After a strong performance in her first Democratic presidential debate, Senator Kamala Harris of California saw a significant increase in support in three polls released this week, as she and the rest of the Democratic primary field cut into the lead that former Vice President Joseph R. Biden Jr. has enjoyed since entering the 2020 race.

The three polls of likely Democratic voters — two were national surveys, and one polled Iowa caucusgoers — all showed Ms. Harris leaping into second place in the days after last week’s debates. They also showed a dip in support for Mr. Biden, though more than one in five respondents still said he was their first choice to become the Democratic presidential nominee.

Taken together, the polls also continued a broader trend in which Senator Elizabeth Warren of Massachusetts has gained ground as Senator Bernie Sanders of Vermont has fallen back. Ms. Warren remained solidly in the top tier, finishing third in all three polls; Mr. Sanders, who led several polls before Mr. Biden entered the race, finished fourth in each of them. The differences between the two were within the margins of error and thus statistically insignificant.

All three polls were conducted by phone within four days of the first round of Democratic debates last week. While Ms. Harris appeared to benefit the most from her performance, gains in polling for particular candidates immediately after debates are often temporary.

A national poll released Tuesday by Quinnipiac University had the slimmest margin between Mr. Biden and Ms. Harris, showing Mr. Biden with the support of 22 percent of respondents and Ms. Harris with 20 percent. That poll surveyed 554 respondents and had a margin of sampling error of plus or minus five percentage points.
The Iowa poll, which surveyed 500 likely Iowa Democratic caucusgoers, showed a larger gap between the two. Mr. Biden was the first choice of 24 percent of likely Iowa caucusgoers, and Ms. Harris had 16 percent support. The poll was released by Suffolk University on Tuesday and had a margin of error of four percentage points.

A third poll, published by CNN on Monday, showed Mr. Biden with a five-point lead over Ms. Harris nationally, with a margin of error of three percentage points.

Mayor Pete Buttigieg of South Bend, Ind., finished fifth in each of the polls, with single-digit support. Even as Mr. Buttigieg raises significant sums of money — his campaign announced this week that it had collected $24.8 million in the past three months — the new surveys indicate that he is still struggling to connect with rank-and-file Democrats.

Collectively, the new polls suggest that Ms. Harris benefited from an exchange with Mr. Biden during the debate on Thursday in which she highlighted his record on school busing and desegregation. Ms. Harris had been polling in the high single digits in most of the surveys taken before last week's debate.

The same type of post-debate bump was not evident for Julián Castro, the former housing secretary and former mayor of San Antonio. Mr. Castro memorably challenged former Representative Beto O’Rourke of Texas on immigration during Wednesday’s debate, and many political experts declared him the winner of the night. But his support in the three post-debate polls remained stable at around 1 percent.

Mr. O'Rourke, who was seen as a rising Democratic star after his close Senate race last year, earned only 1 percent support in the Quinnipiac and Suffolk polls. It was the first time Mr. O'Rourke received support that low in polls that can be used to qualify for the Democratic debates.

The Suffolk survey also asked Iowans which candidates had exceeded expectations at the first debates. The largest share of voters said Ms. Harris had done so, and the largest share said Mr. Biden had underperformed.