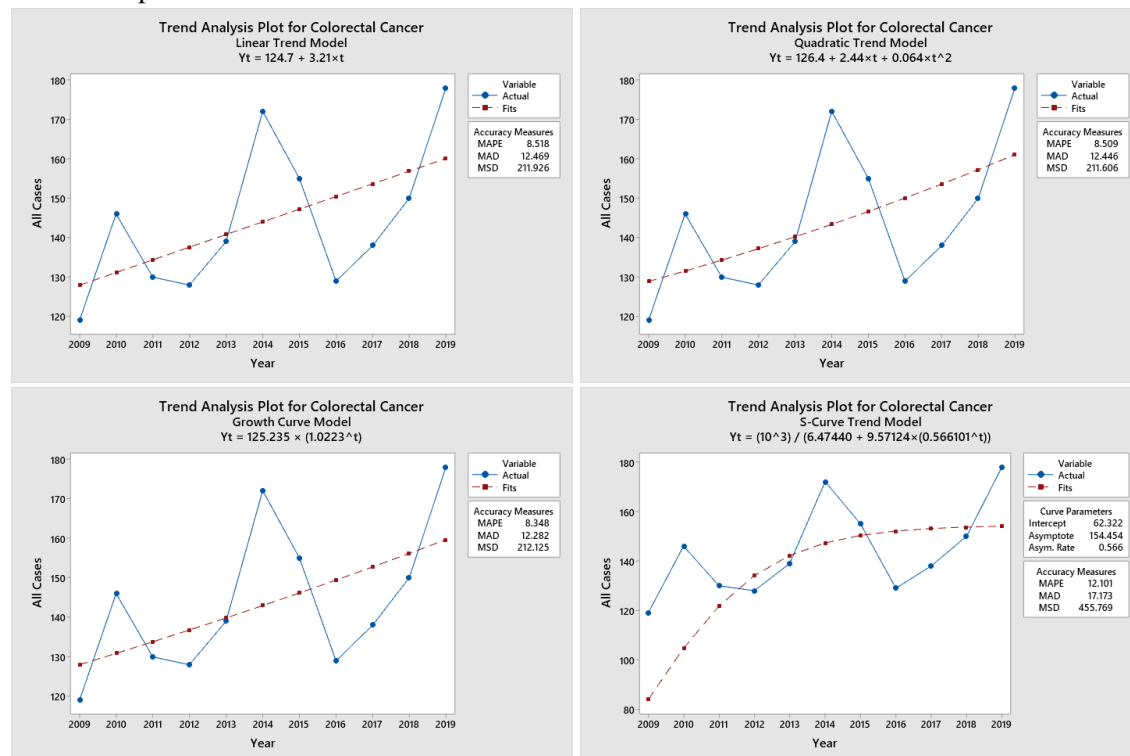**Supplementary File 4.**

Detailed analysis for forecasting future ten-year incidence of colorectal cancer using the best-fitted curve model obtained from regression analysis among all patients based on tumor location and tumor side involvement

a. Regression Model for Total CRC Cases

1. Curve Options

Model	Automatic Fitted-Curve	Accuracy Measurements		
		MAPE	**MAD**	**MSD**
Linear	$Yt = 124.7 + 3.21t$	8.518	12.469	211.926
Quadratic	$Yt = 126.4 + 2.44t + 0.064t^2$	8.509	12.446	**211.606**
Exponential Growth*	**$Yt = 125.235 \times (1.0223^t)$**	**8.348**	**12.282**	212.125
S-shaped	$Yt = 10^3 / (6.4744 + 9.5712 \times (0.5661^t))$	12.101	17.173	455.769

The best-fitted model is the one that has the lowest value for three parameters (MAPE, MAD, and MSD), or at least for two parameters out of three, or at least having the lowest value for MAPE.

2. The significance test results for the slope of curve estimation (i.e., Exponential growth model) employing the ANOVA statistical test in SPSS.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.053	1	.053	4.558	.062
Residual	.106	9	.012		
Total	.159	10			

The independent variable is Year.

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3. The forecast of the number of cases in the following ten-year period using the Exponential growth model.

Year	Forecasted Cases
2020	163.163
2021	166.800
2022	170.518
2023	174.319
2024	178.205
2025	182.177
2026	186.238
2027	190.389
2028	194.633
2029	198.972
Mean	**180.541**
Total	**1,805.41**

b. Regression Model for Total Colon Cancer Cases

1. Curve Options

Model	Automatic Fitted-Curve	Accuracy Measurements		
		MAPE	**MAD**	**MSD**
Linear	$Yt = 31.60 + 3.309t$	9.9302	5.2661	45.2926
Quadratic	$Yt = 39.78 - 0.47t + 0.315t^2$	9.4024	5.0220	**37.5685**
Exponential Growth*	**$Yt = 34.58 \times (1.0638^t)$**	**9.1430**	**4.9466**	41.4342
S-shaped	$Yt = 10^3 / (14.8862 + 26.4553 \times (0.747822^t))$	10.9567	5.7949	66.4672

The best-fitted model is the one that has the lowest value for three parameters (MAPE, MAD, and MSD), or at least for two parameters out of three, or at least having the lowest value for MAPE.

2. The significance test results for the slope of curve estimation (i.e., Exponential growth model) employing the ANOVA statistical test in SPSS.

ANOVA

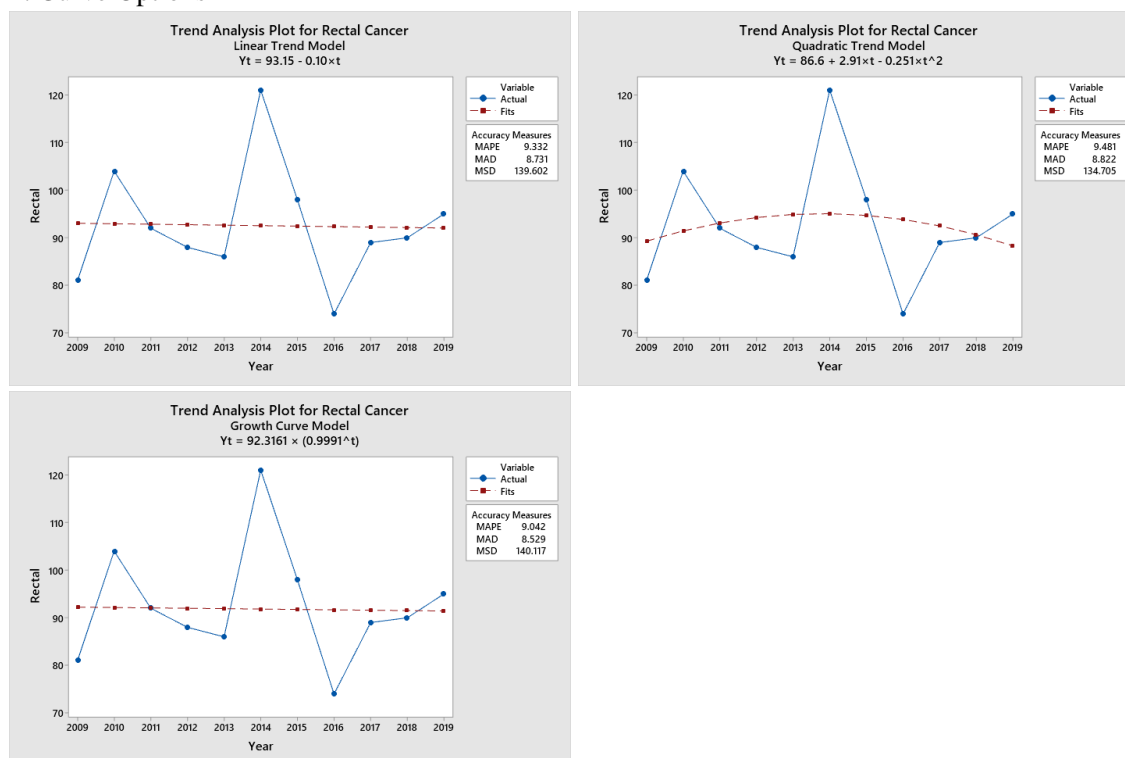|	Sum of Squares	df	Mean Square	F	Sig.
Regression	.421	1	.421	29.084	**.000**
Residual	.130	9	.014		
Total	.551	10			

The independent variable is Year.

3. The forecast of the number of cases in the following ten-year period using the Exponential growth model.

Year	Forecasted Cases
2020	72.652
2021	77.288
2022	82.221
2023	87.468
2024	93.051
2025	98.989
2026	105.307
2027	112.027
2028	119.177
2029	126.783
Mean	**97.4963**
Total	**974.963**

c. Regression Model for Total Rectal Cancer Cases

1. Curve Options

Trend Analysis Plot for Rectal Cancer
Linear Trend Model
$Yt = 93.15 - 0.10 \times t$

Accuracy Measures
MAPE 9.332
MAD 8.731
MSD 139.602

Trend Analysis Plot for Rectal Cancer
Quadratic Trend Model
$Yt = 86.6 + 2.91 \times t - 0.251 \times t^2$

Accuracy Measures
MAPE 9.481
MAD 8.822
MSD 134.705

Trend Analysis Plot for Rectal Cancer
Growth Curve Model
$Yt = 92.3161 \times (0.9991^t)$

Accuracy Measures
MAPE 9.042
MAD 8.529
MSD 140.117

Model	Automatic Fitted-Curve	Accuracy Measurements		
		MAPE	MAD	MSD
Linear	Yt = 93.15 – 0.10t	9.332	8.731	139.602
Quadratic	Yt = 86.6 + 2.91t + 0.25t^2	9.481	8.822	**134.705**
Exponential Growth*	**Yt = 92.3161 × (0.9991^t)**	**9.042**	**8.529**	140.117
S-shaped	*Error: Can not fit the model to these data*	*n/a*	*n/a*	*n/a*

*The best-fitted model is the one that has the lowest value for three parameters (MAPE, MAD, and MSD), or at least for two parameters out of three, or at least having the lowest value for MAPE.

2. The significance test results for the slope of curve estimation (i.e., Exponential growth model) employing the ANOVA statistical test in SPSS.

ANOVA

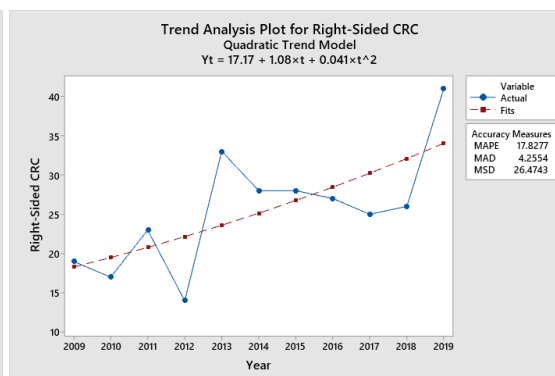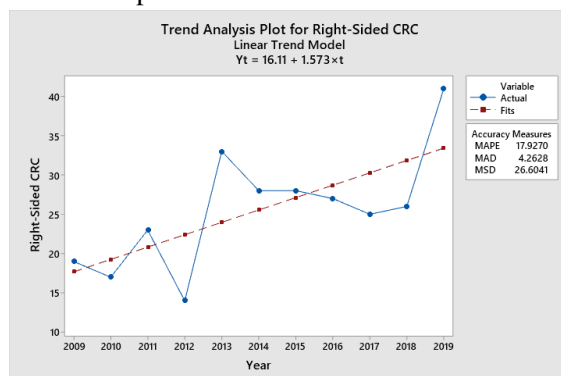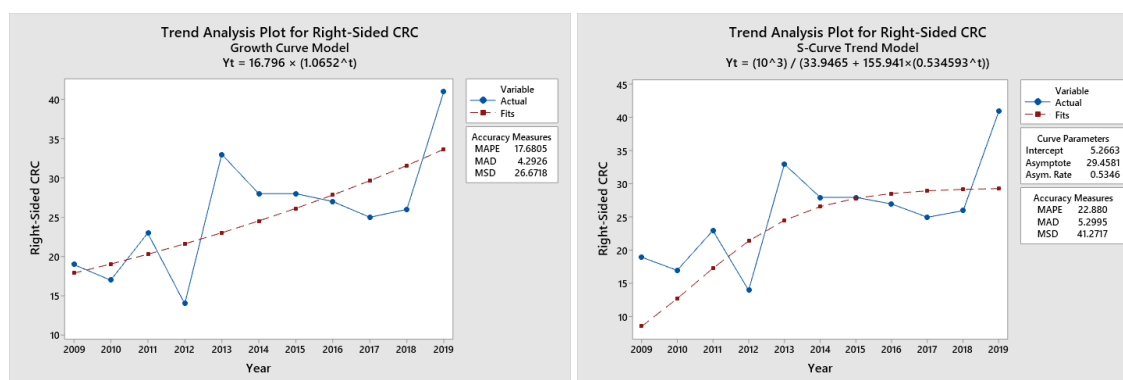|	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000	1	.000	.005	.948
Residual	.167	9	.019		
Total	.167	10			

The independent variable is Year.

3. The forecast of the number of cases in the following ten-year period using the Exponential growth model.

Year	Forecasted Cases
2020	91.3487
2021	91.2685
2022	91.1884
2023	91.1084
2024	91.0284
2025	90.9486
2026	90.8688
2027	90.7890
2028	90.7094
2029	90.6298
Mean	**90.9888**
Total	**909.888**

d. Regression Model for Total Right-Sided CRC Cases

1. Curve Options

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Model	Automatic Fitted-Curve	Accuracy Measurements		
		MAPE	MAD	MSD
Linear	$Yt = 16.11 + 1.573t$	17.927	4.2628	26.6041
Quadratic*	**$Yt = 17.17 + 1.08t + 0.041t^2$**	17.8277	**4.2554**	**26.4743**
Exponential Growth	$Yt = 16.796 \times (1.0652^t)$	**17.6805**	4.2926	26.6718
S-shaped	$Yt = 10^3 / (33.9465 + 155.941 \times (0.534593^t))$	22.8801	5.2995	41.2717

*The best-fitted model is the one that has the lowest value for three parameters (MAPE, MAD, and MSD), or at least for two parameters out of three, or at least having the lowest value for MAPE.

2. The significance test results for the slope of curve estimation (i.e., Quadratic model) employing the ANOVA statistical test in SPSS.

ANOVA

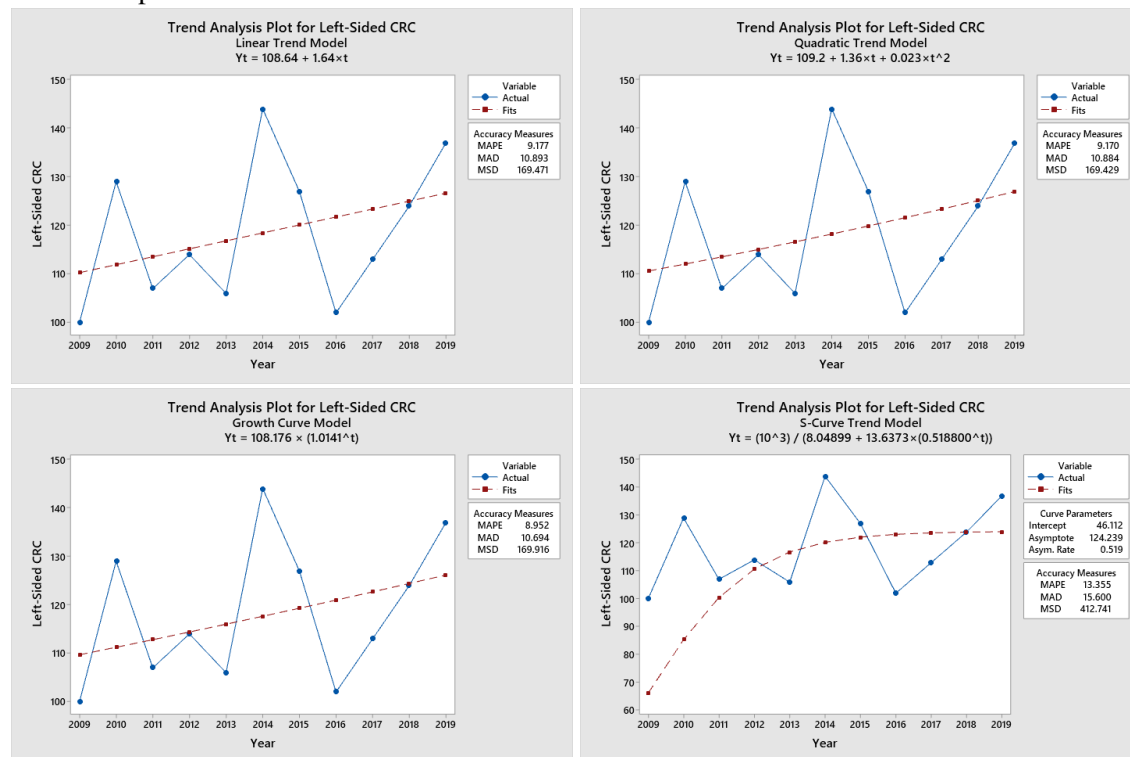|	Sum of Squares	df	Mean Square	F	Sig.
Regression	272.109	1	272.109	8.369	**.018**
Residual	292.618	9	32.513		
Total	564.727	10			

The independent variable is Year.

3. The forecast of the number of cases in the following ten-year period using the Quadratic model.

Year	Forecasted Cases
2020	36.0424
2021	38.1455
2022	40.3301
2023	42.5963
2024	44.9441
2025	47.3734
2026	49.8844
2027	52.4769
2028	55.1510
2029	57.9068
Mean	**46.48509**
Total	**464.8509**

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e. Regression Model for Total Left-Sided CRC Cases

1. Curve Options

Model	Automatic Fitted-Curve	Accuracy Measurements		
		MAPE	**MAD**	**MSD**
Linear	$Yt = 108.64 + 1.64t$	9.177	10.893	169.471
Quadratic	$Yt = 109.2 + 1.36t + 0.023t^2$	9.170	10.884	**169.429**
Exponential Growth*	**$Yt = 108.176 \times (1.0141^t)$**	**8.952**	**10.694**	169.916
S-shaped	$Yt = 10^3 / (8.04899 + 13.6373 \times (0.518800^t))$	13.355	15.600	412.741

*The best-fitted model is the one that has the lowest value for three parameters (MAPE, MAD, and MSD), or at least for two parameters out of three, or at least having the lowest value for MAPE.

2. The significance test results for the slope of curve estimation (i.e., Exponential growth model) employing the ANOVA statistical test in SPSS.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.022	1	.022	1.501	.252
Residual	.129	9	.014		
Total	.150	10			

The independent variable is Year.

3. The forecast of the number of cases in the following ten-year period using the Exponential growth model.

Year	Forecasted Cases
2020	127.936
2021	129.737
2022	131.564
2023	133.416
2024	135.294
2025	137.199
2026	139.131
2027	141.090
2028	143.076
2029	145.090
Mean	**136.3533**
Total	**1363.533**