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TECHNICAL REPORT

**FEDERAL HEALTH CARE REFORM 2009:  
START-UP CAPITAL COSTS FOR HEALTH  
CARE CO-OPS AND A PUBLIC PLAN**

Prepared by a joint work group of the  
American Academy of Actuaries and the  
Society of Actuaries

October 30, 2009

## FURTHER INFORMATION

This report was prepared by a joint work group of the Society of Actuaries' Health Section Council and the American Academy of Actuaries' Health Practice Council. The joint work group was created to provide detailed analysis of the capital requirements that would be required for either a public plan option or series of health insurance cooperatives, which are both being discussed as part of ongoing health care reform efforts.

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## EXECUTIVE SUMMARY

The American Academy of Actuaries and the Society of Actuaries established a joint work group to evaluate the start-up capital requirements for health care cooperatives (co-ops) and for a government-owned and operated insurance program (public plan) that would compete with existing health insurance plans. Proposals to include co-ops and/or a public plan are included in health care reform legislation currently under congressional consideration. The work group developed a model that projects amounts of start-up capital required over a 10-year period under various scenarios (the projection model).

Start-up capital includes the pre-operational capital required to establish a co-op or public plan and the risk capital that a plan must maintain to support its financial obligations to its members. The work group's analysis reflects co-op/public plan activities during the first 10 years of development and operation with a focus on start-up capital requirements, and as such, does not include the impact of different reform provisions regarding subsidies, pricing requirements, or numerous other provisions that are included in the health care reform proposals under consideration.

The projection model produces estimates of capital requirements for health care co-ops and public plans that compete with private-sector health plans on a level playing field. A level playing field means that health care co-ops or a public plan would operate according to the same rules that apply to private-sector plans and would need to perform most or all of the same functions that private-sector plans perform. Specifically, it means that both private-sector health plans and health care co-ops or a public plan would be subject to the same rules regarding underwriting, rating restrictions, regulatory reporting, consumer protections, solvency requirements, and other regulatory oversight.

One of the most critical assumptions with respect to a level playing field is the financial relationship co-ops or a public plan would have with health care providers. While legislation has been considered that would establish a public plan with provider rate-setting authority (e.g., provider fees could be set at 105 percent of the Medicare fee schedule), legislation currently under consideration would require a government-sponsored entity negotiate with providers as private health insurance organizations do. A government-sponsored plan (whether a co-op or a public plan) with regulatory rate-setting authority cannot be assumed to be competing on a level playing field with private organizations. Accordingly, it was assumed, for the purposes of this study, that health care co-ops or a public plan would negotiate reimbursement rates with health care providers.

A significant exception to the level playing field assumption is access to capital. It was assumed that health care co-ops and a public plan would receive initial start-up capital infusions from the federal government and continue to receive federal grants when premiums and investment income are insufficient to produce the capital needed for ongoing operations. This is a significant benefit not available to the private sector.

Risk-capital requirements were projected under state solvency standards for statewide health care co-ops (one for each state) and for a national public plan with regional operations. The following scenarios were modeled:

- Low initial enrollment (2 million people enrolled nationwide in the first year of operation) that remains level versus high initial enrollment (20 million people enrolled nationwide in the first year of operation) that continues to grow.
- Accurate pricing (generating assumed 3 percent contribution to surplus) versus pricing that generates an initial loss of 5 percent (underpricing) and pricing that generates an initial contribution to surplus of 5 percent (overpricing).

In all scenarios, health care co-ops and a public plan are assumed to maintain prudent amounts of risk capital, defined as 250 percent of the amount of the minimum capital (termed the company action level) promulgated by the National Association of Insurance Commissioners (NAIC).

Risk sharing mechanisms, such as risk adjusters, reinsurance or risk corridors, may affect capital requirements; however, we believe the overall impact is immaterial. Cash inflows in one year may be offset by cash outflows in another. In addition, it is reasonable to interpret any risk-sharing payments from the federal government, as opposed to those from other insurers, as merely another type of capital infusion from the government. Therefore, we excluded all potential risk-sharing mechanisms from our analysis.

Note that while this report contains some qualitative comments with respect to the requirements for a successful health care co-op or public plan, no position is taken regarding the likelihood either would be successful. From a financial perspective, a successful health care co-op or public plan might be defined as one that achieves sufficient enrollment and pricing to be financially self-sustaining while maintaining adequate capital.

The following tables summarize the start-up capital infusions needed for health care co-ops (Table 1A) and a public plan (Table 1B) during the first 10 years of development and operation under the various projection scenarios:

<b>Table 1A</b>						
<b>Capital Required To Be Infused from Outside Sources During First 10 Years</b>						
<b>HEALTH CARE CO-OPS (\$ In Billions)</b>						
	<b>Low Enrollment</b> (Nationwide enrollment of 2 million people (constant from 2013-2019))			<b>High Enrollment</b> (Nationwide enrollment of 20 million (2013) growing to 40 million (2019))		
	<b>Pre-Operational Capital<sup>a</sup></b>	<b>Risk Capital<sup>b</sup></b>	<b>Total Capital</b>	<b>Pre-Operational Capital<sup>a</sup></b>	<b>Risk Capital<sup>b</sup></b>	<b>Total Capital</b>
<b>Accurate Pricing</b>	\$0.8	\$1.6	\$2.4	\$0.8	\$15.6	\$16.4
<b>Underpricing</b>	\$0.8	\$3.6	\$4.4	\$0.8	\$44.8	\$45.6
<b>Overpricing</b>	\$0.8	\$1.3	\$2.1	\$0.8	\$12.8	\$13.6
<sup>a</sup> Pre-operational capital infusions are assumed to be interest-free loans from the federal government; pre-operational capital amounts are shown prior to any potential loan repayments. <sup>b</sup> Risk capital infusions are assumed to be grants from the federal government.						

<b>Table 1B</b>						
<b>Capital Required To Be Infused from Outside Sources During First 10 Years</b>						
<b>PUBLIC PLAN (\$ In Billions)</b>						
	<b>Low Enrollment</b> (Nationwide enrollment of 2 million people (constant from 2013-2019))			<b>High Enrollment</b> (Nationwide enrollment of 20 million (2013) growing to 40 million (2019))		
	<b>Pre-Operational Capital<sup>a</sup></b>	<b>Risk Capital<sup>b</sup></b>	<b>Total Capital</b>	<b>Pre-Operational Capital<sup>a</sup></b>	<b>Risk Capital<sup>b</sup></b>	<b>Total Capital</b>
<b>Accurate Pricing</b>	\$0.5	\$1.4	\$1.9	\$0.5	\$14.4	\$14.9
<b>Underpricing</b>	\$0.5	\$3.3	\$3.8	\$0.5	\$41.0	\$41.5
<b>Overpricing</b>	\$0.5	\$1.2	\$1.7	\$0.5	\$11.9	\$12.4
<sup>a</sup> Pre-operational capital infusions are assumed to be interest-free loans from the federal government; pre-operational capital amounts are shown prior to any potential loan repayments. <sup>b</sup> Risk capital infusions are assumed to be grants from the federal government.						

### Major Conclusions:

- (1) Capital requirements are most sensitive to the number of co-op/public plan members enrolled and any differences between pricing assumptions and actual claims and expenses experienced. Although not shown in the tables, capital requirements are also sensitive to the health care costs per member.
- (2) Substantial capital is required to fund health care co-ops or a public plan over the first 10 years of development and operations. Under the limited scenarios modeled, start-up capital requirements ranged from approximately \$1.7 billion to \$45.6 billion.
- (3) Start-up capital is required to cover pre-operational start-up expenses and to meet prudent risk capital standards until co-ops or a public plan generate needed capital growth from operational earnings. Most of the start-up capital required in the scenarios tested is to meet prudent risk capital solvency standards. In the underpricing scenarios, capital infusions are needed in higher amounts and over a longer duration due to operating losses experienced.
- (4) NAIC solvency standards for health insurance organizations are based mainly on health care claims. Therefore, risk capital requirements increase with membership and with member health care costs. As membership grows, risk capital requirements grow. Even if membership remains level, risk capital requirements grow due to the effect of medical trend on health care costs.
- (5) Start-up capital requirements for a national public plan operating on a level playing field with private sector plans are likely to be similar to those for all health care co-ops in total with any differences related mainly to assumed administrative efficiencies and slightly lower provider reimbursement rates for the public plan.

In an effort to serve as an ongoing resource to policymakers and the public, the work group will consider, as appropriate, requests to run additional iterations and scenarios of the projection model.

### CAVEATS

Projection models are inherently complex, and future results will almost certainly differ from the modeled assumptions, often materially. This is especially true for a model that attempts to reflect legislation that is currently being debated and revised. The work group cautions readers to be cognizant of the financial uncertainties that surround new and untested insurance entities such as those discussed in this report.

It is extremely difficult to develop premium rates in advance for an organization with no cost history and with unknowns such as:

- (a) The number of enrollees and actual risk characteristics of the population that will ultimately be attracted by health care co-ops or a public plan;
- (b) The regulatory provisions with which health care co-ops or a public plan must comply, including standardized levels of benefits, underwriting restrictions, and rating limitations;
- (c) The action taken by private-sector health insurers in response to health care co-ops or a public plan and the insurance exchanges.

Accordingly, the work group developed and summarized a limited number of scenarios which it considered to provide a reasonable range of possible outcomes. Readers of this report are cautioned against accepting any one scenario as the most likely outcome. Also, note that as specific details replace the modeled assumptions, actual results may fall outside the range of outcomes presented in this report.

As is further outlined in Exhibit D of this report, the work group relied on its understanding of bills under consideration during the development of this report and the work of those noted with respect to health care reform legislation.

## INTRODUCTION

### A. Background

The Senate Health, Education, Labor and Pensions Committee's *Affordable Health Choices Act* and the House of Representatives' *Affordable Health Care for America Act* would both establish a public insurance program owned and operated by the government that would compete with existing health insurance organizations. Under these proposals, the public plan would adhere to the same requirements as private-sector plans, including benefit levels, provider networks, issue and rating rules, solvency standards, and cost-sharing. These pieces of legislation vary on the issue of provider payment rates, either requiring the public plan to negotiate rates with providers or establishing the public plan at some percentage of Medicare rates.

The Senate Finance Committee's *America's Healthy Future Act of 2009* would authorize loans and grants to establish the Consumer Operated and Oriented Plan (co-op) program, which would create non-profit member-run health insurance companies that serve individuals in one or more states. Such member-run health insurance companies would compete with and be subject to the same requirements as existing health insurance organizations, but would be exempt from federal income tax. The co-op program has been suggested as an alternative to the public plan.

The American Academy of Actuaries' Health Practice Council and the Society of Actuaries developed a model to project the capital requirements of health care co-ops and a public plan under a variety of potential scenarios. This report describes the model, the key drivers of capital requirements, and the amounts of capital required to support health care co-ops or a public plan until they become self-sustaining under those scenarios.

### B. Purpose

This report is intended to be used by members of Congress, their staffs, and the public as part of ongoing deliberations regarding the various health care reform proposals under consideration.

### C. Scope

The results from our projection model that are presented in this report include the start-up risk capital and the start-up operating capital required to support network-based health care co-ops and a public plan. A health care co-op or public plan that contracts with health care provider systems to deliver care to its members is considered network-based.

Risk capital is needed at start-up and on an ongoing basis to mitigate the risk that insurance claims and expenses will exceed insurance premium revenues, jeopardizing financial solvency. In other words, risk capital reduces the probability that an insurance organization will not have enough funds to meet its financial obligations. Based on historical experience analyzed by actuaries, the NAIC developed minimum capital standards that vary based upon the amount and types of risks assumed by an insurance organization. These standards, called risk-based capital (RBC) standards, are the basis for the risk capital requirements produced by our model.

Operating capital is needed to cover start-up expenses before the entity's premium and investment income revenues meet or exceed all of its benefit costs and functional expenses. Operating capital must also be maintained on an ongoing basis to cover operational costs during other periods when the entity's revenues do not cover all of its benefit costs and functional expenses. Exhibit B lists the operational functions that should be performed by health care co-ops or a public plan.

This report does not address the following:

- Capital requirements of health insurance exchanges or purchasing organizations that do not bear insurance risks;
- Capital requirements of public programs such as Medicare or Medicaid that do not compete with private insurance organizations;
- Subsidies to small employers or to people with low incomes;
- The effects of health reform initiatives, including the creation of co-ops or a public plan, on future health care costs;
- The effects of new benefit requirements that may increase or decrease insurance costs;
- The degree of effectiveness of any risk adjustment mechanisms that may be included in health care reform legislation;
- Additional costs to individuals, groups, or insurance companies attributable to a surcharge on policies referred to as Cadillac benefit plans;
- The effects of health care co-ops or a public plan on the enrollment in or margins generated by private-sector plans, and the consequent effects on local, state, and federal tax revenues; and
- The effect of the private-sector's response to the inclusion of health care co-ops or a public plan.

#### **D. Level Playing Field**

The projection model results presented in this report are based upon an assumption that health care co-ops and a public plan would compete with private sector plans on a level playing field. A level playing field means that health care co-ops or a public plan would operate according to the same rules that apply to private-sector health insurance plans and would need to perform most or all of the same functions that private-sector plans perform. Specifically, a level playing field means that both private-sector health plans and health care co-ops or a public plan would be subject to the same rules regarding:

- Acceptance of all applicants (guaranteed issue);
- Preexisting condition exclusion restrictions;
- Benefit/coverage mandates;
- Pricing parameters, including minimum loss ratio requirements, if any, and rate variation restrictions;
- State and local taxes, licenses, and fees;
- State guarantee fund assessments;
- Risk adjustment and other risk-sharing mechanisms;
- Marketing, including participation in health insurance exchanges;
- Data gathering and reporting;
- Consumer protection and grievance programs;
- Competition to provide health benefits to employees of local, state, and federal government agencies;
- Minimum risk capital and other aspects of financial solvency;
- Regulatory oversight;
- Negotiated reimbursement rates with health care providers.

We did make one significant assumption departure from the level playing field concept, which is that federal grants are available to fund required capital at any time during the 10-year projection period.



## METHODOLOGY AND ASSUMPTIONS

Various health care reform bills have been proposed, amended, and continue to be debated by the U.S. Congress. Due to this fluid environment, the projection model accommodates a wide array of assumptions that allows it to be adapted to changing circumstances.

This section of the report describes the general methodology and assumptions included in the projection model. The work group modeled the following types of health care co-ops and public plan:

- (i) Network-based health care co-ops organized and operating on a statewide basis,
- (ii) A national public plan with regional operations.<sup>1</sup>

### A. Methodology

The following steps outline the methodology employed in the development of start-up capital for the health care co-ops and a public plan:

- (1) **Define populations by broad risk categories.** Potential enrollment populations of health care co-ops and a public plan were defined by broad risk category, based on current insurance status and health status (standard risks versus substandard risks). In addition it was assumed that people eligible for Medicaid could enroll in plans offered through the health insurance exchanges (private sector, health care co-op or public plan offerings)

Under an accurate pricing scenario, the model assumes premiums received are consistent with the underlying risk characteristics of the enrolled population. However, selection (either positive or adverse) experienced by a health care co-op or public plan may impact capital requirements. This selection might not be fully mitigated by risk-sharing mechanisms. Overall selection may arise from the expanded individual and small group market and specific plans may attract a disproportionate share of healthy or unhealthy people. The projection model accommodates selection potential. The modeled overpricing and underpricing scenarios reflect favorable and unfavorable selection (respectively) via assumptions described below as *Deviations from the Target Medical Loss Ratio*. With that said, the underpricing scenario could underestimate the impact if adverse selection is severe and not mitigated through risk-sharing mechanisms.

- (2) **Define start-up capital requirements.** The projection model was developed to quantify the following with respect to the start-up capital requirements for a health care co-op or public plan:
  - (a) *Risk-based capital.* Risk-based capital reflects NAIC regulatory requirements designed to protect insurer solvency. Risk capital is the capital required to mitigate the insolvency risk associated with insurance claims and expenses exceeding insurance income. (see Exhibit A for more detailed definitions). To avoid regulatory sanctions, private-sector health insurance organizations target their capital levels well above the minimum defined by the NAIC RBC formula. The projection model uses a scaled-down version of the formula to estimate this minimum (called the company action level) for a health care co-op or public plan. All scenarios incorporate a 250 percent multiple of the company action level to define the prudent level of risk capital required at any point in time.
  - (b) *Operating capital.* Operating expenses are defined as marketing, provider and medical management, account and member administration, and corporate services. See Exhibit B for more detail on the operational functions performed by health plans.

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<sup>1</sup> Regions for the public plan are assumed to be the same geographic regions as those used to vary Medicare physician payment rates.

- (c) *Pre-operational start-up expenses* (see Exhibit A for more detail). In addition to the above risk and ongoing operating capital needs, an amount of money would be required to develop a health care co-op or public plan. Staff must be hired, regulatory approvals obtained, and provider contracts negotiated. In addition, complex information systems needed for such items as paying claims, billing and collecting premiums, accounting and financial reporting, and actuarial or other analyses, must be developed, purchased, or leased. Preoperational start-up expenses can be minimized by leasing or outsourcing much of the required systems and other administrative infrastructure initially. The model assumed that approach for all scenarios.

The amount of start-up expenses must be evaluated with respect to both the actual expenditures and the length of time until premiums begin to cover such expenditures. That is, the funding of a new organization must anticipate a substantial lag between the time start-up expenditures are made and the first member is enrolled (i.e., when premiums are first available to cover costs).

The primary drivers for start-up capital requirements are the number of people enrolled in a health care co-op or public plan, the health care costs per member, and the financial experience of the health care co-op or public plan (i.e., the extent to which premiums exceed or fall short of total medical costs and administrative expenses).

- (3) **Develop and summarize financial projections and scenarios.** After defining the population and capital requirement methodologies, the projection model produces annual financial results, including pro forma financial statements, for the 10-year projection period (i.e., years 2010 through 2019) based on a detailed set of assumptions. We defined each set of assumptions and the corresponding financial results as a scenario.

## B. Assumptions

The projection model was developed to accommodate varying input assumptions. Across all the various scenarios, some assumptions remained constant while we varied others for sensitivity analysis. Model algorithms were then applied, using these assumptions, to develop required capital estimates for each scenario. Note that all of the assumptions can be adjusted for new scenarios.

- (1) **Assumptions held constant.** The key model assumptions that were held constant across all scenarios in this report are as follows:
- (a) The populations by broad risk category as described above (see *Methodology* (1)).
  - (b) A prudent level of capital is 250 percent of the company action level of the NAIC risk-based capital formula. This assumption was derived as the low end of the range of actual risk-based capital targets for a large national commercial managed care organization, a large regional managed-care organization, and risk-based capital studies prepared on behalf of the Blue Cross Blue Shield system. Although this assumption has been used for modeling purposes, note that a prudent level of capital for a particular organization should reflect the circumstances of that organization.
  - (c) Preoperational start-up expenses for each statewide health care co-op are estimated to be \$15 million (total of \$750 million nationwide) and incurred evenly over 2011 and 2012. While empirical support for this assumption is not available, it should be noted that the impact of pre-operational expenses is overwhelmed by the impact of risk capital requirements. Preoperational start-up expenses for a public plan are estimated to be \$500 million and incurred evenly over 2011 and 2012, reflecting an assumed economy of scale with respect to the 50 co-ops.
  - (d) Starting health care claims costs per member assumptions (i.e., calendar year 2010) were based on 2009 claims cost derived from a May 2009 report by Milliman USA, *2009 Milliman*

*Medical Index*, an undated report prepared by Leif Associates Inc., *Report: The Business Case for Coverage of Tobacco Cessation*, and U.S. Census Bureau information.

- (i) Aggregate average per member per month claims costs for the co-ops = \$420.00
  - (ii) Due to the negotiating power of the federal government with health care providers, it was assumed that the public plan would experience claims costs, and therefore premiums, that are 5 percent lower than for the co-ops.
- (e) Enrollee cost sharing is 27 percent.

For the proportion of medical costs paid by enrollees in the form of deductibles, coinsurances, and copayments, a benefit plan that pays 73 percent of all medical costs with the member paying the remaining 27 percent was assumed. The model did not incorporate multiple benefit plan options that will likely characterize any actual reform bill. This could be an enhancement to the model to accommodate future requests.

- (f) Functional expense factor assumptions for co-ops beginning in 2013 are:

Functional Description	Assumption (per member/per month)
Marketing/Sales	\$19.13 PMPM
Provider & Medical Management	\$3.40 PMPM
Account & Member Administration	\$13.57 PMPM
Corporate Services	\$5.65 PMPM

The assumed ongoing functional expenses required of a health plan are consistent with assumptions published by the Sherlock Company in July 2008 and a policy statement of the American Academy of Actuaries released in September 2009.<sup>2</sup> See Exhibit B for more detail on the functional operations of health plans.

In 2013, these functional expenses amount to approximately 8.6 percent of premium. Sales commission expenses are assumed to increase at the same rate as premiums. Other PMPM functional expenses, (other than sales commission costs) increase at an inflation rate of 3 percent per year. It was assumed that a public plan could achieve some economies of scale with functional expenses of about 7.2 percent versus the 8.6 percent for the co-ops.

- (g) State premium taxes are 2 percent of premiums and state/federal guaranty funds and other assessments are 1.5 percent of premiums
- (h) Risk charges (see Exhibit A) are set at an industry average of 3 percent to fund a risk margin for potential losses and/or contributions to required capital.
- (i) Federal funds are distributed as loans or grants. Loans are provided to cover pre-operational start-up expenses, and grants are provided to meet state solvency requirements.
- (j) Medical trend, which reflects the increase in costs for covered medical expenses, is 9 percent per year.<sup>3</sup> See Exhibit A for a more detailed definition of health care trend generally.
- (k) The target medical loss ratios (see Exhibit A) for the co-ops vary by year and range from an initial ratio of 84.9 percent in 2013 to 86.5 percent in 2019 reflecting the assumption that

<sup>2</sup> American Academy of Actuaries, *Critical Issues in Health Reform: Administrative Expenses*, September 2009. [http://www.actuary.org/pdf/health/admin\\_expenses\\_sept09.pdf](http://www.actuary.org/pdf/health/admin_expenses_sept09.pdf)

<sup>3</sup> With respect to this 9 percent medical trend assumption, we reference the *Spring 2009 Health Care Trend Survey* conducted by Aon Consulting. Virtually all of the major national managed care organizations participated in this survey (e.g. Aetna, CIGNA, Humana, Kaiser, UnitedHealth care, and 26 Blue Cross Blue Plans). The national medical trend average for these managed care organizations was slightly in excess of 10 percent. Each of our modeled scenarios assumes a flat 9 percent annual medical trend for the period from 2010 through 2019. This is slightly lower than the survey results and consistent with our taking no position as to whether health care reform will have either a positive or negative impact on medical cost increases.

medical trends would continue to exceed the rate at which administrative expenses increase throughout the projection period. The target medical loss ratios for the public plan ranged from 86.3 percent in 2013 to 87.7 percent in 2019.

- (l) Each health care co-op was assumed to cover 2 percent of the total enrollment in all co-ops nationally (a rough approximation of the average size of 50 state-based co-ops). We recognize that this is a simplification and are prepared to conduct more detailed state-specific analyses as requested.
- (m) The short-term cash equivalent investment rate starts at 0.5 percent and grades to 1.5 percent by 2012.

The grading reflects the unusually low current interest rate environment that we expect will increase over the next several years.

- (n) The longer-term investment rate (bond rate) starts at 3 percent and grades to 5 percent by 2012.  
The grading reflects the unusually low current interest rate environment that we expect will increase over the next several years.
- (o) The loans from the U.S. Treasury are interest-free, absent any defined interest rate in the draft bill language.
- (p) We assumed that funds held for claims incurred but not yet paid would amount to 17 percent of each year's incurred claims. This is approximately two months of paid claims, which is consistent with current industry experience. These funds are available for investing at the short-term cash-equivalent rate.
- (q) The health care co-ops and public plans are exempt from federal income taxes. Note however that the model has the capacity to analyze other assumptions regarding federal income tax treatment.
- (r) The health care co-ops or a public plan would start operations on January 1, 2013.

- (2) **Assumptions varying by scenario.** Capital requirements were projected for health care co-ops and a public plan under 12 scenarios with varying assumptions in addition to the constant assumptions described above. Each scenario is defined by a combination of assumptions for enrolled members and actual claims experience, as represented by deviation from a targeted medical loss ratio:

- (a) *Level of initial enrollment in 2013:*

- (i) High enrollment (20 million members nationwide with growth to 40 million in 2019).
- (ii) Low enrollment (2 million members nationwide in 2013). Enrollment was maintained at 2.0 million members from 2013 through 2019. This was a simplifying assumption to display the capital requirements assuming the health care co-op or public plan offerings do not gain substantial traction in the market place.

- (b) *Deviations from the target medical loss ratio:*

- (i) No deviation from the target medical loss ratio in any year (accurate pricing scenario).
- (ii) 5 percent underpricing in the first year. This reflects claims 8 percent higher than the target loss ratio for year 2013—5 percent higher than expected claims plus the 3 percent assumed contribution to surplus. We assume the under pricing decreases gradually to 3 percent in 2014 and 1 percent in 2015. Thereafter target loss ratios are achieved.
- (iii) 5 percent overpricing in the first year. This reflects claims 2 percent higher than the target loss ratio for year 2013—5 percent lower than expected claims plus the 3 percent assumed contribution to surplus. We assume the over pricing decreases to 4 percent in 2014 and by 2015 target loss ratios are achieved.

(3) Qualifications of the results

As previously noted, financial-projection models are inherently complex and future results will almost certainly differ from the modeled assumptions, often materially. This is especially true for a model that is attempting to reflect legislation that is currently being debated and revised.

Additionally, readers of this report are cautioned to be cognizant of the financial uncertainties that surround new and untested insurance entities such as the health care co-ops and public plans discussed herein.

It is extremely difficult to develop premium rates in advance for an organization with no experience base and with unknowns with respect to such critical parameters as:

- (a) The number of enrollees and risk characteristics of the population that will ultimately be attracted by the health care co-ops and public plans;
- (b) The regulatory provisions with which the health care co-ops and public plans must comply;
- (c) The responses by the private-sector health insurers to the health care co-ops, public plans, and the insurance exchanges.

Accordingly, we developed and summarized a limited number of scenarios which we consider to provide a reasonable bound on the range of possible outcomes. Readers of this report are again cautioned against accepting any one scenario as the most likely outcome. As specific details replace the currently modeled assumptions, actual results may fall outside the range of outcomes presented in this report.

## STARTING HEALTH CARE CO-OPS

### A. Network-Based Health Care Co-ops

For purposes of this report, a network-based health care co-op is defined to be a member-run and member-owned health insurance company that usually pays for its members' health care claims on a fee-for-service basis with the fees being contractual, such as a per diem, a set amount per service, or a percentage discount off of the providers' billed charges. The health care co-op may also employ capitated provider payment arrangements; however, this is less common relative to fee-for-service. The health care co-op may build its network by negotiating and contracting with provider groups directly, which can take many years to implement. It may also lease existing networks.

### B. Start-Up Steps

To start a co-op, a group of individuals must come together and legally form the co-op. Because a co-op is member-run, the group must decide on the leadership and bylaws of the co-op.

To transact the business of insurance, the co-op must apply for an insurance license and a certificate of authority in each state that it expects to sell policies. To obtain the license, the co-op must meet each state's minimum capital requirements, elect officers and a board of directors, and file articles of incorporation.

Once the proper licensing is obtained, the health care co-op would need to build the infrastructure to operate a health insurance company. In addition to senior management, the co-op needs the capacity to perform the functions listed in Exhibit B. The co-op would require information technology systems to support those functions.

Many of the insurance administrative functions can be outsourced initially. As the co-op builds membership, it can develop the necessary resources in-house. In particular, the co-op also can lease a health care provider network initially rather than negotiating the necessary contracts itself. However, the network access/rental fee paid by the co-op would need to be included in the premium rates.

Before the co-op can begin to sell policies, it would need to develop the health insurance products that it wishes to sell. This requires designing the benefits, developing the rating manual, drafting the policy language, and filing both the policy form and rates with the applicable state departments of insurance for approval.

Once the policy forms and rates are approved, the co-op would market and sell the policies, including developing brochures and a call center to explain the policies and to answer any questions of prospective policyholders. If the co-op wishes to contract with insurance agents or brokers to sell its products, it would appoint them and then must notify the appropriate state departments of insurance. To sell its products through a state-based health insurance exchange, the co-op would have to comply with the application and other requirements established for the exchange.

The estimated amounts of capital required to start a health care co-op are shown in Exhibit C.

## STARTING A PUBLIC PLAN

### A. Public Plan

A public plan is an insurance program owned and run by government. A public plan could take many forms. The form of public plan modeled by the work group is an insurance program owned and operated by the federal government, administered on a regional basis, and charging prices that vary by region.

### B. Start-Up Steps

If it is intended that the public plan compete with private-sector health plans on a level playing field, the public plan would have to take many of the same steps as would be required to start a health care co-op. Specific requirements are detailed below.

To transact the business of insurance, the public plan would have to apply for an insurance license and a certificate of authority in each state that it expects to sell policies. To obtain the license, the public plan would have to meet each state's minimum capital requirements—again, assuming the intent is to compete with private-sector health plans on a level playing field.

Once the proper licensing is obtained, the public plan would need to build the necessary infrastructure. It is possible that some of the infrastructure could be adapted from the Medicare administrative infrastructure, but this is by no means certain since Medicare is not structured to operate as an insurance company. The public plan would need the capacity to perform the functions listed in Exhibit B, including the information technology systems to support those functions. The provider network for the public plan might be built initially upon the Medicare provider network, thereby reducing the cost of the provider contracting function. However, this would conflict with the level playing field assumption. Many of the insurance administration functions could be outsourced initially. As the public plan builds membership, it could develop the necessary resources in-house.

Before the public plan could begin to sell policies, it would need to develop the products that it wishes to sell. This requires designing the benefits, developing the rating manual, drafting the policy language, and filing for approval both the policy form and rates with the applicable state departments of insurance.

Once the policy forms and rates are approved, the public plan would need to market and sell the policies, including developing brochures and a call center to explain the policies and to answer any questions of prospective policyholders. It is possible that the Medicare beneficiary infrastructure could expand to serve some of these functions. If the public plan decides to contract with insurance agents or brokers to sell its products, it would have to appoint them and notify the appropriate state departments of insurance. To sell its products through state-based health insurance exchanges, the public plan would need to comply with the application and other requirements established for the exchanges.

Note that even if a public plan were exempt from state licensing, in order to operate on a level playing field it would need to establish risk capital at the levels of state requirements. We assume it would also need to develop policy forms, fair rates and a distribution system subject to the same standards required by states.

The estimated amounts of capital required to start a public plan are shown in Exhibit C.

## RESULTS, CONCLUSIONS AND NEXT STEPS

### A. Results

The following tables summarize the start-up capital infusions needed for health care co-ops (Table 1A) and a public plan (Table 1B) during the first 10 years of development and operations under the various projection scenarios:

Table 1A Capital Required to be Infused from Outside Sources during First 10 Years HEALTH CARE CO-OPS (\$ In Billions)						
	Low Enrollment (Nationwide enrollment of 2 million people (constant from 2013-2019))			High Enrollment (Nationwide enrollment of 20 million (2013) growing to 40 million (2019))		
	Pre-Operational Capital <sup>a</sup>	Risk Capital <sup>b</sup>	Total Capital	Pre-Operational Capital <sup>a</sup>	Risk Capital <sup>b</sup>	Total Capital
<b>Accurate Pricing</b>	\$0.8	\$1.6	\$2.4	\$0.8	\$15.6	\$16.4
<b>Under Pricing</b>	\$0.8	\$3.6	\$4.4	\$0.8	\$44.8	\$45.6
<b>Over Pricing</b>	\$0.8	\$1.3	\$2.1	\$0.8	\$12.8	\$13.6
<sup>a</sup> Pre-operational capital infusions are assumed to be interest-free loans from the federal government; pre-operational capital amounts are shown prior to any potential loan repayments.						
<sup>b</sup> Risk capital infusions are assumed to be grants from the federal government.						

Table 1B Capital Required to be Infused from Outside Sources during First 10 Years PUBLIC PLAN (\$ In Billions)						
	Low Enrollment (Nationwide enrollment of 2 million people (constant from 2013-2019))			High Enrollment (Nationwide enrollment of 20 million (2013) growing to 40 million (2019))		
	Pre-Operational Capital <sup>a</sup>	Risk Capital <sup>b</sup>	Total Capital	Pre-Operational Capital <sup>a</sup>	Risk Capital <sup>b</sup>	Total Capital
<b>Accurate Pricing</b>	\$0.5	\$1.4	\$1.9	\$0.5	\$14.4	\$14.9
<b>Under Pricing</b>	\$0.5	\$3.3	\$3.8	\$0.5	\$41.0	\$41.5
<b>Over Pricing</b>	\$0.5	\$1.2	\$1.7	\$0.5	\$11.9	\$12.4
<sup>a</sup> Pre-operational capital infusions are assumed to be interest-free loans from the federal government; pre-operational capital amounts are shown prior to any potential loan repayments.						
<sup>b</sup> Risk capital infusions are assumed to be grants from the federal government.						

### B. Conclusions

- (1) Substantial capital will be required to start and support health care co-ops or a public plan for a 10-year period. Under the scenarios presented in this report, which reflect ranges of initial membership and the relationship between actual and expected claim experience, start-up capital requirements ranged from approximately \$1.7 billion to \$45.6 billion.



- (2) The sensitivities of projected capital requirements were tested to a number of variables. The most sensitive are those reflected in the scenarios presented in this report, namely the number of co-op or public plan members, and any differences between pricing assumptions and actual claims and expenses experienced. Other factors that can affect risk-capital requirements include:
  - (a) Risk characteristics of the people who purchase health insurance from the co-ops/public plan. If enrollees in the co-ops/public plans are healthier than average, average claims, and thus risk capital requirements will be lower. Conversely, if the enrollees are in poorer health than average, claims, and thus capital requirements will be higher. This can occur if adverse selection occurs. Adverse selection can result if health plans are required to accept all applicants with rating restrictions and no coverage exclusions while individuals can continually enter and exit the market without significant consequences. Adverse selection against the co-op or public plan can also occur if these options are perceived to be alternatives to state high-risk pools. Adverse selection can also increase the likelihood that premiums are not priced adequately, which can also increase risk capital needs;
  - (b) Richness of benefit plans sold by the co-ops/public plan. Richer benefits will increase average claims thus increasing risk capital needs;
  - (c) Risk margins included in the pricing of the benefit plans. Higher margins will contribute more toward surplus;
  - (d) Effectiveness of risk adjustment or risk-sharing programs, such as reinsurance or risk corridors, that pertain to the co-ops/public plan and the private-sector health plans with which they compete. Risk sharing mechanisms can reduce risk capital needs for a particular organization by reducing unexpected claims deviations but cannot reduce the overall marketplace cost;
  - (e) Risk-capital requirements to which the co-ops/public plan are subject; and
  - (f) Medical trend (rate of increase in underlying health care costs). Higher trends will reflect higher claims, which in turn will require more risk capital.
- (3) Start-up capital is required to cover start-up expenses and to meet prudent risk capital standards until the co-ops or public plan can meet their needs for capital from ongoing operations. Most of the start-up capital required would be to meet risk capital standards.
- (4) Start-up capital requirements for a public plan that operates on a level playing field with private-sector plans are likely to be similar to those for all the health care co-ops in total.

### C. Next Steps

The work group recognizes that the subject matter of this report is highly technical and it is available to answer questions about this report or about risk-capital requirements for health insurance organizations in general.

Furthermore, this report presents capital requirements projected using assumptions that the work group regarded as reasonable at the time it developed its projections. As more details regarding health care co-ops or a public plan are considered or determined, the work group is prepared to develop new projections that reflect those details and the model was developed to perform such projections quickly. The work group strongly recommends the inclusion of capital requirements be included in Congress' deliberations over health care reform, as well as the production of new projections of required risk capital as various alternatives are considered. Requests for such additional projections may be made by contacting Heather Jerbi (Jerbi@actuary.org), senior health policy analyst at the American Academy of Actuaries, or Sara Teppema (Steppema@soa.org), staff fellow for health at the Society of Actuaries.

## EXHIBITS

### EXHIBIT A – DEFINITIONS

**Administrative expense loss ratio (ALR)**—ratio of incurred administrative expenses to earned premium, where typically both expense and premium are measured over a 12-month accounting period.

**Adverse selection**—the likelihood that individuals with higher risk profiles will purchase more insurance (e.g., richer benefits) than individuals with lower risk profiles. Also refers to situations where consumers know more about their risk profiles than an insurance company and base their decision whether to buy insurance on that information.

**Assets**—tangible and intangible properties that are owned, typically including cash, bonds, mortgages, real estate, but also receivables and good will.

**Capital**—the amount by which an organization’s assets exceeds its liabilities, also called surplus.

**Consumer operated and oriented Plan (co-op) or cooperative**—non-profit member-run health insurance companies that serve individuals in one or more states. Such member-run health insurance companies would compete with existing health insurance organizations (e.g., insurance companies, health care service plans, health maintenance organizations, etc.)

**Contribution to Surplus** – earnings (generally Net Income) that a not for profit organization makes during a defined accounting period.

**Cost of capital**—expressed as a rate of return, the cost of capital represents the weighted return required by the firm’s owners on their stock and by lenders of capital notes. The term is also generally used as a “hurdle rate,” (i.e., in a discounted cash-flow analysis, a potential project should provide an expected return above the cost of capital in order for the firm to proceed with it).

**Guarantee funds**—systems maintained by states that provide a mechanism to protect insurance consumers from insolvency of their insurer. States maintain separate funds for property/casualty and life/health coverages, and may have separate funds for coverage categories within each. Losses covered by the funds are generally paid through assessments against solvent insurers, based on premiums written by the surviving carriers.

**Liabilities**—most broadly, the insurer’s financial obligations under its contracts, as well as any debts outstanding. See also *premium deficiency reserves* below.

**Medical loss ratio (MLR)**—the ratio of incurred claims to earned premiums, where both are measured for an accounting period, typically for a quarter or a full year.

**Medical trend**—medical cost inflation rate of the private sector insured population, generally driven by rate of increase in unit prices charged by medical providers, rate of increase in medical utilization by consumers, technology changes (e.g., MRIs replacing or supplementing X-rays), and shifts in service mix (e.g., increase in rate of C-section births).

**Member**—individual person who is covered by an insurance plan against certain medical costs

**NAIC**—National Association of Insurance Commissioners. A voluntary organization of all states’ insurance commissioners and U.S. territories that meets regularly and develops model laws and regulations in response to emerging regulatory needs. Many states ultimately adopt these model laws and regulations, though sometimes with changes to meet the special needs or situations of a given state.

**Net income**—revenues (premiums and investment income) less benefit costs, expenses, taxes, and fees. Net income generally also includes asset capital gains and losses in revenue.

**Operating capital**—capital required to fund start-up plus ongoing operational expenses when premium revenues are not adequate to cover the insurance claims and the operational expenses.

**Operating gain/loss**—similar to net income but excluding capital gains and losses.

**Per member per month (PMPM)**—a means for normalizing premiums and medical costs across total enrollment. For example, total premiums for a calendar year are divided by the sum of the number of members in each month of the year (or 12 times the average number of members over the year) to get the premium PMPM amount.

**Preoperational start-up expenses**—the expenses associated with starting a health insurance organization prior to selling any policies, including organization, licensing, regulatory filings, policy and rate development, building administrative infrastructure and information technology systems.

**Premium deficiency reserve**—a liability representing the present value of future losses until premiums are expected to cover future claims and expenses.

**Premium taxes**—taxes assessed by most states against premiums, generally collected irrespective of earnings levels. The typical tax rate on health premiums is 2 percent.

**Public plan**—a public plan is an insurance program owned and run by government.

**Risk-based capital (RBC)**—a system for solvency regulation. The NAIC defines a minimum RBC standard that is a function of an insurer's assets, liabilities, premiums and expenses. The formula used to calculate the minimum is relatively complex, and aims to distinguish relative riskiness of assets, liabilities and lines of business. For example, the asset factors distinguish between the many different asset categories (e.g., bonds versus stocks), and between risk characteristics within categories (e.g., bonds are further delineated by credit rating). Regulatory action is stipulated according to how an insurer's actual capital relates to its minimum RBC amount. If a company's capital dips below its company action level, the company must prepare a comprehensive report to the state insurance commissioner explaining why it fell below and what corrective actions will be taken to increase capital. In the extreme, the state insurance commissioner is compelled to take over the insurer if its capital falls too far below the minimum RBC.

**Risk capital**—capital required to mitigate the risk that insurance claims and expenses will exceed insurance premium income. In other words, it is the capital required to ensure that an insurance organization will have enough money to meet its financial obligations.

**Risk charge**—a charge or amount added to premiums to reflect the risk to an insurer's capital for potential insurance losses. If not needed to cover losses, risk charges can be used to fund required risk or operating capital.

**Start-up capital**—the sum of the pre-operational capital and the risk capital required to start a health insurance organization. For the analysis, the start-up period for risk capital is defined as the three years preceding and the seven years following establishment (i.e. from 2010 through 2019).

**Surplus**—the excess of assets over liabilities on an accounting basis, also known as capital.

**EXHIBIT B – OPERATIONAL FUNCTIONS PERFORMED BY HEALTH PLANS**

<b>Summary of Operations by Functional Category</b>			
<b>Marketing</b>	<b>Provider &amp; Medical Management</b>	<b>Account &amp; Member Administration</b>	<b>Corporate Services</b>
<ul style="list-style-type: none"> <li>■ Market research</li> <li>■ Plan/product design</li> <li>■ Marketing campaigns/ sales</li> <li>■ Advertising and public relations</li> <li>■ Rating &amp; underwriting</li> </ul>	<ul style="list-style-type: none"> <li>■ Provider network/ contracting</li> <li>■ Provider and program quality administration and reporting</li> <li>■ Medical management</li> <li>■ Pharmacy management</li> </ul>	<ul style="list-style-type: none"> <li>■ Enrollment and billing</li> <li>■ Claims and encounter administration</li> <li>■ Information technology</li> <li>■ Customer service</li> <li>■ Member communications</li> <li>■ Fraud controls</li> </ul>	<ul style="list-style-type: none"> <li>■ Finance and accounting</li> <li>■ Actuarial</li> <li>■ Risk management</li> <li>■ Legal, compliance, and filing</li> <li>■ Corporate executive and governance</li> <li>■ Investment services</li> </ul>

Source: Developed by Solucia Consulting, consistent with the Sherlock Company’s functional mapping.

<b>Representative Industry Expenses by Functional Category</b>			
<b>Administrative Costs</b>	<b>Per Member Per Month Costs</b>		
	<b>25<sup>th</sup> Percentile</b>	<b>Median</b>	<b>75<sup>th</sup> Percentile</b>
<b>Marketing</b>	\$5.36	\$7.46	\$9.89
<b>Provider &amp; Medical Management</b>	\$2.08	\$3.12	\$3.87
<b>Account &amp; Member Administration</b>	\$8.81	\$10.23	\$12.16
<b>Corporate Services</b>	\$3.85	\$4.40	\$5.82

Source: Sherlock “Plan Management Navigator,” July 2008. The data is from 2007.

**EXHIBIT C – DETAILED RESULTS FOR HEALTH CARE CO-OPS OR A PUBLIC PLAN**

As noted in the main report, the model results are a function of the various assumptions and actual future outcomes could vary materially from the projections to the extent that actual events differ materially from these assumptions.

This exhibit demonstrates the sensitivities of the significant assumptions. All projection results in this exhibit are for 50 statewide co-ops and national public plan.

**(1) Membership and revenue projections**

The tables below present projections of membership and premium revenues under the low and high-enrollment scenarios.

<b>Membership Enrollment (in millions)</b>										
	<b><u>2010</u></b>	<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>	<b><u>2015</u></b>	<b><u>2016</u></b>	<b><u>2017</u></b>	<b><u>2018</u></b>	<b><u>2019</u></b>
<b><u>50 State Co-ops</u></b>										
Low Enrollment	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
High Enrollment	0.0	0.0	0.0	20.1	23.4	26.7	30.1	33.4	36.7	40.1
<b><u>National Public Plan</u></b>										
Low Enrollment	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
High Enrollment	0.0	0.0	0.0	20.1	23.4	26.7	30.1	33.4	36.7	40.1

<b>Premium Revenues (in billions)</b>										
	<b><u>2010</u></b>	<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>	<b><u>2015</u></b>	<b><u>2016</u></b>	<b><u>2017</u></b>	<b><u>2018</u></b>	<b><u>2019</u></b>
<b><u>50 State Co-ops</u></b>										
Low Enrollment	\$ 0.0	\$ 0.0	\$ 0.0	\$ 11.8	\$ 12.8	\$ 13.9	\$ 15.1	\$ 16.4	\$ 17.8	\$ 19.4
High Enrollment	0.0	0.0	0.0	117.7	147.6	181.8	220.9	265.4	316.1	373.5
<b><u>National Public Plan</u></b>										
Low Enrollment	\$ 0.0	\$ 0.0	\$ 0.0	\$ 10.6	\$ 11.6	\$ 12.6	\$ 13.7	\$ 14.9	\$ 16.1	\$ 17.6
High Enrollment	0.0	0.0	0.0	106.5	133.6	164.6	200.0	240.4	286.3	338.4

Note that even as membership remains level in the low-enrollment scenario, the premium revenues continue to grow due to medical trend.

**(2) Expense levels**

Operating expenses (excludes taxes and assessments) relative to premiums will decrease slightly as (a) the membership grows and greater efficiencies are achieved, and (b) medical trend outpaces inflation in operational expenses.

<b>Operating Expenses (as a percent of premium)</b>										
	<b><u>2010</u></b>	<b><u>2011</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>	<b><u>2014</u></b>	<b><u>2015</u></b>	<b><u>2016</u></b>	<b><u>2017</u></b>	<b><u>2018</u></b>	<b><u>2019</u></b>
<b>Health Care Co-ops</b>	N/A	N/A	N/A	8.6%	8.3%	8.0%	7.7%	7.5%	7.2%	7.0%
<b>Public Plan</b>	N/A	N/A	N/A	7.2%	7.0%	6.7%	6.5%	6.2%	6.0%	5.8%

In addition to operating expenses, state premium taxes of 2 percent of premiums, and state/federal guaranty funds and other assessments of 1.5 percent of premiums are assumed in the model.

(3) Net income

Net income in our projection model consists of underwriting gains or losses (premiums less benefit costs less expenses) plus investment earnings. It was assumed that the co-ops do not pay income taxes; otherwise, income taxes would have been deducted in computing net income.

Net Income (in billions)										
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
<b><u>50 State Co-ops</u></b>										
Low Enrollment										
Accurate Pricing	\$0.0	\$(0.4)	\$(0.4)	\$ 0.4	\$ 0.5	\$ 0.5	\$ 0.5	\$ 0.5	\$ 0.6	\$ 0.6
Underpricing	0.0	(0.4)	(0.4)	(0.6)	(0.3)	(0.1)	0.6	0.6	0.7	0.8
Overpricing	0.0	(0.4)	(0.4)	0.6	0.6	0.5	0.5	0.5	0.6	0.6
High Enrollment										
Accurate Pricing	0.0	(0.4)	(0.4)	3.5	5.6	6.1	7.3	8.8	10.5	12.4
Underpricing	0.0	(0.4)	(0.4)	(5.9)	(3.3)	(1.4)	8.4	10.2	12.2	14.5
Overpricing	0.0	(0.4)	(0.4)	5.9	7.0	6.0	7.1	8.6	10.2	12.1
<b><u>National Public Plan</u></b>										
Low Enrollment										
Accurate Pricing	\$0.0	\$(0.3)	\$(0.3)	\$ 0.3	\$ 0.5	\$ 0.4	\$ 0.5	\$ 0.5	\$ 0.5	\$ 0.6
Underpricing	0.0	(0.3)	(0.3)	(0.5)	(0.2)	(0.1)	0.5	0.6	0.6	0.7
Overpricing	0.0	(0.3)	(0.3)	0.5	0.6	0.4	0.4	0.5	0.5	0.6
High Enrollment										
Accurate Pricing	0.0	(0.3)	(0.3)	3.2	5.1	5.5	6.6	8.0	9.5	11.3
Underpricing	0.0	(0.3)	(0.3)	(5.3)	(2.9)	(1.2)	7.6	9.3	11.1	13.1
Overpricing	0.0	(0.3)	(0.3)	5.3	6.4	5.4	6.5	7.8	9.3	11.0

**Note:** Dollar amounts may not add to total due to rounding.

(4) Capital requirements

The primary driver of the capital requirements is the regulatory RBC standards, which are mainly a function of the level of health care claims. Consequently, as co-op or public plan membership grows, capital requirements grow. Although the RBC formula is quite complex and includes a wide array of operational data, the resulting capital requirements for our modeled co-ops and public plan are a relatively stable function of claims or premiums. Note though that other health insurance organizations, especially those with riskier asset portfolios, could have RBC results materially different from the model.

(5) Capital financing

The primary focus of the modeling was to assess the capital needs for the proposed start-up health care co-ops or a public plan. As noted in the report, it was assumed that risk-capital infusions would be grants from the federal government and that pre-operational start-up expenses would be interest-free loans from the federal government. Any such loans would be repaid in later years as the co-ops' or public plan's earnings become sufficient to meet regulatory capital requirements.

START-UP CAPITAL COSTS FOR HEALTH CARE CO-OPS AND A PUBLIC PLAN

The capital infusions required are shown in the table below. The yearly amounts and “Total” column represent grants or loans from the Treasury, while the column labeled “Loan Repay” represents the eventual loan repayments to the Treasury.

<b>Required Capital Infusions from Grants and/or Loans (in billions)</b>												
	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>Total</u>	<u>Loan Repay</u>
<b><u>50 State Co-ops</u></b>												
Low Enrollment												
Accurate Pricing	\$ 0.0	\$ 0.4	\$ 0.4	\$ 1.6	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 2.4	\$ 0.8
Underpricing	0.0	0.4	0.4	2.7	0.5	0.4	0.0	0.0	0.0	0.0	4.4	0.8
Overpricing	0.0	0.4	0.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.8
High Enrollment												
Accurate Pricing	0.0	0.4	0.4	15.6	0.0	0.0	0.0	0.0	0.0	0.0	16.4	0.8
Underpricing	0.0	0.4	0.4	26.8	9.0	9.0	0.0	0.0	0.0	0.0	45.6	0.8
Overpricing	0.0	0.4	0.4	12.8	0.0	0.0	0.0	0.0	0.0	0.0	13.6	0.8
<b><u>National Public Plan</u></b>												
Low Enrollment												
Accurate Pricing	\$ 0.0	\$ 0.3	\$ 0.3	\$ 1.3	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 0.0	\$ 1.9	\$0.5
Underpricing	0.0	0.3	0.3	2.5	0.4	0.3	0.0	0.0	0.0	0.0	3.8	0.5
Overpricing	0.0	0.3	0.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.5
High Enrollment												
Accurate Pricing	0.0	0.3	0.3	14.3	0.0	0.0	0.0	0.0	0.0	0.0	14.9	0.5
Underpricing	0.0	0.3	0.3	24.5	8.2	8.2	0.0	0.0	0.0	0.0	41.5	0.5
Overpricing	0.0	0.3	0.3	11.8	0.0	0.0	0.0	0.0	0.0	0.0	12.4	0.5

**Note:** Dollar amounts may not add to total due to rounding.

Even in the scenarios where the co-ops and public plan have positive net income in the first few years of operations, the income level may not be enough to fund regulatory capital requirements. Consequently, the co-ops and public plan need access to capital for a number of years, which varies by scenario. Under the low-enrollment/overpricing scenario, the co-ops and the public plan continue to need capital infusions through 2013. Under the high-enrollment/underpricing scenario, the co-ops and the public plan need capital infusions through 2015.

## EXHIBIT D – REFERENCES

This report relied on an understanding of bills currently under consideration and the work of others with respect to health care reform legislation. Sources included the following:

- (i) Kaiser Family Foundation document comparing the key provisions for the following major health care reform proposals:
  - a) Senate Finance Committee *America's Health Future Act of 2009* (as of Sept. 22, 2009)
  - b) Senate HELP Committee *Affordable Health Choices Act* (June 9, 2009)
  - c) House Tri-Committee *America's Affordable Health Choices Act of 2009* (H.R. 3200) (June 19, 2009)
  - d) President Obama Principles for Health Reform (Feb. 26, 2009)
- (ii) Congressional Budget Office's Review of various proposals, including:
  - a) June 15, 2009 analysis to Sen. Edward M. Kennedy
  - b) July 14, 2009 analysis to Rep. Charles B. Rangel
  - c) July 26, 2009 analysis to Rep. Dave Camp
  - d) Sept. 16, 2009 analysis to Sen. Max Baucus
  - e) Sept. 22, 2009 analysis to Sen. Max Baucus
- (iii) U.S. Census Bureau report of September 2009
- (iv) Congressional Budget Office analysis dated July 24, 2007 addressed to Sen. Max Baucus analyzing the number of uninsured children who are eligible for Medicaid or CHIP programs
- (v) American Academy of Actuaries paper, *Critical Issues in Health Reform: Administrative Expenses* (September 2009)
- (vi) The NAIC's 2008 risk-based capital formula for health care companies
- (vii) America's Health Insurance Plans report, *Individual Health Insurance: New Studies Shed Light on Issues of Affordability, Access, and Plan Design* (January/February 2004)
- (viii) Congressional Budget Office, *Key Issues in Analyzing Health Insurance Proposals* (December 2008)
- (ix) Milliman USA, *2009 Milliman Medical Index* (May 2009)
- (x) Leif Associates Inc., Report: *The Business Case for Coverage of Tobacco Cessation*
- (xi) Aon Consulting, *Spring 2009 Health Care Trend Survey*