
The Economics of Defensive Medicine and No-Fault Patients' Compensation Systems

- Alabama Medicaid -

Report to Patients For Fair Compensation

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Executive Summary (Alabama Medicaid)

- The goal of this study is to estimate the Alabama Medicaid overall and Alabama State-specific savings potential of no-fault Patients' Compensation Systems (PCSs) with a special focus on defensive medicine.
- Bioscience Valuation BSV GmbH is a specialized company engaged in healthcare economic and financial modeling.

Costs of Defensive Medicine

- Based on a survey by the Gallup organization (base case), the annual cost of defensive medicine to Alabama Medicaid is estimated at \$1.3 billion (2015). Costs are likely in a range of \$700 million to \$1.7 billion.
- Of these costs, Alabama State's share of expenses (based on the Federal Medical Assistance Percentage) is estimated at \$390 million (2015, base case); costs are likely in the range of \$220 million and \$520 million.

Savings Potential

- If an effective no-fault PCS were to be enacted, and assuming a slow change in physicians' defensive medicine behavior, first year savings could be \$60 million; that number may grow to annual savings exceeding \$770 million when physicians have reduced their defensive medicine practices significantly. The corresponding savings for Alabama State's share of Medicaid are \$20 million and \$240 million, respectively.
- Assuming slow adoption (physicians reduce their practice of defensive medicine over five years), savings over a ten-year horizon could be in the order of \$6.6 billion for overall Alabama Medicaid and \$2 billion for Alabama State's share.
- Assuming fast adoption (physicians reduce their defensive medicine practices immediately after PCS implementation), savings over a ten-year horizon could reach \$8 billion for overall Medicaid and \$2.4 billion for Alabama State's share.
- Two major uncertainties are the percentage of healthcare costs attributable to defensive medicine and the degree to which physicians would change their defensive practices if a PCS were implemented.
- The percentage of healthcare costs that can be attributed to defensive medicine has been varied between 15% and 35% (base case: 26% based on the Gallup survey). The resulting potential annual savings are \$440 million to \$1 billion (2019 and beyond). For Alabama State's share, these savings are \$140 million to \$320 million.
- Once a PCS were to be enacted, it is assumed that physicians would reduce their defensive behavior by 30% to 70%. The resulting potential annual savings range from \$460 million to \$1.1 billion (2010 and beyond). These savings range from \$140 million to \$330 million for Alabama State's share of Medicaid.

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Important Note for Users of This Report

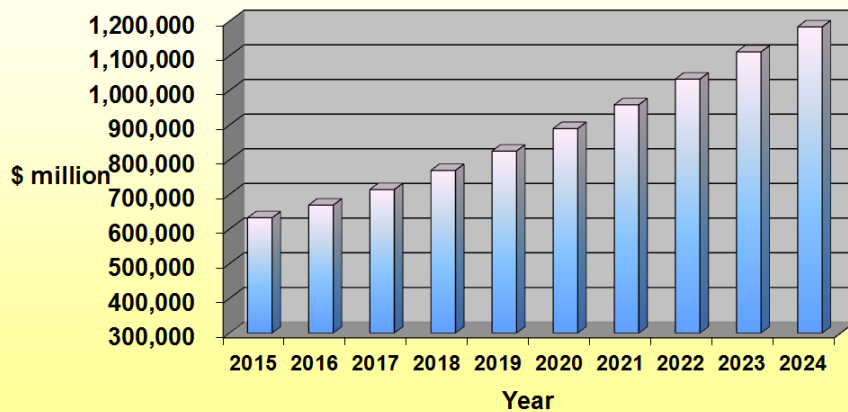
- This report is based on projections of future medical malpractice claims, the practice of defensive medicine, and the potential effects of implementing no-fault Patient's Compensation Systems. All statements regarding future developments in the healthcare environment as well as expectations, beliefs, goals, plans or prospects that are the basis for these projections should be considered forward-looking. Readers are cautioned that actual results may differ materially from Bioscience Valuation's estimates or projections due to a variety of important factors, including, without limitation, the risks and uncertainties associated with:
 - future changes in malpractice claims,
 - future changes in the practice of defensive medicine,
 - physicians' response to a Patients' Compensation System if implemented,
 - patients' willingness to file legitimate claims if a Patients' Compensation System were enacted.
- Bioscience Valuation does not warrant the results in its report to Patients For Fair Compensation, and is not responsible for Patients For Fair Compensation's reliance upon its report, nor for the actions of any third party with whom Patients For Fair Compensation elects to share Bioscience Valuation's report. Bioscience Valuation's services have been engaged only by Patients For Fair Compensation, and its sole responsibility is to provide the services it agreed to provide to Patients For Fair Compensation. Bioscience Valuation makes no representations and no warranties, and accepts no responsibility or liability to any party for any decision to use or rely upon the report by Bioscience Valuation.

Alabama Medicaid: Cost of Defensive Medicine

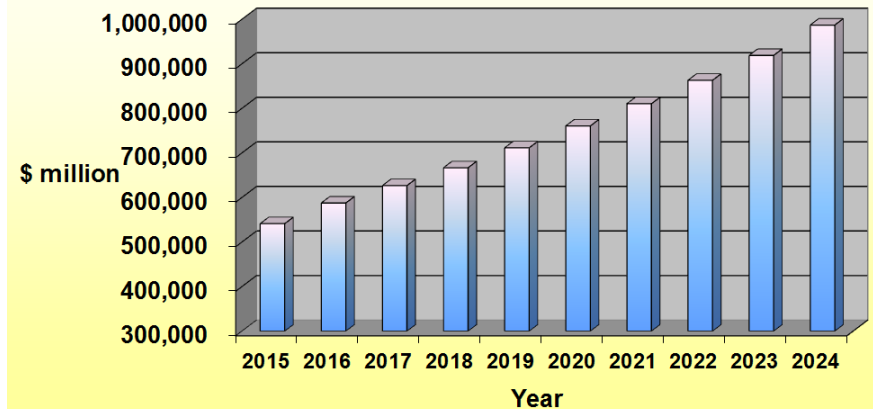
The Issue: Escalating Healthcare Costs & Defensive Medicine (USA)

- Healthcare costs in the USA are escalating. According to CMS, projected healthcare expenditures for Medicare and Medicaid for the year 2024 are \$1.18 trillion and \$987 billion, respectively¹.
- The corresponding expected CAGRs² of healthcare expenditures are 6.5% for Medicare and 7.4% for Medicaid, well above the annual 2.4% CPI average over the past ten years³.
- One important factor driving healthcare expenditures is the practice of defensive medicine. Therefore, initiatives that would decrease defensive medicine would also decrease healthcare costs.
- The goal of this study is to quantify potential savings if a Patients Compensation System that could diminish defensive medicine were to be implemented in the USA.

Projected Medicare Expenses



Projected Medicaid Expenses



¹ <http://cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html>

² CAGR = Compound Annual Growth Rate

³ <http://www.bls.gov/cpi/cpifiles/cpiait.txt>

Defensive Medicine: Cost Estimates (USA)

Estimates of defensive medicine costs vary significantly:

- M.M. Mello et al. estimate defensive medicine costs at **\$45.59 billion** per year (2008 dollars). The authors recognize, however, that this estimate is highly uncertain¹.
- D.P. Kessler and M.B. McClellan conclude that tort reform could reduce medical costs by 5% - 9%; using the 2012 number of the National Health Expenditures (\$2,793 billion), savings could be between **\$140 billion** and **\$251 billion**².
- The Department of Health and Human Services calculated that between **\$60 billion** and **\$108 billion** could be saved if defensive medicine could be eliminated³.
- PriceWaterhouseCoopers (PWC) estimates the costs of liability and defensive medicine: PWC's estimate would result in a **\$279 billion** figure if 2012 National Healthcare Expenditures are taken as a proxy⁴.
- In another 2008 study PWC quantifies the costs of defensive medicine to **\$210 billion**⁵.
- The National Center for Policy Analysis estimates 2005 costs of defensive medicine to be in the range of **\$100 billion** to **\$178 billion**⁶.
- Studdert et al. conclude, based on an extensive survey, that 93% of physicians practice defensive medicine⁷.
- In line with Studdert et al., Jackson Healthcare finds that 92% of the those physicians who completed a survey (3,070 respondents) practice defensive medicine⁸. On average, physicians attribute 35% of overall healthcare costs to defensive medicine⁸. Based on the 2012 figure of National Health Expenditures, cost of defensive medicine would be **>\$800 billion**.
- In an earlier study, the Gallup organization found that physicians attribute 26% of overall healthcare costs to defensive medicine⁹. Using the 2012 National Health Expenditures figure, **\$614 billion** spending is due to defensive medicine.

¹ M.M. Mello, A. Chandra, A.A. Gawande, D.M. Studdert (2010): National Costs of the Medical Liability System, Health Affairs 9: 1569-1577.

² D.P. Kessler, M.B. McClellan (1996): Do Doctors Practice Defensive Medicine? Quarterly Journal of Economics, May 1996.

³ US Department of Health and Human Services (2003): Addressing the New Health Care Crisis; cited at: The Truth about "Defensive Medicine", American Association for Justice, September 2009.

⁴ PWC Report (2008): The Factors Fueling Rising Healthcare Costs 2006, page 7.

⁵ PWC Report (2008): The Price of Excess – Identifying Waste in Healthcare Spending, pages 1 and 6.

⁶ National Center for Policy Analysis (2007), retrieved from www.medscape.com

⁷ D.M. Studdert, M.M. Mello, W.M. Sage, C.M. DesRoches, J. Peugh, K. Zapert, T.A. Brennan (2005): Defensive Medicine Among High-Risk Specialist Physicians in a Volatile Malpractice Environment, JAMA 293: 2609-2617.

⁸ Jackson Healthcare (May 2011): Physicians' on Healthcare Reform Quantifying Defensive Medicine: An Online Quantitative Research Study; only the Personal Health Care figure has been used to exclude administrative expenses (however, the estimate still includes costs such as dental & residential).

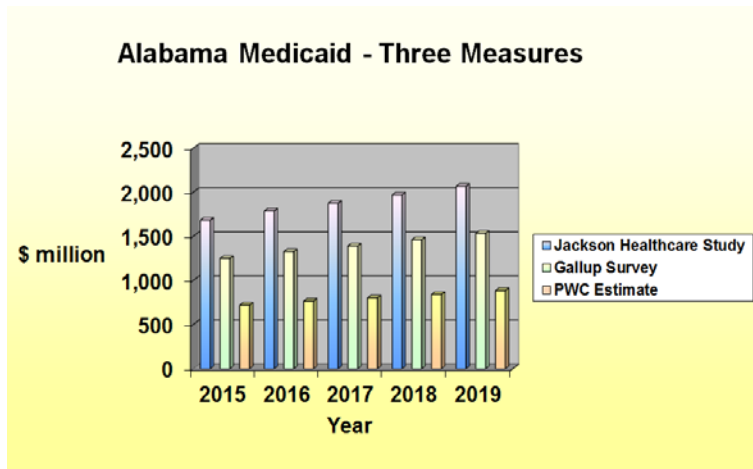
⁹ Gallup/Jackson Healthcare press release Feb. 19, 2010: New Gallup poll quantifies US physician opinions on the scope of defensive medicine; Jackson Healthcare retained Gallup for the study; only the Personal Health Care figure has been used for the estimate.

Expected Cost of Defensive Medicine to Medicaid (Alabama Overall and State's Share): Three Measures

Approach

- The Jackson Healthcare figure (35% of healthcare spending can be attributed to defensive medicine) is used as a 'high' estimate, the PWC figure serves as the basis for a 'low' estimate (15%), and the Gallup result (26% of healthcare spending can be attributed to defensive medicine) as midpoint. All further calculations are based on the Gallup figure.
- Alabama Medicaid medical health expenditures, derived from CMS data, serve as basis for the calculation. Irrelevant cost categories are subtracted (e.g., dental care).
- Health expense projections have been fitted by expected growth, taking into account additional expected costs due to the National Health Care Reform and population growth. Federal Medical Assistance Percentage (FMAP) is considered for State share expenses.
- The development of Alabama's population has been forecasted based on data from the Center for Business and Economic Research.

Results



- The Jackson Healthcare study, scaled to Alabama, suggests defensive medicine costs to Alabama Medicaid may be in the order of **\$1.7 billion** (2015); that number may grow to **\$2.1 billion** (2019). For Alabama State's share, those costs are **\$520 million** and **\$640 million** (not shown).
- The Gallup survey, scaled to Alabama, indicates that defensive medicine may attribute as much as **\$1.3 billion** to Alabama's Medicaid (**\$390 million** to State's share); in 2019 those figures may grow to over **\$1.5 billion** (**\$470 million** to State's share).
- Over a ten-year horizon, the accumulated defensive medicine costs may be in the order of **\$16 billion**; For Alabama State's share, those costs may reach **\$4.9 billion**.
- The low estimate yields 2015 defensive medicine costs of over **\$720 million** and **\$220 million** for Alabama State's share.

Savings through Reduced Practice of Defensive Medicine (Alabama Medicaid: Overall and State's Share)

PCS: Savings through Reduced Practice of Defensive Medicine (Alabama Medicaid)

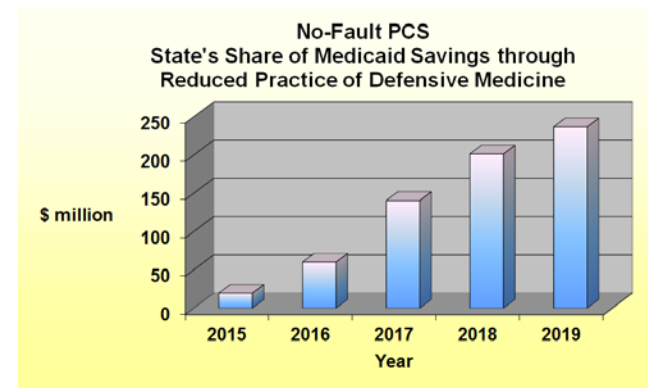
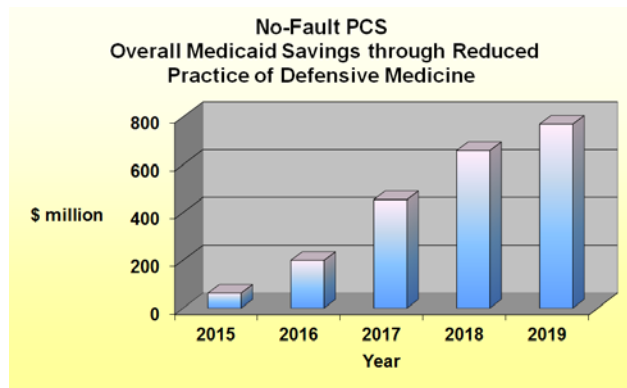
Assuming a Patient Compensation System (PCS) that effectively prevents litigation is implemented in Alabama, Medicaid can expect significant savings from reduced practice of defensive medicine.

Approach

- Cost of defensive medicine estimate is based on the Gallup survey.
- The no-fault PCS reduces the practice of defensive medicine by 50% after full adoption (base case assumption).
- Physicians will slowly reduce their defensive medicine behavior; the model assumes that it would take five years until full adoption (S-shaped adoption curve).

Results

- A no-fault PCS may produce overall Medicaid savings of over **\$63 million in the first year** of implementation, and of **\$770 million** annually after five years. For Alabama State's share of Medicaid, these savings are almost **\$20 million** in the first year and **\$240 million** annually after 5 years.
- Assuming immediate adoption, overall Medicaid savings could be over **\$625 million** in 2015 and almost **\$8 billion** aggregated over ten years (not shown). For Alabama State's share of Medicaid, these savings are more than **\$190 million** in 2015 and **\$2.4 billion** over ten years.



Defensive Medicine Costs & Savings (Alabama Medicaid) - Sensitivity Analyses -

Sensitivity Analyses of Defensive Medicine: Costs and Savings through Reduced Practice of Defensive Medicine (Alabama Medicaid)

Expected savings depend, to a large extent, on two uncertain variables:

- the percentage of healthcare costs that can be attributed to the practice of defensive medicine,
- the reduction of defensive medicine behavior once a Patient's Compensation System has been enacted.

Concerning healthcare costs that can be attributed to defensive medicine, estimates for the USA range from \$100 billion to \$700 billion. Although surveys consistently report that over 90% of physicians practice defensive medicine, and that physicians believe 25% to 35% of healthcare practices are defensive, critics argue that those estimates may be biased and subject to significant respondent error.

Concerning a potential reduction of defensive medicine behavior critics note that

- one motivation of practicing defensive medicine is income generation rather than concerns related to potential litigation;
- another motivation may be truly related to maximizing patient benefit (e.g., by using additional diagnostic procedures); those additional procedures may be classified as being "defensive" although they serve the patient.

Therefore, it appears unlikely that the practice of defensive medicine can be completely eliminated.

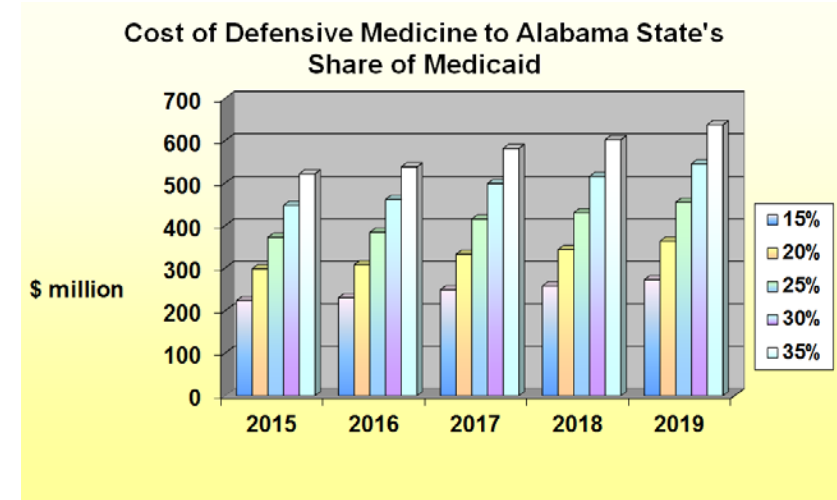
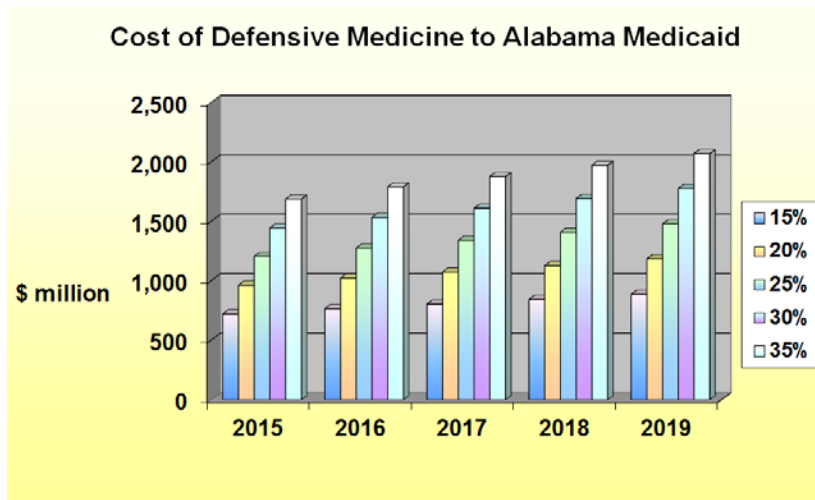
Approach

- The two most uncertain variables, the percentage of healthcare costs that can be attributed to the practice of defensive medicine and the decrease of defensive medicine behavior once a Patient's Compensation System has been implemented are systematically varied should those variables have lower or higher values than assumed in the base case.
- Concerning savings it is assumed that physicians reduce their practice of defensive medicine by 50% only, and that it will take 5 years until the full savings potential has been reached.

Cost of Defensive Medicine at Different Percentages of Healthcare Costs Attributable to Defensive Medicine (Alabama Medicaid)

Costs

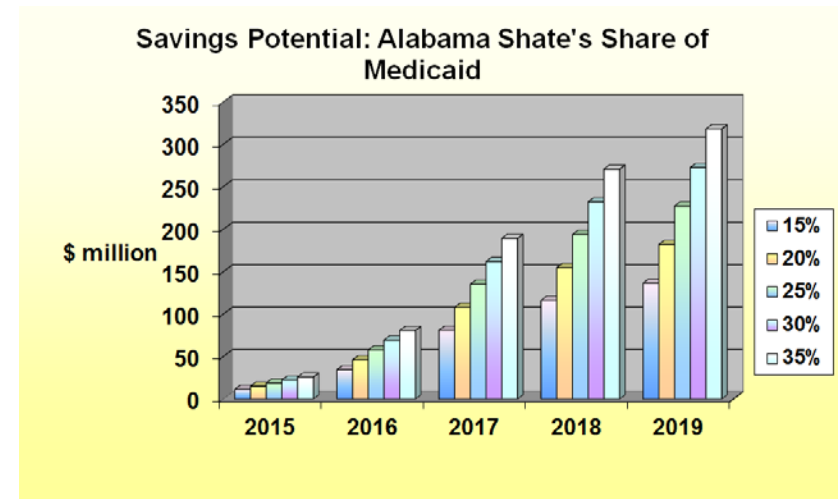
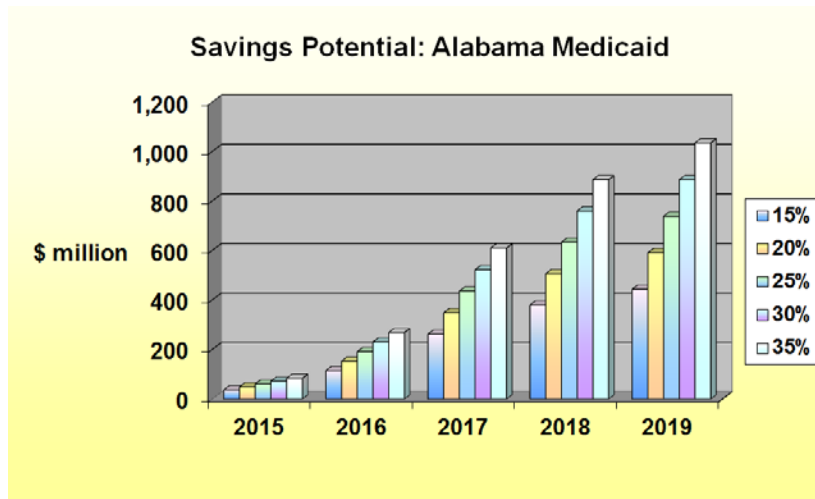
- According to Gallup, 26% of healthcare expenses are due to the practice of defensive medicine. The sensitivity analyses assume that between 15% and 35% of relevant healthcare expenditures can be attributed to defensive medicine.
- Based on the analysis, Medicaid costs attributable to defensive medicine range from **\$720 million to \$1.7 billion (2015)**. Of these costs, Alabama State's share range from **\$220 million to \$520 million**.
- Even using the **most conservative** estimate (only 15% of healthcare expenses are due to defensive medicine), the accumulated costs could **exceed \$9.1 billion** over a ten-year horizon. These costs are equivalent to **\$2.8 billion** for Alabama State's share.



Savings Potential over a Range of Healthcare Costs Attributable to Defensive Medicine (Alabama Medicaid)

Savings Potential

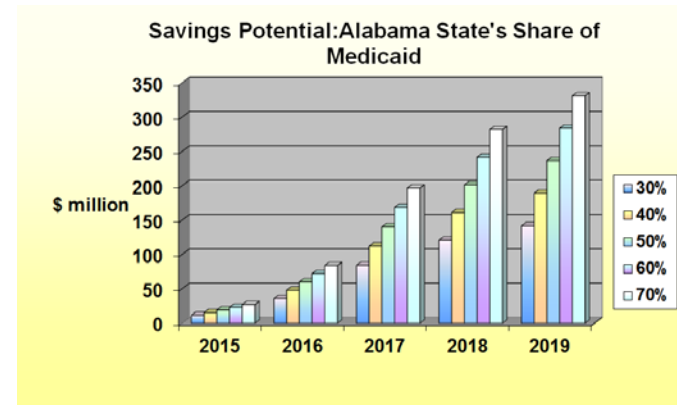
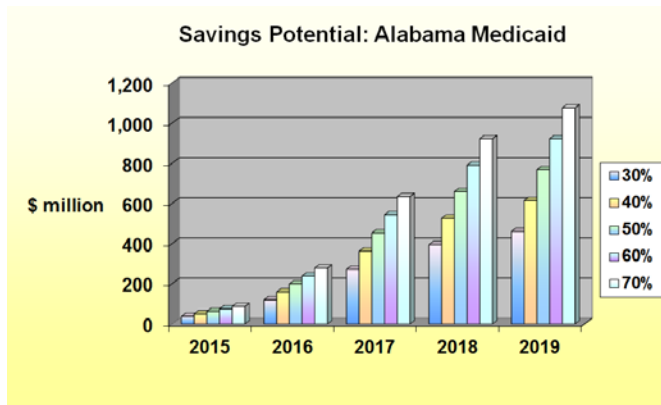
- Using the same range of percentages for healthcare expenditures attributable to defensive medicine (15% to 35%), potential savings for Alabama Medicaid if a PCS were to be implemented are **\$440 million to over \$1 billion** (in 2019, after full adoption). For Alabama State's share, these potential savings are **\$140 million to \$320 million** (in 2019).
- Applying the **most conservative** estimate (only 15% of healthcare expenses are due to defensive medicine) and assuming conservatively a slow change in the practice of defensive medicine (over 5 years), the accumulated savings could be in the order **\$3.2 billion** over a ten-year horizon. For Alabama State's share, these accumulated savings could be in the order of **\$1.2 billion** over a ten-year horizon.



Savings Potential Assuming Different Degrees of Reduction in Defensive Medicine Practice after Enacting a PCS (Alabama Medicaid)

Savings Potential

- It is not known how much physicians would reduce their practice of defensive medicine if a comprehensive PCS similar to the Swedish system were to be implemented. There have been some regional efforts to enact no-fault compensation programs¹. For example, Virginia implemented its 'Birth Injury Fund' and Georgia its 'Neurological Injury Compensation Association'. Both programs have reduced malpractice insurance premiums, however, detractors note that the programs are very narrow and provide little actual compensation. Families can, and do, file malpractice claims as an additional remedy. Therefore, those attempts can hardly provide guidance by how much physicians would reduce defensive medicine behavior if a differently designed PCS were enacted.
- It is assumed that a system that resembles the Swedish PCS can decrease defensive medicine by 50%. In the sensitivity analysis, values are varied between 30% and 70%.
- Within the range of investigated values (30% to 70% decrease of defensive medicine practice), potential savings for Alabama Medicaid in year 2019 (slow change of physician practice) are **\$460 million to \$1 billion**. For Alabama State's share of Medicaid, these potential savings are **\$140 million to \$330 million** (2019).
- Using the **most conservative** estimate (only 30% reduction of defensive medicine practice) and further assuming that physicians change their behavior slowly (over 5 years), the accumulated combined savings could reach **\$4 billion** over a ten-year horizon. This value corresponds to over **\$1.2 billion** for Alabama State's share.



¹ H. Huang, F. Soleimani (2010): What Happened to No-Fault? The Role of Error Reporting in Healthcare Reform, Hous. J. Health Law & Policy 10: 1-34.

Discussion & Conclusions (Alabama Medicaid)

Discussion & Conclusions I (Alabama Medicaid)

Defensive Medicine

- Annual cost of defensive medicine to Alabama Medicaid may range from almost \$700 million to \$1.7 billion, depending on the study chosen to calculate the estimate. For Alabama State's share of Medicaid, annual costs may range from \$220 million to \$520 million. When a recent survey conducted by the Gallup organization is used, current cost of defensive medicine to Alabama Medicaid is in the order of \$1.3 billion per year. For Alabama State's share, this estimate results in defensive medicine costs of \$390 million per year.
- The analysis suggests that a no-fault PCS that resembles the Swedish system and that is able to prevent litigation has the potential to produce significant savings due to reduced defensive medicine practices.
- Conservatively assuming a slow, gradual change in defensive physician behavior, annual savings of overall Medicaid could already be over to \$60 million in the first year and grow to \$770 million in the fifth year after enacting a PCS. Over a ten-year horizon, aggregate savings in the order of \$6.6 billion could be realized.
- For Alabama State's share of Medicaid, annual savings could be close to \$20 million in the first year and grow to \$240 million in the fifth year after enacting a PCS. Over a ten-year horizon, aggregate savings in the order of \$2 billion could be realized.
- Two highly uncertain variables are i) the amount of healthcare dollars spent on defensive medicine, and ii) by how much defensive medicine practices would decline once a PCS has been enacted.
- Detractors note that high defensive medicine estimates based on physician surveys may be biased, although the reason for the potential bias remains unclear.

¹ <http://www.bls.gov/oco/ocos074.htm#emply>; ² Jackson Healthcare May 24, 2011: Survey debunks myth that physicians make big bucks on medical orders.

Discussion & Conclusions II (Alabama Medicaid)

- Another motivation to practice defensive medicine may be truly related to maximizing patient benefit (e.g., by using additional diagnostic procedures to gain diagnostic certainty); these 'defensive' practices will not be completely eliminated.
- The two major uncertainties have been investigated in a sensitivity analysis:
 - 1) Varying the percentage of healthcare costs attributable to defensive medicine between 15% and 35% (base case: 26% based on the Gallup survey) suggests annual Medicaid savings potentials after full adoption (year 2019) that range from \$440 million to \$1 billion. For Alabama State's share of Medicaid this suggests annual saving potentials after full adoption that range from \$140 million to \$320 million.
 - 2) Changing the estimate by how much physicians would decrease defensive medicine practices from 30% to 70% (base case: 50%) suggests yearly savings potentials for Alabama Medicaid that range from \$460 million to \$1.1 billion. This corresponds to yearly savings potentials for Alabama State's share of Medicaid that range from \$140 million to \$330 million.
- In summary, a PCS, once enacted in Alabama, may reduce overall Alabama Medicaid costs by \$440 million to more than \$1 billion annually. For Alabama State's share of Medicaid, these cost reductions may be in the range of \$140 million to over \$330 million annually.