Research Article

The Data-Driven Policy Analysis Framework as a Template for Healthcare Policy Analysis

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Abstract

The purpose of this abstract is to illustrate how the Data-Driven Policy making Model can be used as a template and guide in analyzing and evaluating healthcare policy. The objectives include: 1) Discuss the Data-Driven Policymaking Model, 2) Analyze the connection of evidence-based practice and healthcare policy analysis and 3) Evaluate the utilization of data-driven policymaking and the development of advocacy plans to revise and develop healthcare policy. The Data-Driven Policymaking Model consists of four stages:

1. Stage One – Define the definitions and priorities of the healthcare policy analysis. Identify the healthcare policy problem.

2. Stage Two – Examine available data to aid in policy development. Identify data matrixes and sources.

3. Stage Three – Analyze, clarify, and disseminate the data. Utilize descriptive statistics for quantitative data. Outline discourse analysis principles for qualitative data from legislative session minutes, bills, and public forums.

4. Stage Four – The action phase where policy options supported by data are explored and advanced.

Data-driven policymaking findings can be outlined in contingency tables with frequencies, percentages, and risk indices to provide the context of healthcare policy analysis. Qualitative data can be analyzed using discourse analysis and presented in timelines and thematic grouping into categories. Theme analysis can identify effective strategies to be utilized in advocacy plans. Thus, the data can drive policy making inclusive of revisions and development. The healthcare policy analysis should result in an evidence-based white paper outlining an effective advocacy plan. Data supports policy development, reformulation, alternatives or termination.

Keywords: Data-driven policy-making model; Data-driven decision making; Policy analysis; Healthcare policy analysis

Abbreviations

AHRQ: Agency for Healthcare Research And Quality; CDC: Centers for Disease Control And Prevention; HIFA: Health Insurance Flexibility and Accountability; US: United States; WHO: World Health Organization

Introduction

Healthcare policy analysis is often necessary to clarify practice, evaluate complex publically or privately supported programs, determine the distribution of scarce resources, and propose future policy formulation. Often such policy analysis is conducted by an inter-professional team. A policy analysis may be conducted by a variety of healthcare providers, policymakers, planners, or analysts [1].

Policy analysis is a reproducible systematic description and explanation of the causes and consequences of political action or inaction [2]. In addition policy analysis assists healthcare providers to be more effective change agents and advocates [3]. Stakeholders can be identified and partnerships formed to enhance lobbying efforts. The stakeholders are individuals that have an interest in the issue for a variety of reasons [4].

Emphasis has been placed on the incorporation of evidence-based practice which integrates research findings into the clinical setting. A similar practice has been emphasized by using data and policy analysis to understand policy failures and successes, as well as future policy implementation. The Data-driven Policy Model involves explicit priorities and guiding questions to conduct a policy analysis. Data is used to support the process of developing policy options for numerous situations.

Despite the potential impact of policy analysis, limited education and training is devoted to this topic. Multiple models, frameworks, and theories have been used to guide policy analyses. Policy analysis is complex. The analyst must have an understanding of the content, the context in which the policy was developed, the stakeholders, and intended/unintended consequences. A review of legislative policy, rules, and regulations can be overwhelming due to the enormity

of information. A framework or theory adds credibility to the policy analysis and guides the analyst through the maze of related information.

Walt et al [1] reviewed various frameworks and theories used in policy analysis with recommendations for advancing the field of policy analysis. The authors claim that one of the oldest and best known frameworks is the stages heuristic. In 1956 Lasswell (as cited by 1, p$_3$10) presented the four stages of heuristic as agenda setting, formulation, implementation, and evaluation. Agenda setting is essentially defining the issue of interest. In the formulation stage legislation, rules and regulations are developed. Once formulated the policies are implemented and evaluated for effectiveness. As with many policy process frameworks the heuristic stages have been criticized for being too linear.

Historical Literature Review

The policy triangle frameworks were proposed for healthcare policy analysis [2]. These frameworks incorporate a political economy perspective. Subsequently this framework has been used to analyze a variety of policies in different countries. Currently economics and scarce resources are often considered in many policy analysis frameworks.

Network frameworks have been used to evaluate policies that involve multiple organizations or systems. The emphasis is on the inter-connections between the groups. This aspect is crucial to evaluating the effectiveness of global health initiatives. Often non-governmental and governmental organizations team together based on their common values and shared resources. The network framework analyses the shared decision-making and exchange of resources to achieve these goals.

In 1984 Kingdon proposed the multiple streams theory (as cited by 2, p$_3$11). This theory argues that the public policy process has random characteristics. Problems, policies, and politics flow in independent streams. Laraway and Jennings [5] used Kingdon's theory to describe the Health Insurance Flexibility and Accountability (HIFA) Initiative. The initiative's goal was to assist states in expanding and increasing healthcare access to low-income individuals. At the time of initiation, the economy was strong. In addition a large number of uninsured individuals had not been affected by September 1, 2001. So a variety of events occurred in different streams but contributed to the failure of this initiative.

Baumgartner and Jones [6] introduced the punctuated equilibrium theory. Policy-making is characterized by periods of stability in which minimal or small incremental changes are made. Periodically disruption occurs resulting in bursts of rapid and transformational change. Thus the policy process is cyclical in nature.

Walt et al [2] describe multiple implementation theories. These theories focus on the top-down nature of policy development versus bottom-up policy implementation. Most policies are formulated in a top-down manner based on the decision-making of legislators that are far removed from the issue. Often the policy implementation is based on the bottom-up nature by having the grass roots people that are directly involved with the issue performing the implementation components. This disconnect is hypothesized as being the reason for

incongruence between policy development, implementation, and outcomes.

Lessa et al [7] examined policy analyses published from 2008 through 2013. These investigators found that the policy cycle or policy process theory was the most common used for analyzing policy. The policy development process is viewed more as a political activity not necessarily a scientific process [8]. This theory suggests that advocates should match their strategies with the policy process stage. Consequently the probability of the advocated policy reform will be adopted.
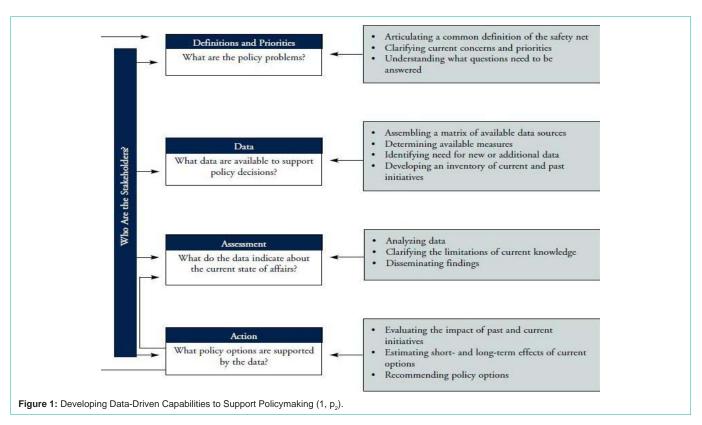
Ryder [8] describes eight stages within the policy process model. These stages are not necessarily linear in nature. Two different stages can be in progress simultaneously. At times the stages are difficult to differentiate. The stages are 1) Agenda setting – the action to be taken, 2) Issue filtration/definition – essentially the government decides what should be done, 3) Definitions - clarifying the problem and opportunities, 4) Forecasting - consideration of how the situation will develop with policy options, 5) Options analysis – analysis of costs, benefits, and why the policy should be adopted or not adopted, 6) Objective setting – policy objectives as viewed by different stakeholders, 7) Monitoring –measuring the outcomes, and 8) Policy maintenance – decisions to continue with the policy, reformulate the policy, or terminate the policy. The purpose of a policy analysis using this framework is to analyze the policy retrospectively and prospectively. In retrospect the means in which the policy succeeded or failed could influence policy reformulation. Prospectively the analyst determines what the policy is currently and what it should be.

In a recent literature review conducted in 2016 by the authors, social policy analysis, critical analysis, exploratory analysis, stakeholder analysis and comparative analysis seem to be the predominant frameworks. Social policy analysis analyzes the connection between ethical aspirations of eliminating complex social problems with human rights, justice, and utility [9]. Social policy analysis looks at core principles such as safety, trustworthiness, outcomes, transparency, collaboration, peer support, empowerment, and choice [10]. Social policy analysis consists of quantitative and qualitative data. The emphasis is the impact on people rather than the means in which to implement the policy. Social Policy methods address program outcomes, impact evaluation, cost-benefit analysis, and an assessment of political influences on implementation. The social determinants of health drive public health policy to promote health through policy implementation.

The critical analysis was described as having four components: 1) colleagueship, 2) evidence based analysis, 3) policy development, and 4) final analysis [11]. Exploratory analysis evaluates characteristics or factors affecting behaviors to inform policy [11,12]. Often it is more descriptive in nature. A stakeholder analysis focuses on the motivations, information, and power of key stakeholders [12]. This type of analysis is composed primarily of qualitative data obtained through interviews. Common stakeholders include payers, professional associations, individual healthcare providers, manufacturers, legislators, and patients.

Ritter et al. [13] reviewed a variety of comparative analyses. These analyses seek to determine the extent that a policy has produced the

Figure 1: Developing Data-Driven Capabilities to Support Policymaking (1, p$_2$).

desired effects. Often cross-national or cross-state comparisons can answer this question. Comparative analyses lack uniformity. Only two criteria were identified. First two or more geographic locations are utilized. Secondly the study focuses on a policy. Descriptive epidemiology or a single state or country analysis are not considered to be a comparative analysis. Quantitative and qualitative data are included. The analysis looks at the policy as proposed and compared to the policy implementation.

Currently more authors [14,15] are appealing for inclusion of qualitative data in policy analyses. Qualitative methods include the public's voice and experiences with healthcare services, research, and policy-making. Often the affected people are not included in policy analysis. The debate of the strengths and limitations of qualitative data is often interjected. Yet secondary analysis of qualitative data can be an effective means to inform policy decision-making. Unfortunately qualitative research can be time-consuming and expensive if trying to conduct in-depth interviews with diverse samples [14]. Consequently secondary analysis can be more efficient. Such information can enlighten policy makers on topics like access, waiting times, communication of information, dignity and respect in regards to different health conditions or social groups.

Discourse analysis can be used as a secondary analysis tool to obtain qualitative data. Discourse is a group of ideas or thinking that emerges through textual and verbal communication [16]. By reviewing the legislation, regulations, rules, public forums, and debates; the dominant meanings, assumptions, words, and ideologies can emerge. The public perception of health matters can be demonstrated. Discourse analysis is less used in healthcare policy analysis than in other areas. A timeline or topic map can be developed

to identify recurrent themes, language use, ambiguous terms, and stakeholder representation. The discourse is processed, categorized, and coded into semantic networks, themes, or indexes of topic occurrences. Silence is just as important. Who is not speaking can be a glaring message.
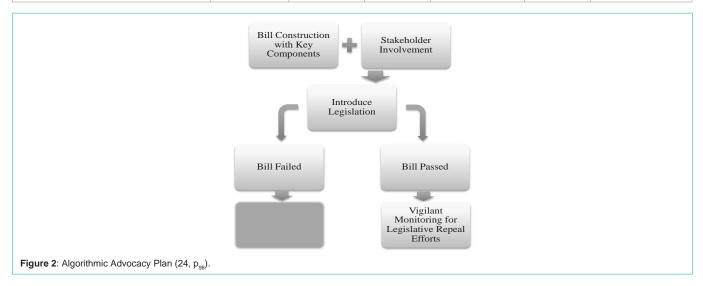
There is an array of models, frameworks, and theories to guide policy analysis. They are not necessarily contradictory. Most frameworks focus on specific aspects of policy decision-making. These aspects include social health determinants, the policy process, stakeholder views, the public's voice, and comparative effectiveness. Some of the frameworks and theories have similar components. Most of them include a question, aim, or goal. The analyses center on policy formulation or development; as well as implementation and evaluation. Unfortunately they are often ambiguous. Little direction is given on how to organize or analyze the vast information encountered. Certainly the analyst can get lost in the myriad of documents, forums, debates and vital statistics. Sonier [17] said that if data is present it will be used in policy-making. However if data is not present, policy-making will move forward without the facts.

Materials and Methods

The Data-Driven Policy-Making Model is more explicit in describing how to conduct a policy analysis. The model incorporates many aspects of the previously discussed frameworks and theories. In 2003 the Agency for Healthcare Research and Quality (AHRQ) presented the model to assist in the data-driven decision-making of four states that were analyzing the impact of their Health Care Safety Nets. Figure 1 Developing Data-Driven Capabilities to Support Policymaking outlines the four stages of the model. These stages are: 1) Definitions and priorities, 2) Data, 3) Assessment, and 4) Action.

Table 1: Healthcare Quality Indicators Example (24, p$_{60}$).
Healthcare Quality: Population

Healthcare Quality Population	Louisiana	Kentucky	Maine	New Mexico	Utah	United States
Overall Healthcare Ranking	48th	42nd	7th	36th	9th	
The Commonwealth Fund						
Acute Myocardial Infarction						
Mortality Rate	65.4	83.7	NA	NA	NA	51.2
Prevalence	4.40%	5.80%	4.10%	3.60%	6.40%	3.20%
Coronary Heart Disease						
Mortality Rate	172.5	172.1	NA	NA	NA	NA
Prevalence	5.40%	5.90%	4.30%	3.30%	3.20%	4.80%
Cerebrovascular Disease						
Mortality Rate	37.6	58.9	NA	NA	NA	53.8
Prevalence	3.40%	3.70%	2.10%	2.30%	2.50%	22.70%
Heart Failure Mortality Rate	46	34.8	NA	NA	NA	23.8
High Cholesterol Percentage	34%	38.40%	34.40%	31%	33.10%	28.40%

Figure 2: Algorithmic Advocacy Plan (24, p$_{98}$).

In adapting the Data-Driven Policy-Making Model to specifically outline the processes, data, data sources, analysis process, and disseminating the findings in a white paper or advocacy plan, Weiner's [18] Health Policy Analysis Checklist was incorporated into the four stages by the authors.
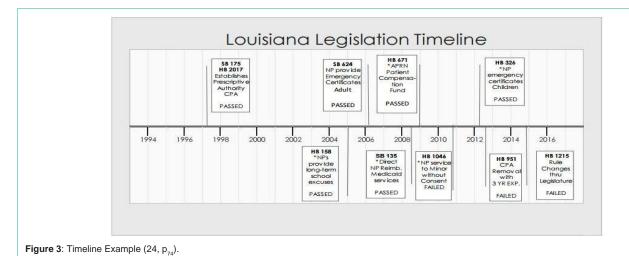
Stage 1: Definition and Priorities: All stakeholders must come together to articulate common definitions of the policy issues or problems. The definition should include the target population, providers, and funding streams [1]. This stage should answer the question, "What are the policy problems?"(1, p$_2$). The definitions should delineate the magnitude and scope of the problem. Influencing factors may need to be listed and prioritized as to needing action or not. The stakeholders should clarify the current concerns regarding the policy issue. A shared list of definitions, concerns and priorities can guide the policy analysis process. The direction and focus of the analysis is outlined.

Stage 2: Data: "What data are available to support policy decisions?" (1, p$_2$). Data can be categorized as quantitative or qualitative. A matrix should be developed outlining the required data and the corresponding data sources. The context of policy-making should be explored. Demographic information can be of assistance. Data such as household income, insurance coverage, most prevalent age groups, and rural versus urban can offer a picture of the population. This quantitative data can be found in several locations including the websites for the United States (US) Census Bureau [19], Centers for Disease Control and Prevention (CDC) [20], and the World Health Organization (WHO) [21]. Quality indicators can also assist in describing the context and contributing factors. Such information includes the leading causes of death, incidence of risk factors, infant mortality rates, and longevity. These indicators can be located on the CDC [20] and WHO [21] websites. A table or Excel worksheet should be developed to collect data in an organized manner (Table 1).

In addition the desired outcomes of the policy should be identified. How were these outcomes intended to be monitored? Too often the outcomes are not specifically outlined or monitored. Acceptable measures may need to be agreed upon by the stakeholders prior to the analysis. The analyst must determine if this data is retrievable.

Figure 3: Timeline Example (24, p_{74}).

In some instances the data may be so time-consuming and nebulous that it must be eliminated. Reflections of the outcome may need to be identified. For example, access to care is a broad term. More specific and available measures may be the number of emergency room visits, wait times to new and established primary care appointments, as well as the number of providers within the area compared to the population density.

An inventory of past and current initiatives related to the issue should be developed [1]. This inventory may take the form of a legislative timeline. See Figure 3 for a template of a timeline. Another method is to develop a map relating the various policy issues or problems to reports with their sources to specific legislation, regulations and rules [22]. The map includes all related policy documents, a timeline, phases of legislation, and related programs.

Qualitative data is gathered through analysis of the bills introduced, minutes of legislative sessions, debates, public forums, approved legislation, regulations, and rules [16]. The written data assists in identifying the stakeholders. The tone and content of such information can identify attitudes of dominant groups.

The phenomenon of "othering" (16, p_{462}) may emerge. "Others" become responsible for the problem, such as the chronically ill. These individuals create a "burden" for themselves, families and society. "Othering" is the process of presenting people or groups as alien to the cause and distant. Thus groups become, "we" and "they" or "others" (16, p462). Consequently, one group is to blame or responsible for the problem, "others". The "we" group is responsible for the solution. These dynamics may dominate discourses related to healthcare policies.

The documents directly related to the policy may be difficult to obtain. Decision-making is often opaque. Consequently finding relevant documents and papers can be problematic. Thankfully many governmental documents have been digitalized and are easily accessible. In contrast, documents past the 1980s may be hard copies or on microfilm. Consequently the analyst may have to personally go to the library housing the archived information or develop a strong relationship with the librarians. In some cases the documents are so difficult to obtain, they must be omitted. Reliance on a librarian specializing in government documents can enhance the retrieval of pertinent documents.

Step 3: Assessment: The quantitative data can be analyzed using descriptive statistics, such as frequencies, percentages, and means. In some cases statistics may be used to compare between groups. The choice of statistics will be based on the number of groups, data points, and the level of measurement. These statistics may include non-parametric or parametric tests, such as Chi-square, Paired t-test, Wilcoxon Signed Rank, Mann-Whitney U, or Kruskall-Willis [23].

The qualitative data can be assessed using discourse analysis [1]. Initially the data is read with intent to gain understanding of the topic and context. A second reading is performed to identify recurrent words, terms, phrases, themes, and ideas [16]. In addition the analyst should provide details on language use. Some terms may be degrading or associated with legislation failure. Other terminology may be viewed in a more positive manner commonly associated with approved legislation. An example is the use of the term independent practice for advanced nurse practitioners versus full practice [24]. Independent practice might be threatening to physicians and suggest a loss of control. Whereas, full practice conveys more the intent of background documents, suggesting that nurses should function to the full limits of their scope and experience.

The stakeholders, as well as their power positions and viewpoints can be discerned through discourse analysis. This type of analysis aims to discover social relationships, power structures, and the identities of the stakeholders. As mentioned previously, silent parties may emerge as well. These individuals could be crucial in the advocacy plan.

Topic maps can be an effective analytic tool. The topic maps assist in knowledge management including processing, categorization and coding. Categories can be established prior to the data analysis. Findings can be placed in those categories. For example, in analyzing a pharmaceutical policy reform in Cyprus, these categories were established to organize the results for policy options: pricing, reimbursement, prescribing, dispensing and cost-sharing [12]. In a review of full practice policies for nurse practitioners these categories emerged during the analysis: prescriptive authority, removal of written agreements, signature legislation, and insurance coverage, consolidation of governing boards, telehealth, and consensus language [24]. The categories help organize a large amount of data.

Themes also emerge based on recurrent words and phrases, as well as the inferences of ideologies and power structures [2]. In presenting the data analysis a table can be developed representing the categories or themes with examples of the supporting terminology and quotes. The discourse analysis should logically support the categories or themes. A general picture of the context, stakeholders, and the public's voice or experiences should be presented to inform future policy options.

Stage 4: Action: The action phase focuses on the policy options supported by the quantitative and qualitative data [1]. The data assists in evaluating the impact of past and current initiatives. The impact may have intended and/or unintended outcomes [2]. A data-driven policy analysis can be conducted prior to policy implementation. The data can assist in minimizing untoward effects. In addition, short- and long-term effects of the current options should be considered. Repeated assessment can help measure these outcomes, including strengths and weaknesses. These appraisals should include the social, cultural, economic, and scientific effects [9]. In addition the congruence of the policy's intent and the outcomes should be considered [22]. A policy or program may need to be in operation for a long time period to realize the full impact [9]. However monitoring throughout implementation can prevent major failures and influence crucial changes in initiatives at an early stage. The outcomes will influence the policy options and development of an advocacy plan.

The Action Phase should produce a practical deliverable to the stakeholders. Typically this deliverable is going to be a white paper or an advocacy plan. A white paper is an authoritative paper that addresses an issue, explains a problem, or proposes a solution to a problem. The white paper is commonly used in government [25]. Recently industry has adopted the white paper format to develop a proposal for a specific position or solution to a problem or promotion of products.

The white paper is short and to the point [25]. White papers are often 1-5 pages. The paper should include a brief background and data supporting the selected policy options. Strategies should be outlined to push the solution forward. The paper is written with the readers in mind. The document should be engaging, easy to read, and emphatic about the action plan. Often professional organizations will adopt the white paper as a position statement or as a tool to implement an advocacy plan.

The final stage of the policy process is the consideration of policy maintenance, reformulation, substitution of an alternative, or termination of the policy [8]. Maintenance of the policy may be justified with the data. However other influences such as adequate resources may threaten continuation of the policy. Consequently the white paper should include alliances or resource sharing opportunities. Justification of the current policy should be evident from the data. Policy reformulation or an alternative option should emerge from the data and possibly from comparative analysis in which another approach has been demonstrated to be more effective. Termination is often the hardest decision for government. Legislators like to be seen as doing rather than stopping. However some policies or programs may be identified as ineffective or requiring limited resources that could be used in a more productive manner. An objective analysis of the options may lead the stakeholders to new understandings, and new policies to advocate.

An advocacy plan outlines strategies that guide the interested individuals in influencing a policy option [10]. Bayhi [24] outlined an algorithmic advocacy plan (Figure 2). The plan instructs the advocate to align with stakeholders. Then the key components for the proposed policy option are identified. Legislation is introduced. Steps to follow in the event of legislative failure or approval are listed. Thus the algorithmic advocacy plan is a step by step plan on implementation. These strategies may be aimed at a national initiative or more local focused policies, such as an institutional policy addressing the issue [10].

The Data-Driven Policy-Making Model is an explicit model outlining the steps for policy analysis which will result in action. The policy analysis process is broken into four basic phases. These phases are easily used by the novice analyst.

Results and Discussion

Unfortunately the Data-Driven Policy-Making Model has not been widely discussed in the literature. AHRQ presented the model in 2003 [1]. The model was successfully used to provide priorities and questions to answer with data providing guidance in support of policy options for the health care safety net. The AHRQ used this approach to help policymakers, planners and analysts in 30 states and the District of Columbia to analyze and monitor the Health Care Safety Net in their respective regions. In addition a grant was obtained to further assist four states (Arizona, Florida, Oregon, and Virginia) to develop a series of data-driven recommendations to improve the stability of their Health Care Safety Nets. The first step was defining the safety net in terms of populations, providers, and funding sources. Using the Data-Driven Policy-Making Model the stakeholders developed their capacity for formulating a data-driven policy related to the provision, financing, and monitoring of their safety nets.

In 2008 Sonier [17] used the Data-Driven Policy-Making Model with Minnesota hospital data to make data-driven policy decisions. This process was used to evaluate the need for new inpatient beds and analyze costs associated with preventable readmissions. The process was incorporated into a policy analysis regarding inpatient beds. The data included elements of the regulatory environment and factors affecting the future need for hospital bed capacity in Minnesota. Population growth, age groups, healthcare services utilization, inpatient hospital days, and occupancy rates were examples of the quantitative data. The data-driven decision-making process led to the approval of one new acute care facility and the disapproval of an inpatient psychiatric facility. The data identified the impact of avoidable hospitalizations on bed capacity. Consequently a comprehensive health reform law was developed focusing on payment to align with quality and care coordination. This law directly addressed the avoidable hospital admission problem. Data has increased in importance as healthcare issues have become more complex.

In 2014 through 2015 Bayhi [24] utilized the Data-Driven Policy-Making Model to conduct a policy analysis as a doctorate project. The purpose was to develop an evidence-based position statement in order to achieve full practice for nurse practitioners in Louisiana. The quantitative data demonstrated that states with reduced nurse practitioner practice had the highest mortality and infant mortality rates. Legislative themes were developed with timelines. The qualitative

data revealed that the promotion of stakeholder relationships and persistent bill submission was successful in achieving full practice legislation. Legislative construction was more productive with incorporation of Consensus Model wording, discussion of health disparities, access to care, and addressing nurse practitioner work experience. The subsequent white paper was adopted by the Louisiana Association of Nurse Practitioners. The recommended advocacy actions have been used in recent legislative lobbying efforts.

Finally another doctorate student has begun a policy analysis of the Prescription Monitoring Program and the implications for advanced nurse practitioner prescriptive authority rules and regulations (Janet Jones. Conversation with: Cynthia York. 2015 Nov 09). She will be using the Data-Driven Policy-Making Model to guide her analysis. Thus far the framework has been beneficial in identifying relevant data and organizing such data for nursing doctoral students.

The Data-Driven Policy-Making Model should be utilized more often for policy analysis. The model is an effective tool in organizing a policy analysis. The questions and definitions provided by this model help to focus on the analysis of the policy. The identification of quantitative and qualitative data organizes investigative approaches. The analysis will evolve into a white paper with an advocacy plan that will guide future actions.

Conclusion

A wide array of models, frameworks, and theories exist to guide policy analysis. Some of the most common methods are policy process, social policy analysis, stakeholder analysis, exploratory analysis, discourse analysis, and comparative analysis [2,3,5,9,10,12-16,18,22]. The majority of these approaches are ambiguous. Consequently the novice analyst can lose focus and become overwhelmed with the large amount of data, information, and resources. The analysis can become very time consuming and non-productive. The explicit nature of the Data-Driven Policy-Making Policy helps to lay out specific steps in the analysis process.

The Data-Driven Policy-Making Model was initially introduced by the AHRQ in 2003 to guide the monitoring and evaluation of the Health Care Safety Net [1]. The model was effective in guiding the states in utilizing data-driven decision-making to evaluate policy options related to the health safety network. Unfortunately the model has not been well published in the literature since its introduction.

The Data-Driven Policy-Making Model consists of four phases: 1) Definitions and Priorities, 2) Data, 3) Assessment, and 4) Action [1]. The beginning step is to establish mutually accepted definitions and priorities related to the problem or issue. In the second step quantitative and qualitative data required for the analysis are outlined with their data sources. The third step involves data analysis. Finally a white paper with an advocacy plan is developed as the last step leading to action.

The Data-Driven Policy-Making Model incorporates many aspects of the previous policy analysis approaches. This model refines the problem or question. Quantitative and qualitative data are utilized. Consequently the target population's voice can be heard. The stakeholders and their perspectives are addressed. Throughout the analysis the congruence between the policy's intent, implementation, and outcomes is evaluated. The major advantage of the model is the emergence of the white paper with specific recommendations for advocacy. Thus the analysis should result in action. That action may be continued maintenance of the policy, reformulation, institution of an alternative policy, or termination.

As healthcare systems become more complex and resources are scarcer, the need for data-driven decision-making will be paramount. The Data-Driven Policy-Making Model can assist in objective policy analysis leading to more effective policy options.

References

1. Weinick RM, Shin PW. Developing Data-Driven Capabilities to Support Policymaking. In Monitoring the Health Care Safety Net-Book III: Tools for Monitoring the Health Care Safety Net. Rockville, MD: Agency for Healthcare Research and Quality. 2003.

2. Walt G, Shiffman J, Scheider H, Murray SF, Brugha R, Gilson L. 'Doing' Health Policy Analysis: Methodological and Conceptual Reflections and Challenges. Health Policy Plan. 2008; 23: 308-317.

3. Sheldon MR. Policy-Making Theory as an Analytical Framework in Policy Analysis: Implications for Research Design and Professional Advocacy. Phys Ther. 2016; 96: 101-110.

4. Teitelbaum JB, Wilensky SE. Essentials of Health Policy and Law. 3rd edn. Burlington, MA: Jones & Barlett Learning. 2015.

5. Laraway AS, Jennings CP. Health Insurance Flexibility and Accountability Demonstration Initiative (HIFA): A Policy Analysis Using Kingdon's Policy Streams Model. Polit Nurs Pract. 2002; 3: 358-366.

6. Baumgartner FR, Jones BD. Agendas and Instability in American Politics. Chicago: The University of Chicago Press. 1993.

7. Lessa G, Kuehlkamp VM, Erdmann AL. Analysis of Public Policies: A Narrative Review. Cogitare Enferm. 2015; 20: 191-197.

8. Ryder D. The Analysis of Policy: Understanding the Process of Policy Development. Addiction. 1996; 91: 1265-1270.

9. Yamantani H, Feit M. Contemporary Policy Analysis Methods: An Incorporation of Ethical Principles: Implementation Processes. J Hum Behav Soc Environ. 2013; 23: 817-823.

10. Bowen EA, Murshid NS. Trauma-Informed Social Policy: A Conceptual Framework for Policy Analysis and Advocacy. Am J Public Health. 2016; 106: 223-229.

11. Erlyana E, Acosta-Deprez V, O'Lawrence H, Sinay T, Ramirez J, Jacot EC, et al. Health Insurance Information-Seeking Behaviors Among Internet Users: An Exploratory Analysis to Inform Policies. J Health Hum Serv Adm. 2015; 38: 5-16.

12. Woulters OJ, Kanavos PG. Transitioning to a National System in Cyprus: A Stakeholder Analysis of Pharmaceutical Policy Reform. Bull World Health Organization. 2015; 93: 606-613.

13. Ritter A, Livingston M, Chalmes J, Berends L, Reuter P. Drug Policy Modeling Program. Int J Drug Policy. 2016; 31: 39-50.

14. Ziebland S, Hunt K. Using Secondary Analysis of Qualitative Data of Patient Experiences of Health Care to Inform Health Services Research and Policy. J Health Serv Res Policy. 2014; 19: 177-182.

15. Schang L, Thomson S, Czypionka T. Explaining Differences in Stakeholder Take Up of Disease Management Programmes: A Comparative Analysis of Policy Implementation in Austria and Germany. Health Policy. 2016; 120: 281-292.

16. Walton JA, Lazzaro-Salazar M. Othering Chronically Ill: A Discourse Analysis of New Zealand Health Policy Documents. Health Communication. 2016; 31: 460-467.

17. Sonier J. Data-Driven Policy Decisions: Uses of Minnesota Hospital Data. 2008.

18. Weiner J and John Hopkins University. Health Policy Analysis Checklist: For the Development, Selection, and Assessment of Program Policies within Health Care Organizations. In Introduction to Health Policy. Boston, MA: John Hopkins University. 2005; 1-8.

19. United States Census Bureau.

20. Centers for Disease Control and Prevention.

21. World Health Organization.

22. Cheung KK, Mirzaei M, Leeder S. Health Policy Analysis: A Tool to Evaluate in Policy Documents the Alignment Between Policy Statements and Intended Outcomes. Aus Health Rev. 2010; 34: 405-413.

23. Statistics Solutions.

24. Bayhi L. Health Policy Analysis of Nurse Practitioner Initiatives to Develop Advocacy Strategies towards Full Practice in Louisiana [dissertation]. Southeastern Louisiana University. 2015.

25. Stelzner MA. How to Write a White Paper: A White Paper on White Papers. Stelzner Consulting. 2010.

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