New York State All Payer Database Use Cases

DRAFT

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Introduction

Issue Brief

From the September, 2010 Commonwealth Fund Report[1]

"States are facing increasing health care challenges, from variable quality of care to ever-increasing costs. As health care reform initiatives get underway, states are beginning to look towards improved methods for collecting and distributing uniform health care information which can assist with policy decisions, setting standards, quality improvement assessments and informed decision-making. Comprehensive information on disease incidence, treatment costs, and health outcomes is essential for informing and evaluating state health policies, but it is not readily available."

New York State All Payer Database

Advancing health care transformation in an effective and accelerated manner to address cost, access and quality issues requires a broader view of population health and the performance of the health care system than current data resources permit. A variety of data access issues, such as incomplete or siloed data sets, undermine present efforts. To address the needs outlined above, New York State has enacted legislation for the creation of an All Payer Database (APD), to serve as a repository of claims data drawn from all major public and private payers, which may include insurance carriers, health plans, third-party administrators, pharmacy benefit managers, Medicaid, and Medicare. The APD will build on and enhance existing DOH databases including SPARCS and the Medicaid data warehouse. In the future, the APD may be enhanced with both clinical and public health data sources to further advance its utility.

In New York, there has been a great deal of investment in the Health Information Exchange infrastructure. The Health Care Efficiency and Affordability Law (HEAL) grant program has promoted enhanced interoperability, community-wide Electronic Health Records (EHR) adoption, and expanded care coordination through Health Information Technology. Due to these efforts, standardized health data is becoming readily available. The vision for the APD is to continuously enhance data capabilities, and begin to include both clinical and public health data sources to further advance its utility.

A comprehensive APD can serve as a key lever supporting policy and implementation of population health and health care system improvements. The APD will enable the evaluation of critical issues such as regional variations in utilization, quality, and cost. It can also examine the impact of reimbursement methodologies, public health interventions, and health care resources on utilization, quality, outcomes, and/or costs. Comparative effective research can be done more effectively with a more robust data set. Improved public health is a building block to the transformation agenda. There is an urgent need to improve prevention and activate community resources to target problems before they get to the health care system. Controlling health care costs means we need to understand charges and expenditures across

[1] D. Love, W. Custer, and P. Miller, All-Payer Claims Databases: State Initiatives to Improve Health Care Transparency, The Commonwealth Fund, September 2010.

payers, providers, and communities. When this data is publicly available, consumers will have the knowledge they need to compare cost and quality for important health care decisions. In addition, feedback to providers can lead to improvement in performance and quality.

Barriers

The APD development and implementation will require a great deal of cooperation and leadership to address issues of governance, technical integration, and alignment with synergistic state, regional and national initiatives. Stimulating collaborative efforts across multiple payers, providers and other stakeholders requires an approach that engenders trust and promotes transparency with regards to operations and decision-making. The Department of Health is currently leading a multi-payer initiative in partnership with the Adirondack Health Institute and several payers and provider systems, and MRT recommendations include authorization to expand these efforts to other regions in the state, leveraging lessons learned to date. Following suit, New York's APD will need to be established and operated in the public interest through a governance model that will ensure broad participation and use.

Inconsistencies in data requirements and reporting add significant burdens to reporting entities, making it difficult to compare the results from different data sets. The National Association of Health Data Organizations (NAHDO) has a long history of building consensus around the definitions for data standards for APDs and many payers have developed data reporting capabilities based on those standards. There are other initiatives across NYS that have developed data element and formatting specifications, as well as processes to review and check on data completeness and consistency. An APD for NYS would require a robust technical infrastructure (including security considerations) and significant resources for data collection, validation and analyses.

It will also be important to stay informed on the progress of national initiatives and align NYS APD efforts with other states. The current national dialogue about health care is impacting all the standards development and data content organizations. In particular, the emphasis on the important role of Electronic Health Records in reforming the health care system will impact all health data standards in the future. This effort will clearly impact all potential users of health data including implementers of APD systems. A non-uniform approach to develop APDs will diminish the overall potential for these databases, and may lead to significant additional expense for the payers who are submitting the data (especially those operating in multiple states). Conversely, developing APDs similarly across states will potentially enable cost-effective regional databases.

An additional benefit for the APD is the ability to spread costs relating to data collection and analysis, and provide centralized administrative support for the effort. Business planning and strategizing how the utilities of the APD can be leveraged to provide an ongoing revenue model will also be essential. Funding for maintenance and enhancements to the APD could be secured in various ways. It will be critical to engage stakeholders, such as payers, early on to identify the how the data and the analytic capabilities of the APD can be harnessed to ensure its

long-term sustainability. Exploring models that other states have adopted will also be valuable to initial planning efforts.

Benefits for Key Stakeholders

Stakeholder	Benefit
State Policy-Makers/ Public Health	• Enable targeted public health initiatives and interventions based on strategic assessment of health care disparities • Identify high-performing communities that provide cost-effective care, leverage that success to promote similar activities • Evaluate reform efforts to identify and duplicate successful initiatives, identify additional opportunities for reform
Health Plans (including Medicaid)	• Evaluate programs and implement new programs or expand upon successful programs • Promote or incentivize higher quality and lower cost treatments or refine reimbursement models • Measure and collect data related to safety, quality, utilization, health outcomes and cost • Modify contracts with providers in a geographic location based on the health needs of that area • Compare health care facilities and providers, quality, and cost
Employers	• Empower businesses to design insurance products and select providers based on quality, cost, and efficiency • Benchmark performance compared to peers- comparing cost and covered services of health insurance policies • Provide access to information to enable better negotiations
Providers	• Reduce burden due to transition to a coordinated data set • Improve treatment quality improvement due to a coordinated feedback loop and performance benchmarking • Strengthen quality measurement, and provide tools so that providers can better manage their entire panel of patients.
Research	• Evaluate costs, quality, efficiency, patient satisfaction indicators across different models, settings, geographic areas and patient populations • Analyze treatment options across a broader cross-section of patients- spread across age, gender, ethnicity, exploring what subgroups of patients respond best to each treatment • Generate reports to inform clinical policies, training and legislation • Identify additional research questions to inform future pilots • Identify gaps in existing treatment methodologies and the needs of clinical practice • Determine variations in costs of health care services across regions and influence policy to promote equity
Consumers	• Empower consumers to make informed decisions on health plans and providers through access to valuable information about their health care treatment options and

	to compare quality, cost, and efficiency among potential insurers

Call to Action

Many of the activities described above are currently underway on a smaller scale, but they are not coordinated as part of a systematic strategy that encompasses broader population needs or delivery system components.

The following are proposed use cases for the APD. The use cases highlight the goals that effective deployment of an APD could achieve, and ensure that state health priorities will be addressed. The purpose of the document is to consider the utility of the APD, prior to working through the technical architecture and detailed data specifications. NYSDOH will be soliciting input on the prioritization of these use cases. This will inform a roadmap for the APD action plan and next steps. Stakeholder engagement and commitment will be essential to success. All participants must be willing to increase transparency, incentives must be aligned, and collaboration must be paramount. Together, we will develop a leadership structure and a concrete vision for a New York State All Payer Database that delivers value to all health care participants. This is a starter set of use cases, and NYSDOH will be gathering stakeholder input on the development of additional use cases that are not addressed here. The expectation is that this will be a fluid document, which will continue to evolve through additional stakeholder feedback.

All Payer Database Use Cases

Health Care Transformation

I. Use Case Description

The health care system is undergoing a major overhaul aiming at not only improving access but also making health care affordable. Various models are being developed in order to deliver better care at lower costs. The transformation of the health care system includes new care coordination and payment models as well as innovative ways of measuring quality and costs.

A. Evaluation of Care Coordination and Payment Models

Care among many different providers must be well-coordinated to avoid waste, over-, under-, or misuse of prescribed medications, and conflicting plans of care.[2] Coordinating patient care effectively can lead to decreased direct and indirect health care costs, and improved patient and population health outcomes. Facilitation of information sharing about patients' needs and preferences enables seamless transactions between health care providers in the care continuum.

New models and preferred practices for care coordination and payment models are being developed and piloted across the state. Participation in a Regional Health Information Organization (RHIO), where a patient's data can be integrated across multiple providers, supports these care coordination models, and access to claims data from all payers would be a valuable supplement to the clinical information currently being exchanged across the state. Moreover, many of these initiatives are included in the Medicaid Redesign Team recommendations which were enacted as part of the 2011-12 State Budget. These examples include:

- **The Patient Centered Medical Home (PCMH)**, a team based model of care lead by a personal physician who provides continuous and coordinated care throughout a patient's lifetime to maximize health outcomes.
- **Medicaid Health Homes**, a model in which a designated provider or 'health team' is responsible for coordinating and providing access to preventive and health promotion services; mental health and substance abuse services; comprehensive care management, care coordination and transitional care across settings; chronic disease management; individual and family supports, including referrals to community and social supports; and long-term supports and services.
- **Health Plan Case and Disease Management Programs** (Transplant, Cancer, HIV/AIDs, Diabetes, Depression, etc)
- **Tele-home Care and Remote Monitoring services** that use electronic and telecommunications technologies to either provide care, or support care provided,

[2] Bodenheimer, T, Coordinating Care – A Perilous Journey through the Health Care System, New England Journal of Medicine, March 6, 2008; 358:1064-71.

electronically over a geographic distance—often between central health facilities and rural locations or homes.

- **Accountable Care Organizations** - This latest model for delivering services offers doctors and hospitals financial incentives to provide good quality care to Medicare beneficiaries while keeping down costs. An ACO is a network of doctors and hospitals that shares responsibility for providing care to patients.
- **Episodes of Care based payment** - Aims at improving the quality of care and bases payment on the overall treatment of the patient. For example, the Prometheus payment model packages payment around a comprehensive episode of medical care that covers all patient services related to a single illness or condition.

The goal of payment reform is to align incentives to support and promote the delivery of high-value care and reward improved health outcomes, while stabilizing or reducing total healthcare costs. However, it is often difficult to compare or evaluate the various payment models based on their common attributes. The All Payer Database can help evaluate distinct care coordination and payment models across settings to identify evidence based models and preferred practices. Another current limitation is that many providers are unable to distinguish Medicaid-Managed Care patients from other commercially insured patients associated with a certain Health Plan. This shortfall presents a significant issue for providers when they are trying to demonstrate that they see enough Medicaid-eligible patients to qualify for Meaningful Use incentive payments. The APD data can assist Medicaid providers in proving their eligibility for the incentive payments.

B. Quality Measurement and Improvement

A central goal of health care quality improvement is to maintain what is good about the existing health care system while focusing on the areas that need improvement. Quality problems are reflected in practice variations, including the under-, over- and misuse of health care services. Improving quality of care results in fewer medical errors, better health outcomes, reductions in waste, improved efficiency and lower overall costs.

Several types of quality problems in health care have been documented through peer-reviewed research:

- **Variation in services –** an indicator that health care practice has not kept pace with the evolving science of health care to ensure evidence-based practice in the United States.
- **Underuse of services –** When individuals suffer needless complications and potentially even death as a result of not receiving necessary care.
- **Overuse of services –** When individuals receive health care services that are unnecessary, increase costs, and may even endanger their health. An analysis of

hysterectomies performed on women in seven health plans found that one in six operations was inappropriate.[3]

- **Misuse of services –** Many individuals are injured during the course of their treatment, and some die prematurely as a result.
- **Disparities in quality -** Although quality problems affect all populations, they may be most marked for members of ethnic and racial minority populations.

The APD data also presents opportunities for safety monitoring, in particular, hospital safety when it comes to drug safety and use. The ability to use this data to monitor infrequent adverse effects will be a value addition.

The ability to identify a registry of patients based on specified criteria (such as eligibility, disease state, gaps in care, etc) is a challenge for providers. The capability to provide multiple views of patient information makes registries powerful population health management tools. Registries can be a valuable supplement to EHR systems, which were designed primarily to support providers at the point of care, not necessarily to generate patient lists as needed for the ongoing management of a population of patients[4]. Currently, providers can only obtain patient population information from their EHR system. DOH collects data through a variety of public health registries. However, their systems likely do not include patient encounters or lab history from before a patient joined their practice, which can provide an incomplete picture of services received and undermine quality measures. We are also planning to develop the capability to more readily share this information with providers. New reimbursement programs such as Pay-for-Performance, which tailor payments to quality measures, rely on comprehensive patient registries.

II. Example/Application of Use Case

The APD data can be used to compare cost and quality indicators associated with care coordination models and pilot programs.

- A study was done on Medicare expenditures for patients with chronic diseases.[5] This was done to determine if care coordination programs reduced hospitalizations and Medicare expenditures and improved quality of care for chronically ill Medicare beneficiaries. Patients were randomly assigned to 15 different care coordination programs. Hospitalizations, costs, and some quality-of-care outcomes were measured with Medicare claims data. Thirteen of the 15 programs showed no significant differences, but two had fewer hospitalizations. The study concluded, based on the two programs that delivered value, that programs with substantial in-person contact that

[3] Bernstein SJ, McGlynn EA, Siu AL, Roth CP, Sherwood MJ, Keesey JW, Kosecoff J, Hicks NR and Brook RH. The appropriateness of Hysterectomy: a comparison of care in seven health plans. *JAMA, 269(18):*2398-402, May 1993.

[4] Metzger J. "Using Computerized Registries in Chronic Disease Care". Prepared for *California HealthCare Foundation* by *First Consulting Group*, 2004.

[5] Effects of Care Coordination on Hospitalization, Quality Of Care, and Health Care Expenditures Among Medicare Beneficiaries: 15 Randomized Trials. D. Peikes - A. Chen - J. Schore - R. Brown - JAMA: The Journal of the American Medical Association – 2009

target moderate to severe patients can be cost-neutral and improve some aspects of care. The APD data can be used to expand studies such as these, to continue to evaluate care coordination models, and promote those that lead to the highest efficacy.

- Geisinger's "patient-centered medical home" initiative is designed to deliver value by improving care coordination and optimizing health status for each individual. To encourage physician engagement and to support the costs of transformation, GHP provides a series of practice-based payments. A primary target outcome for the medical home initiative is reduced hospital use. Early results from first-year experience at two pilot sites showed a 20 percent reduction in all-cause admissions and 7 percent total medical cost savings.[6]
- A pilot was developed in the Capital District using the Prometheus payment model, an episode-based payment model. Data from CDPHP, HealthNow and MVP (leveraging the NYQA database) was used. It was found that the Capital District could achieve a $44.5 million cost reduction from reducing Potentially Avoidable Complications (PACs) to a minimum national benchmark.[7]

NYS has been a national leader in collecting and analyzing quality data for regulatory and payment incentive purposes. The Quality Assurance reporting Requirements (QARR) program requires all managed care and Preferred Provider Organizations/Exclusive Provider Organizations (PPO/EPO) certified by the NYS DOH to report measures from the NCQA HEDIS as well as some State-specific measures. The data is submitted by various sources such as Article 32, 43, 44 and Article 47 organizations. The data is used to generate reports that provide easy-to-read information on health plan performance with respect to primary and preventive health care, access to health care, behavioral health and enrollee satisfaction that consumers can use to choose a health plan that meets their needs.

NYS has also been collecting and reporting Coronary Artery Bypass Surgery (CABG) surgery outcomes since 1989. The State Health Department report provides risk–adjusted mortality rates for each of the hospitals approved to provide coronary artery bypass surgery in New York State. The Department of Health collects and computerizes information on more than 40 patient risk factors that can affect surgery outcome and risk of death for individual patients and "risk adjusts" hospitals' rates. Hospitals use these statistics to measure their individual CABG surgery outcomes against the statewide average, and the results of other hospitals with cardiac surgery programs. The CABG data help hospitals evaluate their programs and make necessary improvements. The statistical measures have proved to be a useful quality improvement tool for hospitals and are major factors contributing to the reduction in CABG mortality since 1989.

The All Payer Database can significantly enhance existing efforts to measure and compare quality across settings in New York State, assisting in identifying high-performing providers,

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[6] Paulus R., Davis K. & Steele D. (2008). *Continuous Innovation In Health Care: Implications Of The Geisinger Experience.* Health Affairs. 27(5):1235-1245.

[7] New York Capital District Prometheus Payment Executive Summary. September 2008. Health Care Incentives Improvement Institute.

centers for excellence, and evidence-based practices associated with better outcomes. Several regional efforts have already demonstrated the value of multi-payer data sets for quality measurement and reporting such as the P2 Collaborative in the Finger Lakes and Taconic health Information Network and Community (THINC) in the Hudson Valley. Research investigations, such as the example below, could be expanded upon to inform opportunities for targeted quality improvement interventions:

- A study of the quality of health care delivered to adults, evaluated indicators of quality of care for 30 acute and chronic conditions as well as preventive care and found that participants received only 54.9 percent of recommended care. Little difference was found among the proportion of recommended acute care provided (53.5 percent), the proportion of recommended care provided for chronic conditions (56.1 percent), and the proportion of recommended preventive care provided (54.9 percent). Quality varied substantially according to the particular medical condition, ranging from 78.7 percent of recommended care for senile cataract to 10.5 percent of recommended care for alcohol dependence.[8]

The APD data can be used to create patient registries which combined with clinical data such as lab results can support chronic care management, provide a more complete picture of quality measures, and to generate reports on specific criteria as needed (i.e. Medicaid-eligible, etc). Below are some examples of how registries have been used to support both targeted outreach and population reporting:

- At Intermountain Health Care, regional medical directors periodically distribute printed feedback reports (i.e. trends in delivering recommended diabetes interventions for the patient's panel, etc) to the 500-physician medical group. Physicians and medical directors can also view population reports online over the intranet. Results for the physician are compared with those for the region and health system as a whole. Other viewable physician-level population reports include a provider detail report with a drill-down view to patient lists[2].
- 13 practices in Thedacare in northeastern Wisconsin distribute patient lists to care teams on a monthly basis. The registry tracks NCQA-recommended services and interventions for chronic disease and preventive care.[9]

[8] Elizabeth A. McGlynn, Ph.D., Steven M. Asch, M.D., M.P.H., John Adams, Ph.D., Joan Keesey, B.A., Jennifer Hicks, M.P.H., Ph.D., Alison DeCristofaro, M.P.H., and Eve A. Kerr, M.D., M.P.H. N Engl J Med 2003; 348:2635-2645 June 26, 2003

[9] Metzger J. "Using Computerized Registries in Chronic Disease Care". Prepared for *California HealthCare Foundation* by *First Consulting Group*, 2004.

III. Stakeholder Perspectives

Stakeholder	Examples of Data Usage

State/Public Health	• Evaluate care coordination models (against baseline, against control populations, against other pilot interventions
	• Identify preferred practices/components of successful care coordination and payment models
	• Promote successful models/practices through a variety of channels:
	  ○ Inform policies/guidance
	  ○ Fund additional pilot programs
	  ○ Create incentive programs to encourage adoption of evidence-based practices
	  ○ Share evidence based practices through established communication channels and forums (conferences, publications, governance bodies, etc.)
	  ○ Dedicate funding streams promoting advancement of successful models
	• Align incentives and payments to encourage value-driven health care delivery
	• Curb health care costs in the state by comparing the different payment models such as the health home against the PCMH and determining which one is more effective
	• Target interventions at poor-performing providers/facilities to improve the adoption of evidence-based practices
	• Identify effective information technology tools and systems that alert providers in real-time to the critical information they need to provide safer, high quality care.
	• Use the APD to supplement and enhance state disease registry data (Cancer, etc)
	• Monitor trends in health to identify patient needs and health problems that need prompt attention (HIV, Tuberculosis, Hepatitis C virus, etc)

Health Plans (including Medicaid)	• Evaluate existing pilot programs and implement or expand successful programs • Refine care coordination and payment programs/models to adopt evidence-based practices • Create tiered benefit designs that direct members to high-performing doctors and centers of excellence through variable out-of-pocket costs (lower co-pay if you go to a center of excellence for a procedure) • Develop individual physician or practice clinical performance profiles based on quality indicators and directly outreach to physicians to target areas of consistent under-use, over-use or misuse of services. • Create provider search tool for members to enable them to search for physicians and hospitals based on quality information • Implement alternative payment schedules for doctors and hospitals that consistently demonstrate high quality outcomes. • Design and implement new care processes that enable patients to act as co-managers of their health care, particularly for chronic illnesses.
Providers	• Provide better patient care through adoption of evidence-based care coordination models • Evaluate and participate in programs using payment models that allow providers to deliver quality care that is also cost effective to them.

	• Identify Medicaid patients to demonstrate qualification for meaningful use incentive dollars. • Measure and compare their practice/facility's performance to identify areas of potential quality improvement • Identify patients that would be eligible for disease management or health coaching programs
Research	• Evaluate costs, quality, efficiency, patient satisfaction indicators across different models, settings, geographic areas and patient populations • Generate reports to inform clinical policies, training and legislation • Identify additional research questions to inform future pilots • Explore how different payment methods, financial incentives, and organizational factors affect the behavior of health care organizations, providers, purchasers, and patients. • Identify health disparities and quality problems that disproportionately affect members of certain populations
Consumers	• Empower consumers to make informed decisions on health plans and providers • Research published information and use consumer tools to inform health plan, physician and hospital selection. • Learn about evidence-based practices that improve quality and reduce costs, and develop a better understanding of care received from physicians or facilities. • Benefit from more proactive care coordination from providers and health plans • Benefit from personalized communication and educational materials

Comparative Effectiveness

I. Use Case Description

Comparative effectiveness is a widely used research methodology, used to inform healthcare decisions by providing evidence on the effectiveness, benefits, and harms of various treatment options. It utilizes a variety of information to contrast existing health care interventions. Currently, evidence to compare these options is generated from research studies that evaluate different drugs, medical devices, tests, surgeries, etc. This data is used to determine the best methods to prevent, diagnose, treat, and monitor a specific clinical condition, or improve the overall delivery of care. It may also address public health or systems interventions that affect health outcomes. Comparative effectiveness research is designed to inform patient and clinician decisions relevant to the unique circumstances of individual patients.

An All Payer Database can increase access to rich data sources to conduct comparative effectiveness research. This can be used to assist consumers, providers, health insurance companies, and policy makers to make informed decisions that will improve health care at both the individual and population levels. NYS has now created a Center for Comparative Effectiveness Research which could serve as the focal point for developing policies and coordinating efforts to use the APD for this purpose.

II. Example/Application of Use Case

The APD data can be used to compare a variety of treatment options. This can be used to determine which treatment is linked to the best outcomes, for specific cohorts, and under what circumstances.

For example, in 2009, the American College of Cardiology (ACC), the American Heart Association (AHA), and four other professional organizations released an updated set of "appropriateness criteria", which define whether angioplasty and coronary artery bypass graft surgery are "appropriate", "uncertain" or "inappropriate" for patients with coronary heart disease depending on the severity of their disease, the results of diagnostic tests, and the amount of medical therapy they are taking. Using data from the NYS registry for coronary angioplasty and coronary artery bypass graft (CABG) surgery, researchers compared patients who underwent these procedures and determined those that met the ACC/AHA Appropriateness Criteria. In a study conducted by the Center for Comparative Effectiveness Research, it was found that about 28% of patients undergoing angioplasty during the 7/1/2009 and 12/31/2010 period could not be rated for appropriateness, 36% were judged to be appropriate, 50% uncertain and 14% inappropriate using the ACC/AHA criteria.

Another example is a study that was done comparing surgical treatment options for patients with morbid obesity.[10] It was found that gastric bypass surgery was more effective than gastroplasty, but the mortality rate was higher. Data from the APD can be used to conduct studies like these to inform healthcare treatment choices. In addition, APD data could assist in comparing the total costs per surgery (post-op follow-up, complications, etc.) to determine the most effective, cost efficient treatment modality.

III. Stakeholder Perspectives

Stakeholder	Examples of Data Usage
State/Public Health	• Make informed policy decisions to improve health care at both the individual and population levels • Understand what therapies are resulting in the best health in the real world population • Design quality interventions and messaging to promote high quality, low cost treatment • Identify gaps in health care to set priorities
Health Plans (including Medicaid)	• Utilize research data to evaluate patient treatment options • Promote or incentivize higher quality and lower cost treatments or refine reimbursement models • Obtain a more complete picture of costs, and promote utilization of lower overall cost treatment options. An inexpensive medication with more hospitalizations and ER visits offsets the inexpensive drug, as it leads to higher overall healthcare costs. ○ Compare osteoporosis outcomes by medication selection- Does drug A or B lead to less fracture rates? If drug A, can we encourage members to use medication with lower fractures, reducing overall payment, and increasing quality.
Providers	• Assist clinicians in providing the best possible care for individual patients, informed by evidence-based data • Develop best overall strategy to manage a disease or condition • Tailor treatment to specific patient by understanding which factors contribute to improved treatment outcomes

Research	• Conduct comparative effectiveness studies to evaluate cost, quality, and patient satisfaction over multiple treatment options and episodes of care
	  ○ Analyze outcomes for specific intervention (i.e. average payment per episode for patients with spine joint degeneration, with surgery versus without surgery)
	  ○ Compare drug outcomes, understand if cost is tied to quality
	• Analyze treatment options across a broader cross-section of patients- spread across

[10] Comparative effectiveness of gastric bypass and gastroplasty: a clinical study. (PMID:7073492) Linner JH. Archives of Surgery (Chicago, Ill. : 1960) [1982, 117(5):695-700]

	age, gender, ethnicity, exploring what subgroups of patients respond best to each treatment • Study patients with co-morbidities (most clinical trials exclude patients with other diseases and conditions) • Generate clinical guidance, guidelines, or reports to inform policies and legislation • Inform consumers about potential treatment options • Identify gaps in existing treatment methodologies and the needs of clinical practice • Promote and generate new scientific evidence and analytic tools

Consumers	• Make informed healthcare decisions through the evaluation of clear and dependable information based on clinical efficacy measures and real-world outcomes data
	• In partnership with their physician, a patient can be empowered to make the best decision for their health:
	  ○ Patient with high blood pressure can choose the best medication for their circumstances
	  ○ Patient with heart disease can investigate if heart surgery or medicine is the best option for them.
	• Better overall health and medication compliance due to evidence-based decision making

Prior Approval Law - Rate Review and Medical Loss Ratio Requirement

I. Use Case Description

New York State enacted a new law known as the "Prior Approval" law on June 8, 2010. This legislation gave the New York State Insurance Department the authority to review and approve health insurance premium rate increases before any changes take effect. Previously, New York had regulated health insurance premiums under a "file and use" law, which allowed insurers to increase premium rates with little, if any, control or oversight from the Insurance Department. This legislation will require that Health insurers and HMOs spend more of every premium dollar they collect on medical claim costs, ensuring that a greater percentage of premiums are returned to consumers in the form of benefits. In the first year of prior approval, the Insurance Department reviewed over 85 rate increase requests.

In addition to prior approval, the Federal Patient Protection and Affordable Care Act (the ACA) requires insurers to disclose to consumers the components of premium rate increases (inpatient, outpatient, drug, etc.). The Insurance Department is also eligible to receive almost $4.5 million in federal funding to enhance its rate review process under the ACA. Also, the Health Benefit Exchanges authorized under the ACA will establish a marketplace where insures will compete on the value and cost of their products, not their ability to choose risk.

Key provisions of the Prior Approval law:

- **Prior approval is used for community rated policies.** "Community rating" means that the premiums for everyone covered under the same policy must be the same regardless of age, sex, health status or occupation. Specifically, prior approval must be obtained by insurers and HMOs adjusting (either increasing or decreasing) premium rates of individual, small group, large group community rated, Healthy NY and Medicare Supplemental (Medigap) policies. Prior approval does not apply to experience rated large groups or self-insured health plans.

- **30-60 day Department's Review period** – The Insurance Department must approve, reject or modify the rate application between 30 days and 60 days from the date the insurer submits the rate application, but may extend that time if it needs more information. The Department's determination must be supported by sound actuarial assumptions and methods. Many factors are considered before approving, disapproving, or modifying a rate adjustment request. Among these factors are the insurer's recent and future costs of medical care and prescription drugs, the company's history of rate changes, and its financial strength, premiums, administrative costs and other sources of revenue.

- **Medical Loss Ratio (MLR) Requirement** – "Medical loss ratio" or MLR helps gauge the reasonableness of premiums. It is basically the percentage of premiums actually spent on medical services. For example, if a policy had an MLR of 88%, this would mean that 88 cents of every premium dollar collected for that particular policy went toward paying claims. The other 12 cents went towards the insurer's administrative expenses and profits. Under the NYS Prior Approval law, the expected MLR for a particular policy must be at least 82%. If, at the end of the year, the expected MLR is not met (i.e. it is lower than 82%), the Department has the authority to order corrective action, including refunds to policyholders.

II. Examples/Applications of Use Case

In some instances, the Insurance Department is limited in its ability to determine whether the data submitted by the health plan is complete and fully representative. There is also a lack of standardization in of the data that is submitted by the health plans to support the rate increase, which can slow down the review process. Additionally, health plans' are often limited in their access to claims history information for new populations or their ability to project appropriate utilization of services for new product designs. Access to an All Payer Database could enhance and expedite the ability of health plans and regulators to determine appropriateness of premium rates. For instance, an All Payer Database would help identify underlying cost drivers for premiums, as well as help assess regional variations in premium rates. It would supplement the Insurance Department's efforts in reviewing and approving premium rate increases by providing valuable comparative information between plans. Since health plans have different claims systems, the Insurance Department would still need to work with each plan to understand its methodology and results. However, the APD data would likely be a complementary source of information, not a replacement. The Health Insurance Exchange will include information on quality and cost, and the APD could serve as a source of data, but not necessarily the complete source of data.

Furthermore, APD data could enable more transparency with regards to what goes into a premium rate increase, allowing consumers to better understand their health insurance and its costs. The Insurance Department intends to significantly increase its IT capacity under ACA grants, including its ability to leverage data available from the All Payer Database.[11]

III. Stakeholder Perspectives

Stakeholder	Examples of Data Usage
State/Public Health	• Enhance and expedite review of premium rate applications from Health Plans and HMOs with additional information available in the APD. • Expedite ability to make determinations on rate applications due to availability of

[11] New York State Insurance Department (2011). http://www.ins.state.ny.us/health/prior_app/prior_app_approved.htm

	data on underlying cost drivers. • Identify regional differences in costs related to providers' claims, to more accurately reflect regional differences in premium rates. • Publish information about what goes into premium increases to assist consumers in better understanding their health insurance and its costs.
Health Plans (including Medicaid)	• Ability to access claims history information for new populations (i.e. to inform whether to expand into different geographic areas) • Enhance the ability of Health Plans to accurately project premium rates and MLR using more complete information that may not have been previously available. • Publish information about what goes into premium increases to assist consumers in better understanding their health insurance, its costs, and how they can make more informed health care decisions.
Providers	• N/A
Research	• Identify types of provider services that drive costs underlying premiums increases. • Evaluate how Prior Approval Law can help control underlying cost drivers and the rise in insurance premiums in New York State. • Evaluate which Health Plans and product designs deliver the best value in terms of coverage for the premium, particularly for products offered through the Health Benefit Exchange. • Evaluate whether insurers' product or market withdrawals will have unintended consequences such as adversely affecting consumers' access to health care, reduced competition, etc. • Generate reports to inform additional regulatory policies
Consumers	• Access published information on what drives premium increases so they can better understand their health insurance, its costs, and how they can make more informed health care decisions.

Needs Assessment

I. Use Case Description

Health care needs assessment includes planning and provision for disease prevention, diagnosis, treatment and rehabilitation services. It provides a method of monitoring and promoting equity in the provision and use of health services and addressing inequalities in health.[12]

Needs assessment is a systematic exploration of the way things are and the way they should be. An All Payer Database can help identify disparities between the current state and the expected or desired state by indicating where (geographically or otherwise) health outcomes may be poorer as compared to others. These regions/conditions may then be targeted for developing a more robust needs assessment process using the APD data as a starting point.

Some of the objectives of conducting a needs assessment are:

1. To describe the patterns of disease in the local population and the differences among regions, counties and the state.
2. Learning about the needs and priorities of patients and the local population
3. Highlighting the areas of unmet need and providing a clear set of objectives to work towards to meet those needs.
4. To develop policies, interagency collaboration or research and development priorities.

The APD data can help fulfill at least some of the objectives outlined above and can also provide comparative data on different geographic areas as well as disease/conditions that can help identify populations where health services may need to be added or adjusted. The Office of Health Systems Management and the Office of Long Term Care within DOH conduct specific regulatory and health planning activities that would be enhanced by the APD. The Office of Public Health could use these data to target public health outreach and community based interventions.

The APD data will also prove to be a valuable tool for the Center for Workforce Studies in estimating the physician workforce by looking at the activity of providers and estimate if they are full time or part time, limited practice etc. to see need and location. They could link the APD data with the surveys and analysis they perform since currently, there is very little data available for the purpose. Workforce data could ultimately be cross-walked with clinical data to provide estimates about workforce staffing needs.

[12] Wright J., Williams R. & Wilkinson J R. (1998). *Development and importance of health needs assessment.* British Medical Journal. 316:1310-1313.

II. Examples/Applications of Use Case

The All Payer Database could allow for research on patterns of disease burden and underuse of preventive care and evidence-based services, such as the examples below, to be expanded upon to inform targeted outreach and program development.

- Diabetes was the 4th leading cause of death in New York City (NYC) in 2003, directly causing more than 1,800 deaths and contributing to thousands more. In the past decade, the prevalence of diagnosed diabetes has more than doubled among adults in NYC. Diabetes has been shown to disproportionately affect black and Latino New Yorkers, as well as those living in low-income households and neighborhoods. These disparities are evident in diabetes prevalence, hospitalizations and mortality, and track closely with patterns of overweight and obesity, and with the related behaviors of physical inactivity and unhealthy diet.[13]
- One of the approaches to conducting a needs assessment is the "comparative approach" which contrasts the services received by the population in one area with those received in other areas. Such comparisons have been proven to be powerful tools for investigating health services. For example, the need to raise renal dialysis and transplantation levels from 20 per million in the 1960s to 80 per million was indicated by comparison with European countries and subsequently confirmed epidemiologically.[14]

Example Specific to Primary Care/Prevention

- A study exploring under-immunization of young children found that under-immunization was a powerful, independent marker for a lack of preventive and acute primary care. Compared with fully immunized children, the under-immunized group has 47% fewer preventive health visits, 43% fewer illness visits and 50% more missed appointments.[15]

III. Stakeholder Perspectives

Stakeholder	Examples of Data Usage
State/Public Health	• Inform the Certificate of Need (CON) program about health status of the population that can in turn aid in determining the need for adjusting the number and type of health care facilities in a geographic region such as adding a new hospital or hospice • Compare health care services utilization in different regions of the state that can indicate over or under provision of those services

[13] Kim M, Berger D, Matte T. *Diabetes in New York City: Public Health Burden and Disparities.* New York: New York City Department of Health and Mental Hygiene, 2006.
[14] Stevens A. & Gillam S. (1998). *Needs Assessment: from theory to practice.* British Medical Journal. 316(7142):1448-1457.
[15] Rodewald LE, Szilagyi PG, Shiuh T; Humiston SG; LeBaron, Hall CB. **Is Underimmunization a Marker for Insufficient Utilization of Preventive and Primary Care?** *Arch Pediatr Adolesc Med,* 149(4):393-397, 1995.

	• Use it as a tool to monitor and promote equity in the provision and use of health services and develop programs and policies to meet those needs • Work towards addressing disparities in number, type and usage of services with the goal of improving the overall health of the population • Control health care costs in the state by avoiding excess availability of resources such as empty hospital beds • Inform public health policy aimed at improving access and effectiveness of health services
Health Plans (including Medicaid)	• Be informed about the health needs of the population that they serve • Inform the development of targeted pilot programs • Implement or expand programs or services based on the health outcomes of their population • Add/eliminate contracts with providers in a geographic location based on the health needs of that area
Providers	• Get information on disease patterns in the local population that they serve • Focus the delivery of care on areas of unmet need such as screening tests for prevention • Gain a better understanding of the health status of the local population so that more effective care can be delivered.
Research	• Perform comparative evaluations of health outcomes in different areas to determine the health care needs of those populations • Generate reports to inform policies and CON assessments • Determine variations in costs of health care services across regions and influence policy to promote equity
Consumers	• Fulfill the needs of the informed consumer and the shift to more appropriate care • Have more and better access to effective health care.

Strengthening Public Health Practice and Improving Population Health

I. Use Case Description

Local and New York State Departments of Health perform the following essential services to promote and protect the health of the population.

- Monitoring health status to identify community health problems including health disparities.
- Detecting and investigating health problems and health hazards in the community.
- Informing, educating, and empowering people and organizations to adopt healthy behaviors to enhance health status.
- Partnering with communities and organizations to identify and solve health problems and to respond to public health emergencies.
- Developing and implementing public health interventions and best practices that support individual and community health efforts and increase healthy outcomes.
- Enforcing laws and regulations that protect health and ensure safety.
- Linking people to needed personal health services and ensuring the provision of population-based health services.
- Evaluating effectiveness, accessibility, and quality of public health services, strategies, and programs.
- Researching for insights and innovative solutions to public health problems.

II. Examples/Applications of Use Case

Combined with existing public health data sources, an all-payer data base would offer the opportunity for greater public health and partner insight into the health status of the population and health-related services provided to them, determine health outcomes for patients seeking medical care in both the inpatient and outpatient setting, and provide data for evaluation and research on local, regional, and statewide levels. Some examples include:

- Provide more complete disease prevalence estimates;
- Improve public health surveillance and tracking for all conditions of public health significance;
- Provide the opportunity to conduct more comprehensive or new epidemiologic studies, such as for environmental and occupational exposures;
- More accurately target education and outreach efforts associated with illnesses, injuries, and environmental/occupational exposures;
- Assess adequacy and quality of healthcare, especially for targeted populations, to improve quality of life and reduce health disparities;
- Assess the effect, if any, of insurance coverage and type on health outcomes; and

- Assess the burden and cost of illness and injuries of public health significance and the actual or potential costs averted with public health interventions.

III. Stakeholder Perspectives

Stakeholder	Examples of data usage

State/Public Health	• Evaluate effectiveness of health prevention and promotion initiatives.
	• Identify effective interventions.
	• Promote successful models and practices through:
	  ○ Informed policies and guidance;
	  ○ Targeted outreach and education;
	  ○ Comprehensive surveillance and epidemiologic analyses; and
	  ○ Identification of health risks.
	• Determine of healthcare provider utilization and outcomes by zip to evaluate Maternal and Child Health Programs such as "Home Visiting", "Community Health Workers" and "Adolescent Sexual Health"
	• Determine care utilization patterns and public and private payer costs. Some examples are listed below:
	  ○ Tuberculosis treatment by county
	  ○ Immunizations and administration fees
	  ○ Rabies exposure prophylaxis
	  ○ Services provided to children and youth in school-based health clinics
	  ○ Utilization of sexual/reproductive health services by adolescents (contraception, sexually transmitted infection testing, etc.) by provider to assess differences, which may be attributed to confidentiality or other issues, etc., in utilization of services offered by publicly funded clinics compared with private pay physicians.
	• Determine number of patients for whom diagnostic or screening tests are performed for conditions/exposures of public health importance. This can be used to evaluate public health legislation and monitor trends over time

Health Plans (including Medicaid)	• Ensure coordinated and ongoing care to targeted populations to reduce long-term health costs. • Refine care coordination models to adopt evidence-based practices.
Providers	• Implement proven effective prevention and treatment for targeted diseases and conditions. • Implement evidence-based interventions to reduce illness, death, and disability. • Assess and assure quality of care for people with chronic disease, such as diabetes, and enable more focused outreach and treatment.
Research	• Study the cause, transmission, clinical spectrum and outcome of disease to identify new or improved ways to reduce the occurrence and improve outcome. Evaluate effectiveness of public health interventions to prevent disease and disability, promote health and minimize disease transmission.
Consumers	• Understand health risks, prevention, and outcomes of disease and request from

	their healthcare provider evidence-based prevention, screening and treatment recommendations.

Data Elements to support APD

The APD data can be used to compare various indicators associated with specific providers, practices, facilities, geographic regions and demographic groups. Potential evaluation metrics include both process and outcome. Individually and collectively, these can assist with identifying health disparities and targeting public health, healthcare provider, healthcare delivery system, and healthcare payer efforts. Process measures include those that assess the implementation of or adherence to public health prevention and control recommendations. Outcome measures are those that assess the burden and outcome of illness and injury.

Claims Data Elements

Below are examples of data elements that can be made readily available for evaluation and comparison once the APD is established, initially from multi-payer eligibility, medical, dental and pharmacy claims data:

Patient Information

- Encrypted social security number or patient identification information
- Age, gender, race, geographic region such as county and state

Treatment Information

- Service provider
- Prescribing physician
- Facility type
- Service dates
- Diagnosis, procedure, NDC codes

Additional Claims Information

- Type of product (HMO, POS. etc.)
- Type of contract (single, family, etc.)
- Plan Payments
- Member patient responsibility – Co-pay, co-insurance
- Type and date of bill paid
- Revenue codes

Analytic Approaches

The proposed data elements would be able to be:

- Stratified based on single and combined demographic parameters (i.e. age, zip code, gender);
- Compared and monitor across provider types
- Descriptive/compared by insurance type and status (i.e. Medicaid, Medicare, commercial, specific carrier); and
- Presented as point in time and/or longitudinal view of data

From the claims information and analytic approaches listed above, comprehensive evaluation measures could be calculated for the following:

Cost Information

- Per member per month (PMPM) costs
- Average payment per episode - Based on ETGs for certain disease conditions (i.e. diabetes)
- Comparison of the average cost of a specific procedure
- Comparison of individual total payments for selected procedures by provider and payer
- Hospital costs/prices, total inpatient hospitalizations
- Costs of a particular procedure in one region over another (i.e. cardiac bypass surgery)
- Office visits by diagnosis

Comparative Effectiveness Evaluation

- Medication selection
    - Comparing effectiveness and side effects of various drug options
- Medical interventions/therapies
    - Surgical versus non-surgical interventions
    - Analysis of different medical interventions/therapies

Utilization Metrics

- Rate of referral, access, and use of preventive care services (i.e. mammogram)
- Access and use of primary care for children
- Access and use of care: public payer versus commercial population
- Access and use of specialists
- Use of diagnostic or screening tests (i.e. HIV Testing, tuberculin skin testing)
- Emergency Department usage
- Hospitalizations and readmissions
- Rate of claims for specific cohorts- cardiovascular disease, mental health, etc.

Quality Indicators

- Volume of procedures performed (CABG, etc.)
- Medication compliance
- Use of quality and safety guidelines
- Preventative services received/compliance with preventative care recommendations
    - Mammogram, colonoscopy, pap smear
- Prescription refill compliance
- Preventable hospitalizations

Incidence of Disease and Conditions and Health Outcomes

- Number and type of diseases and conditions and associated outcomes across patient demographics, provider types, and insurance type and coverage
- Length of stay

Future Data Element Considerations

The following information is typically excluded from claims information[16]

- Services provided to the uninsured (can be supplemented with SPARCS hospital discharge data)
- Denied claims
- Workers' compensation claims
- Premium information
- Capitation fees
- Administrative fees
- Back end settlement amount
- Referrals
- Test results from lab work, imaging, etc.
- Provider affiliation with group practice
- Provider networks

Existing DOH Databases

Many existing DOH databases can serve to supplement claims data. Aggregating this data with APD can add tremendous value to evaluation and utilization. For example, the Electronic Clinical Lab Reporting System (ECLRS) has lab results for reportable diseases such as communicable diseases, cancer, HIV/AIDS, and lead.

Clinical Data Elements

In addition, as clinical information becomes more standardized and widely available, we can consider integrating additional clinical data. This data is currently shared in Regional Health Information Organizations (RHIOs), and could be accessed through New York's Statewide Health Information Network. Below are some clinical data elements we could envision aggregating/integrating in the future:

Risk Factors

- BMI
- Inactivity
- Disease co-morbidity
- Inactivity
- Smoking

Quality Indicators

- Percentage of patients who meet recommended guidelines for health measures
    - I.e. BMI, blood pressure, cholesterol
- Percentage of patients who meet recommended guidelines for chronic disease
    - I.e. Diabetes care such as HbA1C screening, eye exam, foot exam etc.

[16] Miller, Patrick. "Overview of All-Payer Claims Databases." *University of New Hampshire.* PowerPoint. January 2009. < http://raphic.org/pdf/2010-01-09APCDMaster.pdf>

Health Outcomes

- Biometrics: BMI, blood pressure, cholesterol, HbA1C
- Mortality indicators for inpatient procedures
- Mortality indicators for inpatient conditions
- Adverse events
- Adverse birth outcomes, pregnancy outcomes
- Rate of healing
- Relapse rates
- Adverse drug affects
- Result of intervention or treatment (i.e. fracture rates for patients with osteoporosis)

Conclusion

The above use cases will evolve into a more refined product driven by stakeholder input. In addition, NYSDOH will request input from the Steering Committee to suggest use cases that are not included here. Furthermore, this group will be asked to help prioritize the use cases, to begin to outline a roadmap for the APD development.

The Evaluation Measures in this document are representative of the various pieces of data that the APD can make available to its users for various purposes. However, it is not an all-inclusive list of the data elements that the APD may be able to provide. This is a collaborative effort, which will require guidance and input from the stakeholder community. This will be done to ensure the APD is utilized to provide the utmost value to its users.

All stakeholders would benefit from access to unified, standardized a database comprised of claims and clinical information. The design of the system in terms of governance, technical model, and funding needs to be founded on a more detailed understanding of how the APD will be utilized. While the physical data set would be of great utility to the state, the employment of its functionality by other stakeholders will be vital to its success. Payers, providers, and patients would all benefit if we adopted a more coordinated approach to quality improvement interventions and care management, which the APD could support.