

PURPOSE

The purpose of this paper is to provide information based upon what is known from existing all-payer claims database (APCD) efforts and augment it with what is known about the changing healthcare and policy landscapes to draw a proposed road map for "APCD 2.0". In other words, what do existing states and those embarking upon creation of APCDs need to be considering as their efforts move forward?

BACKGROUND

All-payer claims databases (APCDs) have been instrumental in assisting states in their transparency efforts regarding pricing, quality, and utilization¹. Several have been up and running for many years, and in the past two years more than half a dozen additional APCDs have been authorized by state legislatures. The databases currently have a mixture of commercial, Medicaid, Medicare, pharmacy, and dental claims combined with eligibility and provider files. Figure 1 shows state

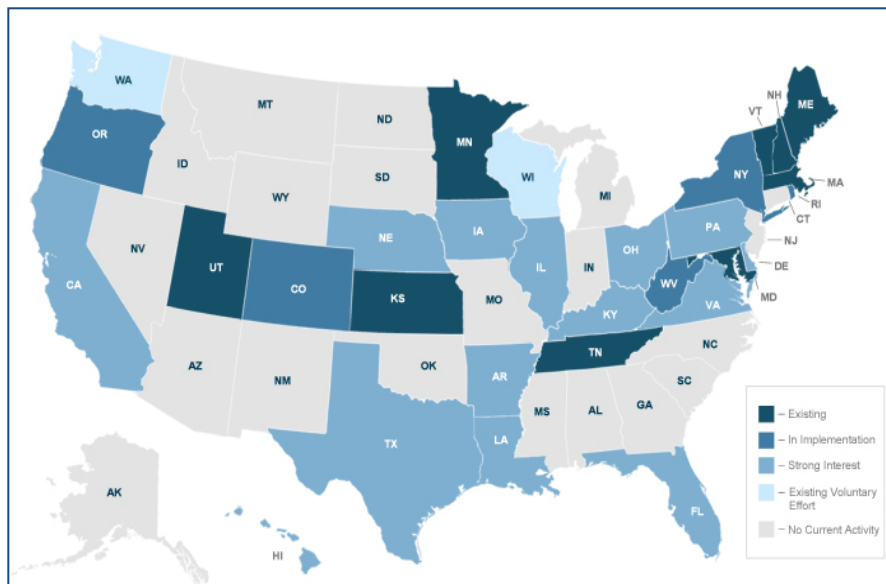


Figure 1: Current APCD Landscape July 11, 2011 (APCD Council)

progress by stage of implementation. All state APCDs shown on the map (Existing or In Implementation status) have been mandated via legislation with the exception of two voluntary efforts in Washington and Wisconsin.

Since APCDs were started, in addition to the successes achieved, some shortcomings and limitations have been catalogued. This paper highlights key areas, whereby with some straightforward changes to existing APCDs, and proposals for those being developed, existing limitations could be reduced resulting in significant benefits for states.

¹ Love D, Custer W, Miller P, September 2010, Issue Brief, All-Payer Claims Databases: State Initiatives to Improve Health Care Transparency; Prysunka A, 2011, Issue Brief: All-Payer Claims Database (APCD) Fact Sheet; Miller P, Love D, Sullivan E, Porter J, Costello A, May 2010, Issue Brief: All-Payer Claims Databases An Overview for Policy Makers

Eight Areas of APCD 2.0 Functionality

1. *Completeness of data sets*
2. *Data collection standards*
3. *Data release standards*
4. *Collection of direct patient identifiers for linkage purposes*
5. *Collection of non-claim-based fiscal transactions*
6. *Collection of premium information*
7. *Master provider index*
8. *Collection of benefits information*



CHANGING LANDSCAPE SURROUNDING APCD DEPLOYMENT

Since the initial development of APCDs the healthcare landscape has changed politically and within individual healthcare markets. These changes can be summarized as a set of future needs to be met:

- Increased transparency of local, regional, state, and federal healthcare markets (fiscal, quality, utilization);
- The Health Information Technology for Economic and Clinical Health Act's (HITECH) roll out of electronic health records (EHRs) and health information exchanges (HIEs) which contain robust clinical data can be married to the administrative data in APCDs;
- The Patient Protection and Affordable Care Act (PPACA) has provisions for comparative effectiveness research (CER) and other population health efforts;
- Payment reform efforts, including primary care patient centered medical homes (PCPCMH) and accountable care organizations (ACOs), have been introduced both in commercial pilots and now for Medicaid and Medicare as a way to transform payment mechanisms, patient satisfaction, clinical quality, and ultimately accountability;
- Multiple information systems are emerging simultaneously, such as health benefit exchanges (HBEs)² and HIEs. From the perspectives of both removing "silo systems" for operational purposes and health services research, the eventual linkage of these platforms with APCDs, patient registries, and population health datasets is viewed as inevitable.

SUMMARY OF APCD 2.0 FUNCTIONALITY

Much has been learned during the development of prior APCD efforts regarding uses, constituents, technical platforms, privacy and security, governance, and analytics and application development. Combining that with the changing landscape, eight areas of "APCD 2.0 functionality" have been developed and are discussed below in the context of both existing and new APCD state efforts.

#1 – Completeness of Data Sets

There are several ways to look at the issue of completeness: type of data sets, thresholds for inclusion, type of insurer, etc. In an ideal world, a state APCD would include all insurers (both public and private), cover all residents, and include all product lines (medical, dental, pharmacy, etc.). The current landscape is such that states have not been able to do this in all cases, with the majority of the "missing" data being various federal data sets that can comprise a large proportion of many states' populations.

As states embark upon the creation of APCDs, they typically start with importing commercial claims from fully insured and self-funded commercial carriers and third party administrators (TPAs) including medical, pharmacy, and dental data. They then generally add their Medicaid claims across fee-for-service, managed care, and CHIP populations. More challenging is the addition of Medicare Part A&B (C&D is often picked up in the commercial carrier data) data, Department of Defense (DoD) TRICARE, Civilian Health and Medical Program of the Department of Veterans Affairs (CHAMPVA), Federal Employees Health Benefits (FEHB) Program, and the Indian Health Service (IHS). Three states (MD, ME, and MN) have integrated Medicare Part A&B data, while it is believed that via commercial carriers, it is possible that some TRICARE data may be being received.

² In order to decrease confusion of the term "HIE", this paper delineates health information exchanges from health insurance exchanges by calling the latter health benefit exchanges (HBE).



Several members of Congress are currently working on legislation to make some of these data sets more readily available to states. Additionally, states today can purchase Medicare A&B data, but there is a charge for it, as well as limitations on re-release of certain data elements. The expectation of states is that they will be able to work cooperatively with the federal government in the coming years to increase the availability of federal datasets to states.

#2 – Data Collection Standards

The importance of data collection standards has been articulated in other papers and presentations, but the primary reasons for having data collection standards include:

- Reducing carrier burden on data extraction and delivery, especially for those carriers who operate in multiple APCD collection states;
- Providing state legislators with standards to refer to while developing legislation;
- Providing a foundation for cross-state analytics and reporting (examples include recent reports comparing Vermont, New Hampshire, and Maine utilization)³;
- Providing a forum, through data management standards organizations (DSMOs) such as ANSI X12 and NCPDP, for new fields to be vetted publicly with all stakeholders able to participate;
- Providing publicly available timelines to all involved (states, carriers, data management vendors, and data analytic vendors) for new changes in standards similar to what is currently occurring with ICD 10 for October 2013.

Progress has been made in the past eighteen months including proposed standards for pharmacy claims, medical claims, and eligibility files (www.apcdouncil.org) and said proposed standards have been submitted to DSMOs. Additionally, a technical advisory panel has endorsed the standards process and is comprised of: the Agency for Healthcare Research and Quality (AHRQ), All-Payer Claims Database Council (APCD Council), America's Health Insurance Plans (AHIP), Individual Payers (e.g., Aetna, Cigna, Harvard Pilgrim Healthcare, Humana, United Health Care), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (CDC NCHS), Centers for Medicare and Medicaid Services (CMS), National Association of Health Data Organizations (NAHDO), National Association of Insurance Commissioners (NAIC), National Conference of State Legislatures (NCSL), National Governors Association (NGA), Office of the Assistant for Planning and Evaluation (ASPE), and various state health plan Associations (various).

It is expected that the NCPDP standards for pharmacy files will be completed in 2011 and the medical claims and eligibility file standards will be completed in early 2012. Finally, two meetings with the National Committee on Vital and Health Statistics (NCVHS) were held in May and June 2011 to brief this organization on progress and engage them in the current process of standards development.

#3 – Data Release Standards

Data release is complex, critical, and very often political. It is a critical function that governs who may have access to APCD data and under what circumstances. In terms of development of national data release standards, it is currently more of a concept than a reality. Each state has varying political

³ Onpoint Health Data, *Tri-State Variation in Health Services Utilization & Expenditures in Northern New England* <http://www.bishca.state.vt.us/sites/default/files/Act49-Tri-State-Commercial-Variation.pdf>, June 2010



influences and views that govern how release occurs. Some states have limited release to internal state agencies while others provide it to universities, think tanks, employer coalitions, and others. For instance, Minnesota law prohibits data release external of state government whereas in Maine, data is available for purchase. Harmonization of data release standards, perhaps regionally at first, will allow for cross-state analysis of information to occur, assuming that data collection standards are harmonized as well. Figure 2 is an example from a report released by the State of Vermont in 2010 comparing utilization metrics in the commercial population for Vermont, New Hampshire, and Maine. A natural extension of geography would be Rhode Island and Massachusetts given the regional proximity and development of databases in those states.

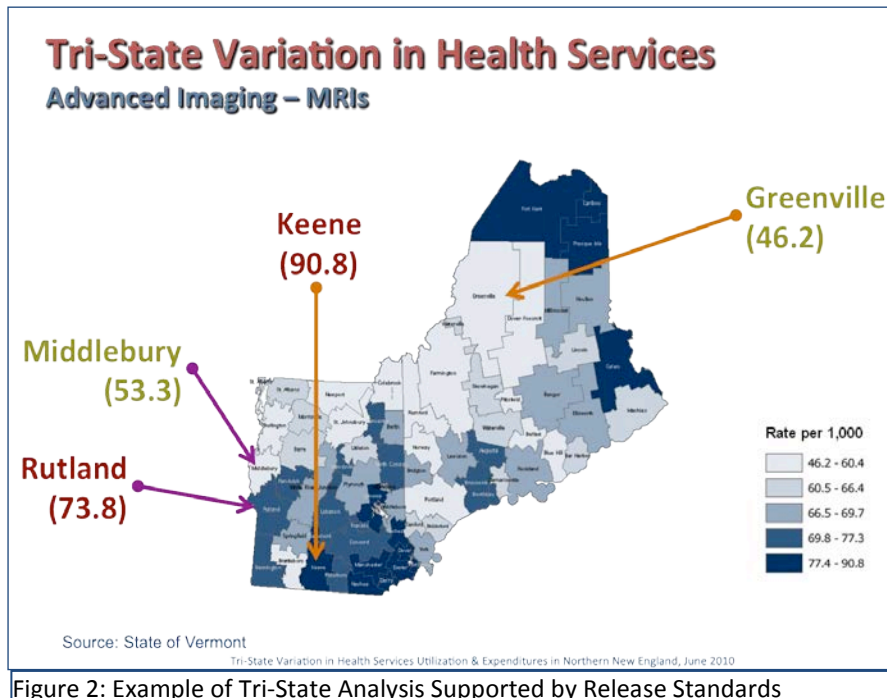


Figure 2: Example of Tri-State Analysis Supported by Release Standards

With limited breadth of release rules, states are more reliant on funding internal resources (or contracts) to conduct data analysis. With more wide spread release, universities, think tanks, business coalitions, providers, and carriers have access to the data under release policies that typically include a review board and data use agreement. The data release strategy for a state can impact the total cost of the APCD to the state.

#4 – Collection of Direct Patient Identifiers for Linkage Purposes

This is a topic of increasingly critical importance given the rise of health information exchange (HIE), electronic health records (EHR), clinical registries, population health datasets, health benefit exchanges (HBEs), payment reform efforts such as accountable care organizations (ACOs), and accuracy of linking commercial payer carve outs such as pharmacy benefit manager (PBM) data with medical claims data. Currently, the majority of state APCD efforts do not collect direct patient identifiers for patient privacy and security protection purposes, but more are doing so and the anticipated trend is for all states to do this eventually (see Table 1 for current status by state). The primary reasons behind this are for comparative effectiveness research, analytics to support health care reform policy evaluation, to



provide insurance departments' HBEs with historical information, and to potentially augment incomplete HIEs with service information from APCDs.

Table 1: Status by State of Collecting Direct Patient Identifiers⁴

| State | Status |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Colorado | Based upon an initial 2011 report to Governor and General Assembly, all data transmitted from the carriers, including patient identifiers will be encrypted during transmission and while stored within the APCD. Data will be decrypted briefly as received from the carriers so that a unique identifier can be attached to each patient, and then re-encrypted. All data will be released without direct patient identifiers. |
| Kansas | Not currently allowed for commercial data, but due to the HBE, Kansas expects that within six months there will be an effort to change this. Kansas currently collects identifiable information for state employees and Medicaid. |
| Maine | Allowed by law, but prohibited by law from being disclosed; not currently collected. A 2011 legislative proposal intended to allow for release did not pass, but will be evaluated under a legislative study. |
| Maryland | Allowed by law. Currently collecting unencrypted patient identifiers. |
| Massachusetts | Allowed by law. Currently collecting unencrypted patient identifiers. |
| Minnesota | Not currently allowed. |
| New Hampshire | Not currently allowed. |
| New York | Allowed by law. System not implemented yet. |
| Oregon | Currently collecting a subset of unencrypted patient identifiers. |
| Rhode Island | Not currently allowed. |
| Tennessee | Not currently allowed. |
| Utah | Allowed by law. Currently collecting unencrypted patient identifiers. |
| Vermont | Allowed by law. Currently collecting encrypted patient identifiers. |
| West Virginia | Allowed by law to be collected, but not disclosed. |

In order to perform linkage accurately to HIE, EHR, registries, and other data sources, states will either need to collect direct patient identifiers and have strict controls on linkage and release, or will need to work with HIEs and clinical sources to use the same encryption algorithms provided to carriers who generate the currently de-identified data. The latter is more unlikely due to the technical effort required

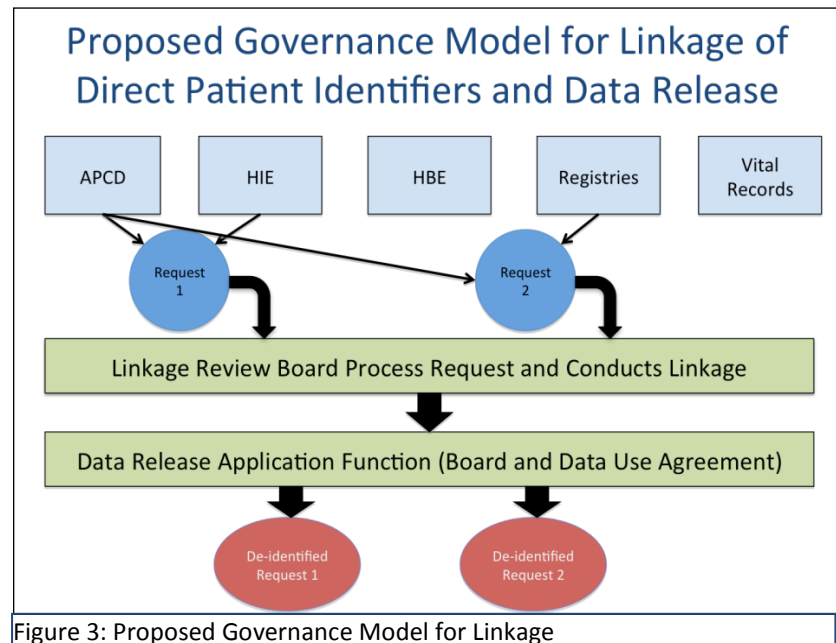
⁴ This table's primary focus is whether or not a state can collect direct patient identifiers. Information is also reported regarding release of said information for certain states (CO, ME, WV).



and more prone to error in matching algorithms. Additionally, some carriers are phasing out collection of social security number which is the primary field used by states to encrypt today. It is expected that those states who are just embarking upon APCD development and have robust HIE capacity will lean toward the former.

Figure 3 shows an example of multiple data sources that are likely to be linked by states in the future. It shows two example requests (blue circles). One is between an APCD dataset and an HIE, and the second is between an APCD dataset and a registry (i.e., diabetes, vaccinations, cancer, etc).

The figure envisions a request being received and evaluated by a linkage review board (LRB) that would be similar to an institutional review board. The LRB would make such decisions as to whether the requestor



should be allowed to make the linkage and under what conditions. Additionally, the LRB might actually perform the linkage itself in order to assure an additional level of privacy. This is similar to the way some states today manage their data release via a third party vendor who manages the state's data collection and release technical efforts. After LRB approval, the diagram depicts the process operating similar to the way several states have set up data release application processes. In most cases, it would be expected that the final, linked file (red ovals) would be released without patient identifiers, thus ensuring privacy. Release governance processes today take into account what fields are requested, purpose of release, compliance with state laws and regulations, and implement data use agreements with the requestor.

Other factors for consideration are whether or not a state has developed either a master patient or master provider index. Either of these could be potentially used in the linkage framework. The "hit rate" of the linkage will also highly depend on how developed the databases are that are being linked. If the HIE for example only covers part of a state or if the APCD is missing Medicare data, the value of the linkage decreases. The assumption being made is that ultimately both HIEs and APCDs will have full state coverage.

Finally, several states are actively exploring how the APCD data could be linked to their HBE. The eligibility and claims information could be very valuable to insurance departments running HBE efforts.



#5 – Collection of Non-Claim-Based Fiscal Transactions

APCDs capture charges, allowable amounts, payment amounts, and patient liabilities from claims data. However, carriers routinely reimburse providers outside of claims in a multitude of ways, and APCDs do not currently capture these transactions and costs, thus leaving states with an incomplete picture of the total costs and pricing. The following are examples of these non-claims based fiscal transactions:

- Pay-for-performance payments;
- Per member per month medical home payments;
- Capitation fees;
- Contractual settlement debits or credits supporting risk contracts;
- Pharmacy benefit manager rebates;
- Etc.

In the future, state APCDs should develop an additional file transaction type that would capture these non-claims-based fiscal transactions and report it to the APCD in order to more accurately report on the total cost of services both administrative and medical in nature. This transparency will be increasingly important as ACO arrangements are developed, along with other forms of payment reform that may rely on capitation, bundling, bonus, or incentive payments.

A *proposed* file layout would minimally need to include the following elements:

- Carrier ID;
- Provider ID;
- Transaction date;
- Debit or credit amount between the carrier and provider;
- Transaction reason code (i.e., contract settlement payment, P4P payment, quality bonus payment, primary care centered medical home payment, capitation fee, other payment).

The file would need to be developed under the auspices of the data collection standards process outlined earlier in this paper. It will require significant input from carriers as the information will likely be stored in financial systems not normally queried for external purposes, and may be difficult to extract.

#6 – Collection of Premium Information

APCDs contain one side of the fiscal health care equation, namely expenditures. What they do not currently contain on the current eligibility files is the premium collected at the employee or employer level. Some states such as New Hampshire have collected this data in supplemental reports in order to create a “benefit index” that compares the value of plans sold within the commercial marketplace.

By only capturing expenditures today, APCDs do not provide policy makers with any information regarding medical loss ratios, nor more obviously, the simple total amounts of premiums collected by carriers and paid by employers. Employer coalitions who are accessing this data more frequently will be one of the largest beneficiaries of this information.



To illustrate this point of collecting premium information, in March 2011, Colorado issued a report⁵ to its Governor and General Assembly (as required by law), and made mention multiple times regarding the need to have premium information.

“Premium information and employer name are needed to provide employers with improved purchasing support. The Advisory Committee and its subcommittees noted that other states do not collect information about the member’s premium, covered services and cost sharing rules within the monthly detailed claims line and member eligibility record files.”

“[Premium information collection will] Address employers’ needs for informed health insurance purchasing, including information about premiums, actual spending and how to mitigate cost increases.”

“To meet Colorado’s reporting needs, the Colorado APCD Technical Submission Guide will include requirements for:

- Premium information and employer name to provide employers with improved purchasing support.”

One logical way to collect this information would be on the eligibility file submitted by the payers. Some payers today within their data warehouses collect “premium equivalents” at the benefit tier level so that the total premium amount would be provided as well as a “premium equivalent” on each eligibility record, taking into account the number of tiers (family, two-person, single). Some insurance departments require premium reporting, but if it was embedded within the APCD eligibility files, insurance departments and HBEs could more easily access this information, and it would be available at the “atomic”, member level which could be rolled up by group, line of business, etc.

#7 – Master Provider Index

The creation of consolidated, accurate provider files has been challenging for states to date. Provider identification in healthcare is an issue in many systems, not just claims. It also depends upon the definition of who the provider is – for example, the primary care physician or the practice or hospital that employs the physician. APCDs today are struggling with provider identification, as are health plans, health services researchers, HIEs, and others. The federal National Provider Identifier (NPI) does not currently solve the problems of relationships between who might employ a provider, or the issue of providers employed by multiple entities, or providers assigning multiple NPIs to various parts of their organizations (i.e., a hospital lab).

Additionally, if a state is taking dozens of carrier feeds and then attempting to consolidate those provider files into one file to come up with the unique “Dr. Smith” in a state or community, one can quickly see how complicated this becomes. The carrier files do not typically show provider employment or financial relationships, and there are often issues between billing and rendering providers submitted on claims. If states expect to use APCD data for provider comparison analyses, dedicated resources and continuous maintenance of provider files is required.

⁵ March 1, 2011, Report to the [Colorado] Governor and the General Assembly from the All Payer Claims Dataset Advisory Committee and the All Payer Claims Dataset Administrator as required under Section 25.4-1-204(4). <http://www.civhc.org/getattachment/CIVHC-Initiatives/Data-and-Transparency/All-Payer-Claims-Database-Activities/APCD-FINAL-REPORT---E-Edition.pdf.aspx>



One likely solution to the problem is linking a state's APCD with its HIE when the HIE has established a master provider index. However, that may also be error prone as the HIE's index will likely be used for transaction routing purposes and not necessarily be applicable for APCD analytics. Several states are exploring this concept now.

#8 – Collection of Benefits Information

This item has been left for last, not due to lack of importance, but because there are no recognized standards today for how carriers should submit benefit information on enrollees. Benefit packages vary within products and across carriers. This paper defines “benefits information” as co-payments, coinsurances, deductibles, out-of-pocket maximums, lifetime maximums, and the detailed medical or pharmacy benefits such as the number of physical therapy visits or whether therapies such as IVF are covered.

From a health services research perspective, benefits information is important as there is evidence that benefits can impact utilization as costs continue to rise and more is shifted to the consumer, understanding the relationships between benefits and utilization will become even more important. The APCD Council and others will be looking to the National Association of Insurance Commissioners (NAIC) and America's Health Insurance Plans (AHIP) for further direction in this area.

HBEs will need to solve for this problem, likely working with organizations such as the NAIC and AHIP. Once solved for, the APCD community can adopt the HBE standards, or as outlined in the linkage section earlier, link directly to the HBE to pull the information. This would be helpful information to capture in order to make better cost and utilization comparisons across groups or lines of business.

CONCLUSIONS

In summary, APCDs have made significant strides in the past few years in terms of providing useful information to states, but with health reform, a continued need for transparency, the ability to create operational efficiencies, and the need to link data sets together, there are key components of APCD functionality that states need to be planning for and implementing in order to make the systems more robust and useful. Since APCDs were started, there have been recognized shortcomings and limitations, however, with the items outlined in this paper, APCDs have the opportunity to be of even greater value to policy makers, consumers, employers, carriers, providers, and the federal government as health reform moves forward and transparency requirements increase. Without implementing these changes, states will be limited to yet another “silo” of data that while can provide large benefits, loses great potential as an important piece of the US data management infrastructure. Even if a state cannot accomplish everything outlined in this paper, significant benefits can be reaped at the level of current systems. This has already been proven.

Paper prepared by the All-Payer Claims Database (APCD) Council in collaboration with the National Association of Health Data Organizations (NAHDO). Lead author, Patrick B. Miller, MPH, is a Research Associate Professor at the University of New Hampshire and Chair of the APCD Council. He can be reached at patrick.miller@unh.edu or via the APCD Council at www.apcdouncil.org. Research support provided by Ashley Peters, MPH, who is a Research Associate with the New Hampshire Institute for Health Policy and Practice at the University of New Hampshire.

