

Deadly Politics: Elections, Medical Spending, and Mortality

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Abstract Death and disease exacts a heavy toll on citizens in many democracies. I argue that the funding and distribution of health policy in democracies are subject to political economic distributive pressures. Patterns of partisanship, strategic importance, and quality of legislative representation condition the provision of public health funding within countries. In turn, public health spending alters district mortality outcomes. I assemble administrative district level data for late Third Republic France and model its health funding and mortality rates. Political importance, not need, plays a prominent role in determining who lives and dies in democracies. In an environment analogous to modern developing countries but absent international political pressures, my results demonstrate that poor health is not just a consequence of lack of funding but also domestic political economy incentives.

Keywords Distributive politics · Comparative political economy · Health policy · Welfare state

It seems natural to assume that the goal of health policy for democratic politicians is the maximum reduction of misery within their borders. As a consequence, the focus of debates in public health policy usually concern proper treatments and

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adequate public health budgets. The WHO, for example, argues that disease proliferates “because [countries] lack the necessary resources, because their health infrastructure has collapsed as a consequence of under-investment and shortages of trained health workers, or because the infrastructure has been damaged or destroyed by armed conflict or a previous natural disaster” (WHO 2007, 57). After all, the logic goes, one of the first priorities of the state is to ensure its inhabitants’ basic physical security. But in the face of limited resources, politicians cannot completely satisfy their constituents’ health needs. How, then, are health distribution decisions made? Will politicians spend resources using a need-based approach with funds that do exist?

Empirical work on health and social services suggest that they may not. Evidence on the quality of health provision shows that significant inequalities exist in sub-national health distribution, with public health often targeting low-need groups. In an extensive subnational survey analysis of 11 Southeast Asian countries, for example, scholars found that health expenditure is usually pro-rich and not consistent with a model of need-based distribution (O’Donnell et al. 2007). Similarly, many other studies in political science and comparative public policy indicate that public health measures, even when properly funded by effective institutions, do not reach those who most need it (Castro-Leal et al. 1999; Filmer 2003; Gwatkin et al. 2005; Lynch 2008).

I argue that the explanation of these findings about health inequities is, in part, distributive political pressures. I illustrate the importance of political economic factors in the provision of health by performing an empirical analysis of a historical case, late Third Republic France (1910–1939). A turn of the century case selection sidesteps empirical problems introduced by international funding when studying present day developing countries and provides significant research design advantages. Evidence from France, uncontaminated by the political interests of international actors, indicates that politically important districts received higher funding from *Assistance Médicale Gratuite* (AMG), a major French public health relief measure. In addition, further tests correlate increased health spending on AMG with decreased mortality in departments. My results in France provide evidence about the link between health and politics in the modern developing world, where scholars debate the (non-) effect of health spending on poor health and mortality. In short, policymakers need to incorporate a systematic understanding of domestic politician political incentives when contemplating how to help at-risk populations.

Theoretically, I synthesize insights from the political economy of distribution, electoral incentives, and legislative studies literatures into the context of health, outlining and testing a theory of health resource distribution. While distribution is an established political economy topic, this project contributes to our understanding by tying health politics to its logical material consequence, patterns of mortality outcomes. Recognizing the breadth of the explanations established in prior work (Golden and Min 2013), I remain agnostic to the literature’s specific explanations, instead positing that politicians use a portfolio approach to distribution, wherein no single explanation can fully characterize government distribution. In essence, government distribution reflects a mixed strategy over a diverse set of political pressures. I test for the impact of four broad sources of political importance identified by the

literature: support levels of parties currently holding power, strategically important electoral districts, partisan differences in health politics, and legislator characteristics. I find that all have some degree of support.

In what follows, I discuss and integrate the various strains of theory in the political economy literature on distributive politics and generate hypotheses. I then introduce the specifics of Third Republic French health policy and the data, subsequently presenting statistical models predicting the sub-national distribution of spending in France and the resulting mortality differences between departments associated with that spending. Finally, I outline the commonalities between the early developed and modern developing country experience and make a case for generalizing my conclusions in the modern context.

Distributive Politics and Third Republic French Health

Politicians may face incentives to use health funds as a form of distribution. This pressure comes fundamentally from voters, who confront threats to their physical security. Physical security lies at the core calculus of well-being for voters, potentially trumping other material factors like income, employment, or ideology in the voting calculus. Insofar as voters place their continued health and life above other priorities in their short- and long-term interests, voters demand health protection from political parties and representatives. If this is the case, politicians can use particularistic benefits, which increase voter well-being, to manipulate electoral outcomes in their favor. Voters receiving distributive goods could be more likely to turn out and also more likely to vote for parties giving increased material benefits.

Voters must be able to connect improvements in their well-being due to particularistic transfers to politicians' promises and actions for transfers to be effective electorally (Downs 1957, 38). Health resources may meet this criteria. Public health funding can be visible, tangible, and attributable to parties and legislators for their reelection. Governments combat malaria, for example, by distributing nets, draining swamps, and distributing drugs. State agencies fight HIV/AIDS most effectively through distributing a complex cocktail of antiretroviral drugs. In my historical French case, the government mandated free hospital care to poor individuals added to eligibility lists starting in 1893. Faure (1990) shows that demand grew substantially from the public for medical care during the Third Republic, with especially lower and middle class citizens consuming care at greater rates and demanding better treatment over time. On the flip side, the French state acted as if health delivery mattered to the public, moving to expand state funded health programs with "serious intentions to medicalize the nation" (Faure 1990). Finally, the extensive political conflict by radicals and socialists over mandatory social insurance during 1920s and 1930s, especially health coverage, further suggests that Third Republic politicians considered extending government social benefits a vote winning strategy (Dutton 2002).

The aforementioned evidence for health particularism, however, is the only anecdotal. The use of health spending as a vote earning mechanism may not be viable either because it is not visible, sufficiently desired by populations, or easy to credit claim by politicians. In that case, France provides an opportunity to assess,

empirically, if health spending follows political patterns. I should find null or weak results for existing distributive theories if health spending is simply not feasible as distribution. To guide the analysis, I generate my hypotheses by synthesizing the political economy literature identifying the winners and losers of government distribution (Golden and Min 2013). This literature argues that politicians are most responsive to constituents who are politically important. Political actors could secure power for themselves by providing public health resources to critical constituencies. Politicians attempt to win votes in the short term and ensure survival of voters in the long term. Even if short-term provision is apolitical, health resource distribution can function as a long-term public goods investment akin to education systems or physical infrastructure construction (Beramendi et al. 2015).

My theoretical expectations follow a growing movement in the distribution literature, recognizing that politicians engage in mixed strategies, even within a given issue area (Albertus 2013). The supply of any individual policy should reflect multiple, competing political pressures. Rather than define and test a single type of group that should benefit (e.g., only core voters), I instead expect that politicians treat policy distribution as a portfolio, subject to a variety of political incentives simultaneously, describing a tapestry of competing pressures. With this approach in mind, I outline a theoretical story of political importance stemming from several possible factors, derived from the distribution literature, and test the independent effect of a variety of different explanations.

Rewarding Government Supporters

First, the presence of government supporters affects the distribution of public health resources to districts. Distribution models emphasize, in particular, the powers of incumbent governments to distribute particularistic policies (Dahlberg and Johansson 2002; Ansolabehere and Snyder 2006). Governing parties and politicians hold significant amounts of direct and indirect control over health, overseeing health ministries, setting budgets, and deciding upon implementation. I argue that one government health priority is to reward and protect government supporters with public health funds. Risk-averse politicians want to maximize the probability that the government's resources will go to ruling parties' core supporters when distributing health (Cox and McCubbins 1986). A given unit of distribution is more likely to reach a government supporter, allowing for targeting inefficiencies, if spent where there are more government supporters. By this logic, I anticipate that the higher the share of voters supporting the ruling party in a geographic area during the last election, the more health resources that area will receive.

Strategically Important Voters

While governments work to target high support districts with health resources, they can also target marginal or strategically important districts. Governments have incentives to use their control of resources as a carrot to persuade swing voters to vote for the incumbent government, especially when races are close (Lindbeck and Weibull 1987; Dixit and Londregan 1996). Specifically, governments attempt to win

votes with distribution in those districts where each changed vote has the highest probability of altering election results. This effect is therefore contingent on electoral institutions. For majoritarian institutions, close marginal races in which the government is highly competitive are prime targets for distribution (McGillivray 2004). Winning the votes of a few voters in close races can mean the difference between winning and losing seats. To operationalize the impact of close races on government incentives, I derive a measure of competitive races in France and anticipate that departments with more marginal districts will see increased health spending.

In addition to marginal races, legislative conditions also determine the strategic importance of certain voters. This logic mirrors the district logic at the legislative level (Cox 2009). Some districts, despite electing legislators outside of government, may be more politically important due to their representation in the legislature. Specifically, voters represented by pivotal legislators command extra influence in the distribution game (Krehbiel 1998). Due to the strategic importance of the median party and legislator, I expect governments in power to distribute health resources to pivotal party voters in order to gain their representatives' support for policies. In France, the pivotal French legislator is generally represented by the Republican, Radical, and Radical Socialist Party. Even when not in power, radicals were the center of virtually every parliament during the late Third Republic. Electoral institutions exacerbated this effect. In the French electorate, swing voters of pivotal radical center parties were much coveted by both right and left because they were needed to ensure electoral victory in the two-round single-member district (SMD) system. In order to ensure that centrist voters would split their way in elections, all French parties had incentives to target health benefits toward radical voters in order to win second rounds. More pivotal radical voters should lead to increased levels of health spending.

Left Parties and the Welfare State

Policy priorities of the government in power, in addition to the types of voters in the electorate, dictated health spending patterns. Governments placing a higher priority on health and social welfare policies should work harder to distribute more health funds nationwide. In the early twentieth century, ideologically left parties placed a high priority on improving public health within democracies. While all parties in Third Republic France had large constituencies of unhealthy and poor voters, especially in rural areas, only the socialists and communists created a specific party platform establishing social welfare and health as central themes. Historical anecdotes support this hypothesis, with socialist supported governments focusing on public hospital spending while in power (Smith 1998, 1076). I expect French governments including socialist or communist parties to increase health spending in all departments.

Regardless of which parties are in power, I hypothesize that the demands of pro-welfare left party voters will lead to increases in health distribution to their departments. The high salience of health to voters who support pro-welfare proletarian and left parties means that governments of other ideologies can cheaply

buy off left parties using health resources. In the ninetieth century in Europe, welfare state policies were often created by bourgeois or reactionary governments to pacify left constituencies of workers and peasants, such as Bismarck's social insurance programs (Baldwin 1990). Qualitative evidence indicates that this behavior occurred in France: socialist and communist constituencies were frequently mollified in the post-WWI period by right wing governments using health insurance and increased spending policies (Haine 2000, 144). I anticipate that socialist and communist strongholds should receive more health spending.

Legislator Characteristics

Existing research shows that powerful legislators with greater seniority hold the institutional power to bring more resources back to their home districts (Cox and McCubbins 1993; Aldrich and Rohde 2001; Golden and Picci 2008). In France, as in many other legislatures, senior deputies held more privileges, were more likely to hold leadership positions, and were more experienced in the legislative process than new legislators. As a result of these advantages, I anticipate that more senior members brought more public health resources to their home departments in order to ensure reelection.

Finally, expertise plays a role in the ability of legislators to secure health distribution for their departments. Legislators with specific policy expertise have an advantage over their peers in gaining resources. Legislators gain an informational advantage, and, in response, the rest of the legislature defers to these specialists on those issues (Krehbiel 1992). In France, Ellis's study of French deputies suggests that medical doctors and health professionals in the French legislature played a disproportionate role in shaping health policy in the Third Republic (Ellis 1990). Doctors authored many health-related bills and were the driving force behind reforms like the health assistance act of 1893 and health insurance bills of the 1920s. "French physicians were in an extremely favorable position in this political system" and "doctors controlled the levers" of health policy in the Chamber of Deputies (Immergut 1992, 82–83). I predict that departments with more medical professionals representing them received additional health funding.

French Medical Relief

To establish the link between distributive politics and health spending in developing countries, I test the impact of political variables on the distribution of French government medical assistance spending in departments and communes (Table 1). Specifically, I measure spending on *Assistance Médicale Gratuite* (AMG) during the later period of the French Third Republic, 1910–1939. AMG was funded by the state in order to bring medical spending for the poor under a rationalized government, rather than private charitable, control. It represents an early manifestation of the welfare state in France.

Relative to its neighbors, national laws providing health care for the poor came about late in France, only after the failure of local voluntary systems set up with

Table 1 Determinants of Increased Health Distribution to French Departments

Theory	Operationalization	Variable Name
Govt strongholds	% Support for govt	PctGovVote
Govt close races	% 2nd rounds govt party competitive	PctCloseRace
Pivotal voters	% Support for radicals	PctRadicalVote
Pro-health govt control	Socialists or communists in government	SocComRule
Pro-health strength	% Support for socialists and communists	PctSocComVote
Legislator strength	Average department legislative seniority	Legislator Seniority
Legislator expertise	% Delegation deputies health professionals	PctDeputiesMedical

All variables are hypothesized to have a positive impact on government spending on health in a department

virtually no central state or department help (Faure 1984, 597–599).¹ Creating the AMG system involved negotiating conflicts between the state, municipalities, doctors, and charities, culminating in a 1893 bill that was, in principal, an obligation to provide free care to all the poor (Faure 1984, 603). Care provided by AMG was urgent and vital for those eligible—the poor were clearly cut out of the pre-AMG health system—with medical care only accessible to about half of the French public pre-1893 (Smith 2003, 42). AMG meant a bed, care, and the difference between life and death from the variety of ailments afflicting France.

The funding was quite controversial when implemented in 1893, as hospitals suspected they would lose their autonomy and become the subject of political oversight. Many hospitals and communes initially opted out of the system entirely, preferring to perform their poor relief funded by charitable contributions. The French population covered stayed relatively constant before World War I, hovering around 5–6 % of the population, though with significant between department variance, with costs rising dramatically over time (Faure 1984, 603–604). If hospitals accepted AMG, their worst fears were sometimes confirmed when local party members demanded and received seats on hospital boards in exchange for public financial support (Smith 2003, 67). Squabbles also emerged between government bureaucrats and doctors about pay and commune participation (Ackerman 1990). The struggle between hospitals and the state to redefine the responsibility for public health characterized French pre-World War I health politics (Nord 1994). In the end, the economic crisis surrounding World War I ended the political battle in favor of government, with the state inheriting the predominant role in funding health for the poor in France (Smith 1998).

The French government's local bureaus of social assistance, administered by the Conseil Supérieur d'Hygiène Publique de France, which fell under the control of the Ministry of Interior or, later, Health, managed AMG funding to pay for the poor's health. The government tasked the bureaus with creating local lists of the indigent who would be eligible for AMG care (Smith 2003, 42). It was implementation and enforcement of free care for the poor, not the principles laid down in the 1893 law,

¹The middle and upper classes relied on other arrangements such as mutual aid societies to pay for care until the late 1920s (Dutton 2002).

that proved the barrier to systematic, need-based coverage: “health authorities applied from the outset a policy of rationing and cost-cutting, especially where drugs were concerned” and “provision of modern facilities was slow and limited” (Faure 1990, 446). In practice, AMG monies were distributed extremely unequally geographically (Weiss 1983, 66–72). Reflecting this, in my data, overall AMG variation is high, with a standard deviation close to its mean, and the variance of AMG across departments is high as well.² Nor does the distribution of health relief for the poor correlate with department mortality, being mildly negatively correlated (-0.102). In practice, the definition of the poor was flexible during the list making process, as the *nouvelles pauvres*, a new category of working poor, saw their incomes eroded by hard economic times during the interwar period. In response, some communes began to categorize even relatively middle class citizens such as shopkeepers, artisans, skilled workers, and pensioners as eligible for AMG on their lists (Smith 2003, 127).

The French central government, meanwhile, had significant opportunity to alter spending patterns. While local government contributed a large share of medical spending, as it had historically, the French central state increasingly played a leading role in the AMG system, taking on 22 % of the cost in a larger, richer department like Lyon and up to half of the cost in poorer departments (Smith 2003, 71). Furthermore, even where localities dominated funding, Third Republic governance remained centralized and legendarily bureaucratic, giving national politicians the opportunity to exert control over local policy. This is reflected in health policy, where the French center was “extremely powerful, [and] empowered itself with the right to appoint and dismiss municipal councillors and hospital and welfare administrators, not to mention its veto power over municipal budgets” (Smith 2003, 34).

In this environment, I advance the argument that French parties and deputies systematically manipulated AMG funding in order to protect voters, reward turnout, gain votes, and win elections. The centralization of the French state, and the significant financial contributions of the central state to AMG funds, provided it with leverage to play politics using a program originally intended to universally support those unable to pay. Politicians targeted AMG at some departments to deliver better overall public health by treating the sick poor. This intervention improved public health department-wide, as the poor were especially vulnerable to communicable diseases. Intervening in the poor’s health, in this way, improved the lives of everyone in the department, including voters not directly treated by AMG.

Data

Gathering data for all the variables included in the analysis required extensive archival work from primary French sources. Basic descriptive statistics for all theoretical variables and controls, given in Table 2, provide a general sense of the data. While AMG funding began in 1893, my data begin in 1910. While this is regrettable, historical accounts indicate that the program was limited until World War I, as the

²30 year average department AMG is 4.69 while the standard deviation of 30 year mean department AMG is 3.16.

Table 2 Summary statistics

	Mean	Std Dev
Medical assistance	7.185	5.874
Ln(Medical assistance)	1.686	0.769
Mortality rate	1776.109	704.294
Ln(Mortality rate)	7.451	0.262
PctGovVote	0.625	0.264
PctCloseRace	0.337	0.327
PctRadicalVote	0.254	0.202
SocComRule	0.267	0.442
PctSocComVote	0.192	0.153
Legislator seniority	8.118	3.791
PctDeputiesMedical	0.100	0.137
French GDP/cap	3.804	0.620
Hospital income	25.529	21.266
Pop density	179.056	989.468

central state struggled with local private charities and communes over the responsibility for social relief efforts. The opportunity for the central government to exert its power over AMG spending only truly grew around World War I, when local systems of poor relief broke down.

Both dependent variables in the analyses, AMG funding and mortality data, were measured at the department level for 87 departments. French primary sources provided yearly AMG spending at the department level. I controlled AMG figures for size of department using French population estimates and adjusted AMG figures to 1930 francs. I then logged the data for normality, and in order to reduce the influence of extreme values.³ The dependent variable used in the main analysis is logged 1930 francs per person of AMG in each department. Figure 1 plots the distribution of the main spending dependent variable over time, in particular showing its dip during World War I.

There were seven elections held from 1910 to 1939.⁴ To measure the hypotheses operationalized with electoral strength, I collected electoral data for all available districts in every election during the late Third Republic period of 1910–1939.⁵ I concentrated on the lower Chamber of Deputies' election results, as the French Senate had significantly fewer powers and was infrequently up for reelection. I used first round vote totals for all candidates in every race from Lachapelle's contemporary accounts and repeat previous values during periods between elections (Lachapelle 1914).

I aggregated all electoral data to the department level. Aggregation was necessary because while departments are the primary geographic administrative units with

³Statistical results are similar with unlogged dependent variables

⁴Elections took place in 1910, 1914, 1919, 1924, 1928, 1932, and 1936.

⁵I exclude French colonies.



Fig. 1 AMG Spending from 1910-1939

available AMG data, electoral districts are drawn within them, with each department typically containing between four to ten single member districts. A potential concern, then, is the possibility of finer grained variation existing within departments, potentially masked by the aggregate analysis. We must be aware of the resulting limitations of the study, allowing me to draw valid department level rather than individual district political conclusions, but should not overstate the concern. While France is a relatively large country, its split into 87 departments still yields reasonably compact and highly heterogeneous administrative units: the city of Paris, for example, has four departments devoted to its densely populated center and outer ring while other departments like *Hautes-Pyrénées* or *Hautes-Alpes* are largely mountainous, agricultural and have no major cities. The descriptive statistics presented in Table 2 illustrate the heterogeneity, showing significant variation on all the aggregated variables. Finally, the expectations drawn from extant distributive theory remain salient even for aggregated data, and many studies in the literature use a higher level of data aggregation.⁶

Turning to the measurement of my hypotheses, the political clout of core voters of parties in government was measured using the first round percentage of votes garnered by parties of the current government in the last election in a department. Pivotal centrist voters are represented by the aggregate vote percentage received by radical candidates in the first round within a department. Similarly, I measure left wing, pro-health ideology effects with the percentage of voters who supported

⁶But see the discussion by Cox (2009) for an extended take on the issues related to aggregation in the study of distribution.

socialist and communist parties in the last legislative election.⁷ All vote variables feature significant change over time and French elections were not static affairs with strongly partisan voters always supporting the same parties—right republicans surged to sweeping wins after World War I, for example, and the communist party grew explosively during the 1930s after the economic pain of the great depression.

$$PctGovVote = \frac{\sum GovParty\ Votes}{\sum Votes\ Cast} \quad (1)$$

$$PctRadicalVote = \frac{\sum RadicalParty\ Votes}{\sum Votes\ Cast} \quad (2)$$

$$PctSocComVote = \frac{\sum Socialist/Communist\ Votes}{\sum Votes\ Cast} \quad (3)$$

By contrast, measuring district marginality requires more discussion. The French Third Republic was a two-round SMD system.⁸ In approximately 600 districts, candidates of multiple parties competed in a first-round SMD race. If no party received a majority of votes, a second-round runoff election, usually involving only the top two candidates, was held to decide the winner. Once in the second round, surviving candidates engaged in an idiosyncratic and volatile process of convincing supporters of eliminated candidates to vote for them. As a result, the parties making it to the second round usually believed that the election could go either way. This meant that the most valuable votes to the government were in districts where a party involved in the government was present in a second round. Health resources spent on swing voters in safer districts would not change electoral outcomes for the government and thus be politically wasted. I therefore operationalize close races by measuring whether the election went to a second round and a measure of whether a government party seriously competed in that second round. I coded a dummy variable indicating a second round occurred in a district and at least one government party took first or second in the first round.⁹ I then aggregated all electoral races in a department and calculated the percentage of seats in a department counted as close races in the last legislative election, resulting in the following variable:

$$PctCloseRace = \frac{\sum \#2ndRoundRaces\ w/GovParty\ 1st\ or\ 2nd\ in\ Round\ 1}{\#Races} \quad (4)$$

⁷Note that the omitted category of voters in the model is therefore the wide variety of non-radical centrist and right republican parties.

⁸For the legislative elections of 1919 and 1924, the French experimented with a form of department-wide PR list hybrid with majoritarian characteristics (Cole and Campbell 1989, 63–66). A list system provides no strategic incentives for governments to target swing voters in specific races. In the PR elections, all voters within a department count equally toward gaining another seat. As a result, I code the elections in this period as having no close races. An alternative approach to check robustness, dropping all observations from these years, reduces the magnitude of the coefficient but maintains statistical significance at the 0.10 level.

⁹The coding oversimplifies the system because more than two candidates could enter the second round, but these dark horses were not common and usually not competitive.

While cabinet instability was high in the Third Republic, these frequent changes belied more normal party coalition stability, as most governments were merely a reshuffling of cabinets. I rely on close research of historical sources to best characterize the overall partisan cabinet identity of governments in the Third Republic for a given year (Anderson 1977; Bernard and Dubief 1985; Cole and Campbell 1989; Haine 2000). I categorized parties into broad party identities: right republican, moderate republican, independent radical, radical socialist, independent socialists, SFIO, and communist. Every party group joined government at least once in the period, with government often transferred between left and right party coalitions, with radicals anchoring both types. To measure the effect of parties with pro-health incentives, I include a dummy variable indicating if the SFIO, independent socialist, or French communist parties were in or supporting the government coalition.

To measure seniority and professional background of deputies, I used data gathered by Graham from French biographical sources (Graham 1983). I calculated seniority as years between first entry and last departure in the Chamber of Deputies. I then aggregated data by department, averaging the seniority of all deputies in that department.¹⁰ I use the resulting measure of average seniority of departmental delegations to the French Chamber of Deputies to operationalize hypotheses about legislator power. I operationalized expertise using profession codings from Graham (Graham 1983). I noted if a legislator was coded as being employed in “medicine, including pharmacy and dentistry.” I then calculated the percentage of deputies listed as medical professionals in a department’s delegation.

Finally, to predict mortality fluctuations due to changes in funding, I assembled an extensive sub-national dataset on French mortality patterns. I gathered mortality counts by department for a variety of causes from French annual statistics and causes of death records for the relevant years (Statistique Général de la France 1840; Statistique Général de la France 1910). I adjusted mortality counts into mortality rates per 100,000 people by department, and then logged the per capita variable. I measured mortality rate per person from all causes to best represent broad-based health outcomes.

Controls

I include controls in the tests to account for the non-political causes of health spending. First, historical shocks may play a role in health funding. In France, World War I had a negative impact on all French non-military spending. World War I consumed French resources and devastated much of its industry and tax base. To roughly account for this, I include a World War I dummy. Due to increased government spending on the war, departments received lower levels of AMG.

Income has an effect on the ability of governments to distribute AMG. In boom years, I expect the French government to bring in higher revenue and, all things being equal, spend more on health nationwide. To account for the effect of income on spending, I included adjusted yearly estimates of French GDP per capita, in

¹⁰This closely resembles the method used in a study of the Italian parliament (Golden and Picci 2008).

thousands, taken from Maddison (2010). I expect that higher French GDP per capita led to more AMG spending per capita by the central government.

Finally, I include a measure of urbanization. In France, urban areas have historically been the focus of public health efforts. Sanitation, hospital funding, and immunization are most efficient in cities, as it is there that they reach the most citizens with each project. Dense departments were more desirable targets for health projects, all else being equal. To measure this, I calculated the population per square kilometer in each department. I anticipate that high density departments received more medical assistance funding per person.

Predicting French Health Spending from 1910 to 1939

To test the distributional hypotheses in Table 1, I performed linear regressions predicting logged department-year per capita medical assistance spending. Medical assistance is a continuous variable that exhibits change over 30 years and across the 87 departments, with a relatively normal distribution once logged. In order to account for panel characteristics, I include fixed effects for departments in all models. The fixed effects account for unobservable, static differences between departments that may affect funding levels, as well as other unchanging patterns between departments like geography, climate and idiosyncratic political factors.¹¹ Note that this also implies that all results here are based on within-department variation in political variables, not on differences across departments. I also estimate the model with other specifications to account for an alternate, non-political, motivation for health spending, need (model 2), and a linear trend (model 3).¹²

As Table 3 shows, the results are largely supportive of the hypotheses generated from distribution theory. There is evidence that French deputies distributed AMG funds for electoral ends, based on the political importance of departments. Save expertise, the operationalizations attain not only conventional statistical significance but also substantive significance in predicting the number of francs per person of AMG sent to departments. To illustrate the magnitude of effects, Table 4 shows logged AMG predictions from model 1 when variables are changed by a standard deviation or from 0 to 1. In addition, the table shows the powerful substantive effect of structural changes like the rate of urbanization and explosive growth in wealth of the 1920s, as one might expect from the period.

Parties in power used AMG to reward their supporters' departments, sending francs to departments that contained higher percentages of their voters. Evidence here accords with the hypothesis that, with medical assistance, governments attempted to secure future votes by protecting their own voters at the expense of others. The result is substantively significant, as well. A change in a department's government support

¹¹ While, ideally, I could also include dummies for time in addition to department, electoral variable observations are repeated from the previous election. Year fixed effects therefore correlate highly with repeated election observations. The [Supplemental Appendix](#), however, contains a decade dummy specification.

¹² See the [Supplemental Appendix](#) for many additional specifications accounting for heterogeneity, other explanations, and correlates.

Table 3 Predicting Log of Assistance Médicale Gratuite Funding per Capita

	Model 1 Base	Model 2 Lag mortality	Model 3 Year trend
PctGovVote	0.262* (0.038)	0.270* (0.038)	0.198* (0.036)
PctCloseRace	0.327* (0.035)	0.317* (0.036)	0.262* (0.033)
PctRadicalVote	0.737* (0.053)	0.714* (0.054)	0.838* (0.050)
SocComRule	0.145* (0.020)	0.141* (0.019)	0.054* (0.019)
PctSocComVote	1.460* (0.094)	1.473* (0.094)	0.698* (0.099)
Legislator seniority	0.009* (0.003)	0.009* (0.003)	0.005* (0.002)
PctDeputiesMedical	0.142* (0.070)	0.135 (0.071)	0.146* (0.066)
French GDP/cap	0.431* (0.019)	0.430* (0.020)	0.197* (0.022)
WWI	-0.735* (0.032)	-0.726* (0.033)	-0.701* (0.030)
Pop density	-0.002* (0.000)	-0.002* (0.000)	-0.002* (0.000)
Lagged mortality		-0.000* (0.000)	
Year trend			0.030* (0.002)
R ²	0.6892	0.6947	0.7233
N	2438	2337	2438

AMG measured logged francs per capita, all financial variables adjusted to 1930 francs. Model estimated using OLS regression. Coefficients presented and, in parentheses, standard errors. Fixed effect coefficients for the 87 departments omitted

* *p* value less than .05

from the mean of 62.5 % one standard deviation to 88.9 %, a government stronghold, leads to a predicted logged 0.07 franc per person increase of medical assistance in a given year. That represents an increase in funding of 4 % of the average logged department AMG. Electoral support for the ruling party paid off in terms of increased department AMG health benefits.

In addition, the data is consistent with a role for strategic electoral considerations. Table 4 shows two effects of strategic importance: the impact of increasing the government's participation in second rounds in a district and the impact of a heavy radical voter presence in a department. Both variables predict large increases in AMG funding. While both effects are notable, the influence of radical support in a department is especially striking. Moreover, it is well supported in virtually all qualitative evidence regarding the centrality of radical voters in the late Third Republic political system.

Table 4 Predicted effects

	Δ One Std. Dev.	% of Mean DV	
PctGovVote	0.069	4.1 %	
PctCloseRace	0.107	6.3 %	
PctRadicalVote	0.149	8.8 %	
PctSocComVote	0.223	13.2 %	
Legislator Seniority	0.036	2.1 %	
PctDeputiesMedical	0.019	1.1 %	
	0/1 Change	% of Mean DV	
SocComRule	0.145	8.6 %	
Controls	Δ One Std. Dev.	% of Mean DV	
French GDP/cap	0.267	15.8 %	
Pop Density	1.583	93.8 %	
0/1 Change	% of Mean DV		
Predictions generated from model 1	WWI	-0.735	43.6 %

The model also bears out the hypotheses regarding health partisanship. Table 4 shows that left government control was important for social spending. Simply having a socialist or communist government in power led to an unlogged increase of approximately 1 franc, or 18 % of the 5.4 franc average dependent variable value.¹³ It appears that when in power, governments including socialist or communist parties were particularly keen to support French departmental health with AMG. In addition, regardless of the party in power, governments had a propensity to buy off heavily left districts with health funds. Increases in socialist or communist support within departments led to large distributions of medical assistance. In fact, this is substantively the largest result in the model.

Finally, increases in legislator seniority are also associated with higher levels of AMG, with substantive effects seen in Table 4. When we consider the effects of the variable on logged AMG values, a particularly experienced delegation with an average of 12 years experience receives about 0.072 francs more logged AMG per person than one with an average of 4 years of experience, about 4.3 % of the mean AMG value.¹⁴ By contrast, while increases in medical professional presence in office improve the ability of a department to bring home AMG in base models, the magnitude of the effect is quite small. Moreover, this variable is not robust to other specifications, providing little support for distributive political interventions by French doctors.

A strong alternate explanation for health spending is need or demand among constituents. Here, I follow the lead of Golden and Min (2013), who argue that the next

¹³Note that the socialist/communist government variable is slightly vulnerable to specifications arbitrarily controlling for time (e.g. decade dummies) included in the [Supplemental Appendix](#), probably because left governments concentrated near the end of the Third Republic.

¹⁴Seniority results are slightly vulnerable to specification, especially decade dummy specifications.

step for empirical models of distribution is the inclusion of variables that measure other, baseline, explanations of distributive spending. I evaluate the effect of a simple demand model for spending relative to political factors in model 2. This specification includes a lagged mortality rate variable to roughly simulate demand for AMG. If non-political demand drove AMG spending, higher mortality districts would receive more AMG because health spending would flow from the government to areas with greater mortality. The raw data suggests that it does not: the correlation between health spending and mortality is -0.102 . When I include lagged mortality rate in statistical tests, I find that political variables still perform as hypothesized. With respect to the demand variable, the opposite relationship between need and spending appears: poor health departments with higher previous year mortality predict lower AMG disbursements. This indicates that AMG is not only distributed without respect to need, but is in fact distributed in a way that specifically rewards healthy departments and neglects unhealthy departments. From the perspective of commonsense policymaking, the results of model 2 might be surprising, but they do accord with the literature on international health outcomes such as O'Donnell et al. (2007), who find persistent inequalities in how health is distributed that do not follow basic indicators of need.¹⁵

Model 3 includes a linear year trend to control for over time changes in AMG. Year represents an a theoretical control for the linear effect of time, and it may also roughly represent the rise of support among the public for the French welfare state and the changing social relationship between government and citizens in this period. A well-developed literature on the rise of the welfare state discusses the new social pact between early modern developed democracies and their citizens (Baldwin 1990). Voters began to expect governments to provide for social and economic outcomes as well as property rights and the basics of governance. In model 3, a linear year variable predicts a statistically significant increase in AMG over time, perhaps as citizens begin to expect governments to spend more on health policy. Meanwhile, the importance of political conditions in determining AMG spending remains.

Predicting Mortality Health Outcomes in France

The AMG results establish that politicians manipulated medical aid to French departments, but did this medical aid result in appreciable differences in department health outcomes? To determine if politicians affected health outcomes with their distributive behavior, I model yearly French department mortality rates. I anticipate that when politicians distribute AMG to departments in order to win electoral support, their efforts lead to fewer deaths. In essence, I seek to establish if citizens in France lived and died because distributive political incentives affected levels of medical assistance. These tests engage an extant literature on the relationship between mortality

¹⁵The Supplemental Appendix presents a wage specification that shows similar non-need based, pro-rich, distributions of AMG.

and public health, where some scholars find no relationship between increased public health efforts and mortality, calling into question the role of public-provided health in easing mortality crises (Filmer and Pritchett 1999; Deolalikar 2005). Others find that public health spending does reduce mortality ((Gupta et al. 2003; Cutler and Miller 2005), or that reductions occur conditional on other factors like government effectiveness, poverty, or clientelism (Bhalotra 2007; Rajkumar and Swaroop 2008; Diaz-Cayeros et al. 2012).

Statistically modeling the spending-mortality relationship raises thorny methodological issues. Modeling mortality rates due to health spending requires an approach that attempts to account for endogeneity between health spending and mortality. High mortality rate departments should receive, through reverse causation, higher health funding. To illustrate, in model 4 in Table 5, I regress logged mortality rates on AMG spending directly and find virtually no relationship.

To attempt to address the endogeneity between health spending and mortality, I utilize a two-stage least squares regression estimator. First, I choose instruments for the endogenous variable, medical assistance to the poor. Instrumental variables must effectively predict health spending but be otherwise unrelated to mortality rates, meeting the exclusion restriction. I argue that the political variables from Table 1 may fulfill these criteria given the nascent state of French welfare. Placing individuals on AMG aid lists was the obvious and flexible tool available to French legislators to bolster public health in particular departments. I contend that legislators manipulated individual department mortality using AMG funding to hospitals and clinics for the poor. While there is no definitive statistical test of the instrumental variables assumptions, the two-stage least squares mortality model passes common diagnostic checks, exhibiting no signs of either overidentification or weak identification. Sargan's test does not reject its null hypothesis (p value = 0.4085), suggesting that the instruments are valid and uncorrelated with errors. Nevertheless, the possibility remains that some of the variables could have feasible causal connections to mortality rates, violating the exclusion restriction. As a result, I performed robustness checks with the model omitting some variables potentially related to mortality outcomes.¹⁶ While there is a strong logic behind legislators using this early health measure to reduce mortality, it is perhaps difficult to argue that the causal identification strategy here is ironclad, so at worst the results may be understood as correlations rather than definitive tests of AMG causation.

In addition to the political variables used in the instrument of AMG, mortality is a consequence of a number of factors and therefore demands control variables. I use the same control variables included in the previous analysis. These variables include World War I, French GDP per capita and population density. I also included a new control in the mortality model, department hospital revenue. Department hospital revenue controls for private health spending by individuals. I expect citizens to pay more fees, spend more on health care, and visit hospitals more frequently where mortality rates are high. To that end, I calculated yearly, per capita, department-wide hospital budgets from primary sources (Statistique Général de la France 1895).

¹⁶See Supplemental Appendix, models 15 and 16.

Table 5 Predicting the log of department mortality rate

	Model 4	Model 5		Model 6
		1st stage	2nd stage	
Log AMG per capita	0.008 (0.012)		−0.114* (0.026)	
PctGovVote		0.174* (0.035)		−0.068* (0.023)
PctCloseRace		0.239* (0.032)		−0.036 (0.021)
PctRadicalVote		0.558* (0.049)		−0.069* (0.032)
SocComRule		0.105* (0.018)		0.001 (0.012)
PctSocComVote		1.085* (0.088)		−0.122* (0.056)
Legislator seniority		0.006* (0.002)		−0.000 (0.002)
PctDeputiesMedical		0.120 (0.064)		−0.018 (0.042)
French GDP/cap	−0.086* (0.011)	0.364* (0.017)	−0.028 (0.016)	−0.076* (0.011)
PrivateSpend	0.000 (0.000)	0.015* (0.001)	0.003* (0.001)	0.002* (0.000)
WWI	0.057* (0.017)	−0.631* (0.030)	0.008 (0.019)	0.111* (0.019)
Pop density	−0.002* (0.000)	0.001* (0.000)	−0.002* (0.000)	−0.001* (0.000)
R^2	0.1635		0.1263	0.1140
N	2455		2429	2588

AMG measured in logged francs per capita, mortality in logged deaths per 100,000. All financial variables adjusted to 1930 francs. Model 5 estimated using two stage least squares regression, models 4 and 6 using OLS regression. Coefficients presented and, in *parentheses*, standard errors. Fixed effect coefficients for the 87 departments omitted in all models

* p value less than .05

Predicting Mortality

As anticipated, the effects of politics on AMG and mortality reveal themselves when I attempt to account for endogeneity with the instrumental approach in model 5. I, again, use fixed effects for departments. The first-stage regression in model 5, on

Table 5, indicates very similar statistical and substantive effects of politics on the distribution of AMG funds as the earlier results (models 1–3) predicting funding.

The core result of AMG's effect on mortality, however, is now statistically significant with sizeable effects. Model 5 indicates that politicians affected funding, but there were also changes, in turn, in mortality in their departments. Instrumented medical assistance has a negative impact on mortality per person within French departments. We can directly interpret the coefficient of medical assistance as an elasticity since both variables are on the natural log scale. For every 1 % increase in AMG spending per capita a department received, instrumenting for health spending with politics, predicted mortality rates decreased by 0.11 %. This represents a modest but noticeable effect on number of deaths, given that average mortality rate in a French department in my sample was 1787 per 100,000. A 5 % increase in spending would lead to about nine fewer deaths per 100,000, or approximately 45 fewer deaths in the average department in a given year.

One possible counterargument against the causal spending-mortality story is that politicians, on aggregate, favored some departments using all forms of government policy, not just health spending. In this scenario, AMG spending is not a major determinant of lower mortality rates, but only correlated with all other forms of increased spending such as economic stimulus, subsidies, infrastructure, etc. To roughly test for this effect, I regress mortality outcomes directly on my measures of political importance in model 6. If other forms of government largesse also created lower mortality rates, I would expect to find a strong, direct relationship between being in a critical district and lower mortality. While model 6 suggests some evidence of connection between politics and mortality, with most variables in the predicted direction, only some achieve statistical significance and the results are not as strong or clear-cut as those using instrumented AMG. These models indicate that while French decisions about a major health program for the poor (model 5) are associated with decreased mortality rates, we still cannot entirely rule out some role for other forms of favoritism toward key departments driving mortality outcomes (model 6).

Health, Historical Cases and Distributive Politics

The empirical results from the Third Republic are consistent with the theory that French politicians shaped the distribution of AMG, responding to political incentives. Predicting spending, the evidence from France confirms the literature's current theoretical predictions about the distributional game played by politicians, save for hypotheses regarding expertise of legislators. The results support a growing literature suggesting that distribution occurs as a portfolio, not as a binary strategic choice; numerous distributional pressures simultaneously codetermined spending. There is no single smoking gun explanation of how politicians spend particularistically. In addition, the results provide evidence that politicians altered resultant mortality outcomes through spending. Health distribution behavior may have profound consequences, determining the rate that populations die in regions. The tests therefore tie distributive behavior not just to changes in spending, but to concrete welfare outcomes. Consequently, domestic and international actors must

pay careful attention to underlying patterns of distributional politics in order to help reduce disease and misery rather than strictly concentrating on capacity and transparency.

But what of the external validity of the early European results to the modern day? Unlike other studies on developing country health, my data hail from an environment devoid of relief aid from NGOs, international organizations or foreign governments, and give us a clear observation of domestic health spending on the poor. Scholars generally confine tests of the domestic politics of health crisis to the modern developing world. Developing world politicians, however, play a complex political game with international organizations and non-governmental organizations (Wright and Winters 2010). International relations scholars find that donors have political and strategic interests, and often give aid to reflect those factors rather than recipient need (Alesina and Dollar 2000; Andersen et al. 2006). Furthermore, donors give aid in ineffective forms that force recipients to set priorities in accordance with donor interests (Easterly and Pfitzner 2008). Indeed, donors will go to great lengths to accomplish their goals, including bypassing developing country governments entirely (Dietrich 2013). Meanwhile, recipients find their own preferences subjugated to international actors because they must substitute international health spending for domestic funds (Lu et al. 2010).

In this international environment, empirical investigations of the decisions of domestic actors are biased. The interests of international actors may overwhelm attempts to perform valid empirical analysis of the health consequences of distributive politics in modern developing countries, or in any policy area subject to large-scale foreign assistance. International actors have preferences, perhaps even directly contradictory to domestic needs, about spending. In health, for example, donors shape domestic disease response by giving and conditioning money for high cost of treatment threats (e.g., HIV) that can cross borders while neglecting funding for much more deadly mundane tropical diseases (Steele 2011), often forcing domestic governments to match or support international efforts to receive funds. Exploring how domestic politicians would choose to respond to unhealthy citizens, therefore, cannot be disentangled from how and where their donors want to spend. By contrast, domestic politicians in historical cases were unencumbered by the need to serve international audiences. Indeed, donating or loaning money to other countries for their populations' health was unthinkable in the early 1900s. Turn of the century cases isolate the domestic pressures faced by modern developing world politicians in analogous health situations.

Historical European states also possessed political parallels to modern developing states. In France, democracy was new and only recently institutionalized, governments rose and fell frequently, and extreme political action like strikes and riots were common. In addition, the party system was in flux throughout the period, allowing the French socialist party, the Section Française de l'Internationale Ouvrière (SFIO), and French Communist Party to rise to prominence. Moreover, domestic politicians had ample opportunity to distribute health to satisfy their electoral needs and establish particularistic relationships with voters (Hutton et al. 1986, 277–278), a phenomenon

widely noted in modern developing democracies. In politics, as well as level of development, there are striking parallels between early Europe and the modern developing context, emphasizing the potential utility of exploring the past in order to draw general conclusions about the present.

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