which cost savings (or cost overages) will be measured.

Overall, we see tradeoffs across potential payment mechanisms:

* Payment systems encourage either over or under-treatment. No system creates perfect incentive alignment.
* Payment systems measuring and rewarding coordinated approaches to overall health are less controllable by individual physicians.

In general, individuals prefer compensation systems that are controllable, and also those that are stable, absolute, and incremental; the difficulty satisfying these preferences with any one compensation scheme often results in multifaceted value-based incentive systems.

In setting up multifaceted value-based incentive systems, several considerations become important.

* Allowing providers to choose amongst various payment mechanism has pros (i.e., choice is often necessary for buy-in) and cons (i.e., choice will encourage self-selection, obscuring the impact of incentives on behavior change)
* Instrumental process measures also have pros (they can often be made more stable, absolute and incremental; they have some inherent risk adjustment; and they can be used to directly address stinting concerns), and cons (they may cause treating to the test or negative spillovers resulting from attention being diverted from un-compensated processes)
* Specific targets for process (or outcome) measures are most motivating at performance just below the target

ACOs combine various aspects of value-based incentive systems. ACOs promise to empower providers for value-based innovation, but results are mixed so far. Finally, note that “report card” type information can serve an incentive function.

Overall, monetary incentives are usually considered the centerpiece of any efforts to increase value-based care. However, this unit does not perfectly explain how to eradicate conflicts of interest or fully align provider incentives with value. That’s because these things simply are not known, at least not yet. Hence, it is important to think deeply and critically about provider incentives and about value-based care initiatives more generally.