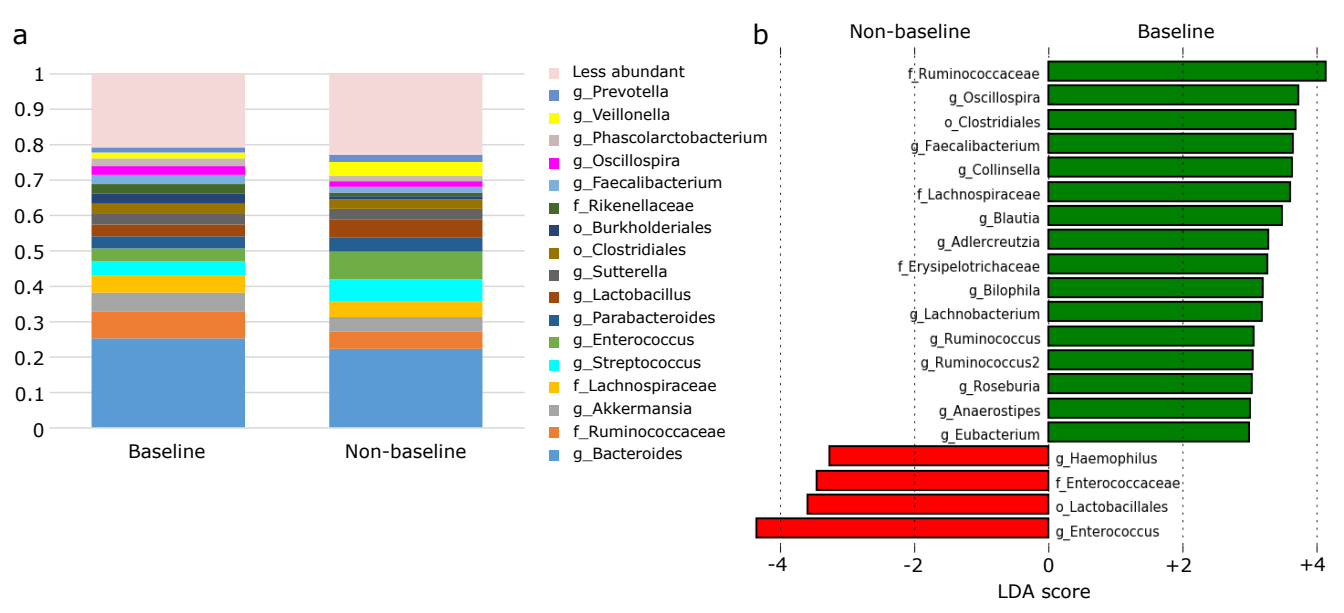

Figure S1: Taxonomic distribution in baseline and non-baseline samples
(**a**) Mean relative abundance of the most abundant taxa are shown. The top 15 taxa in each group were used to generate the plot. (**b**) Linear discriminant analysis Effect Size using an LDA score threshold of 3.0 and *p* value threshold of 0.05. The deepest level of taxonomy was genus (g). Taxa unclassifiable at the genus level are shown at family (f) or order (o) level.

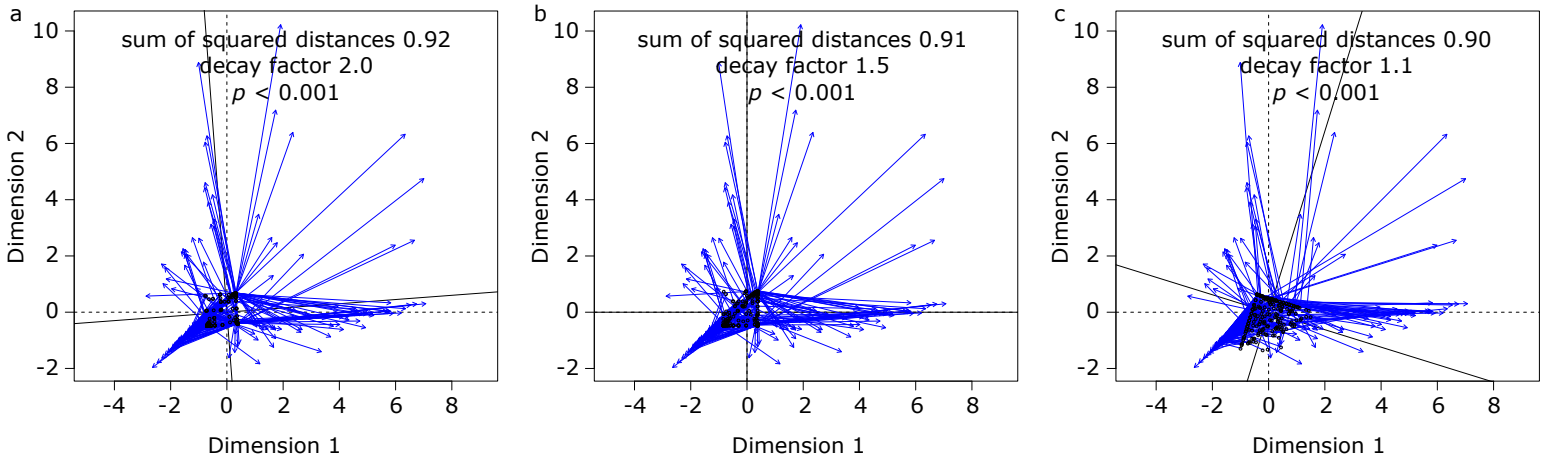

Figure S2: Procrustes analysis correlating microbiota composition with antibiotic history
(**a**) Decay factor 2.0. (**b**) Decay factor 1.5. (**c**) Decay factor 1.1.

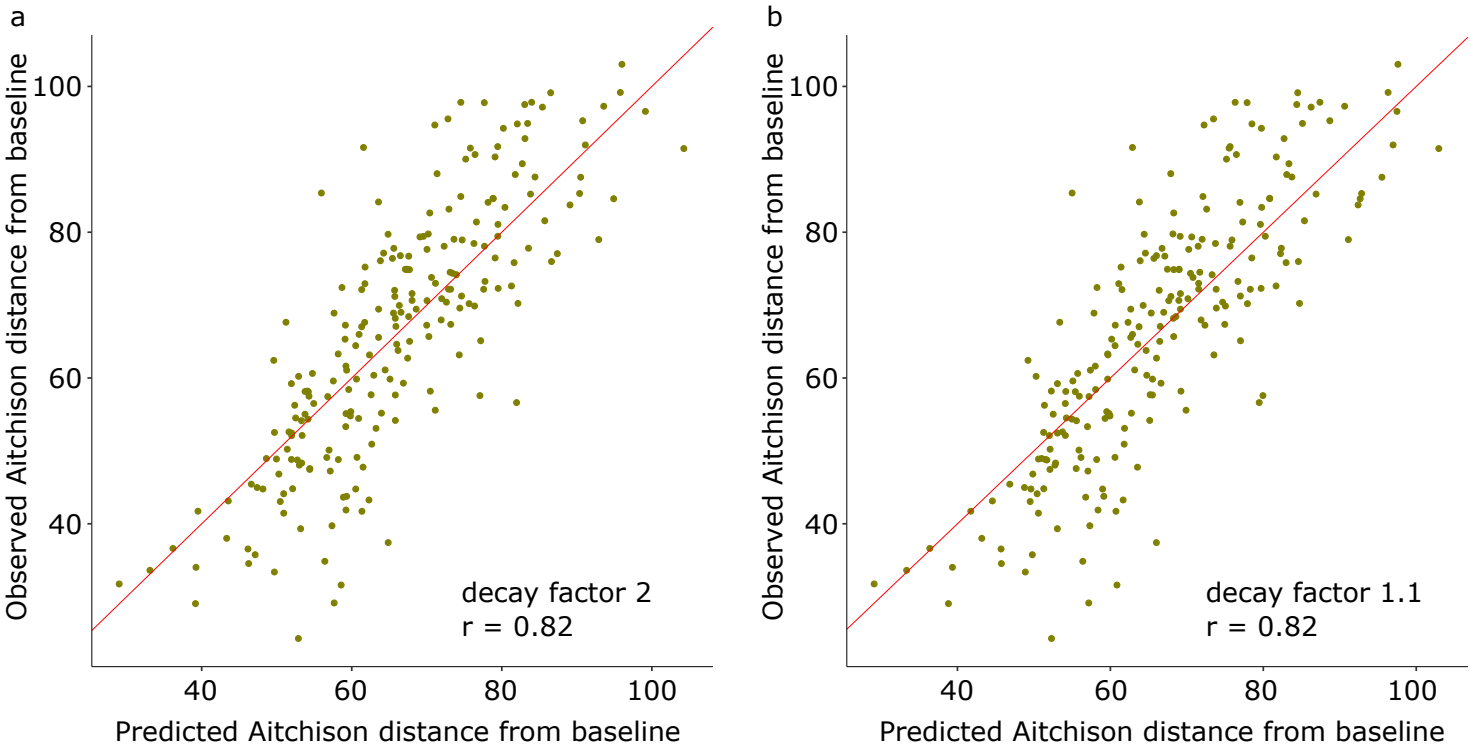

Figure S3: Principal component mixed effect regression
The first PC of microbiome for the baseline sample, first PC of antibiotic history for the non-baseline sample, baseline Shannon diversity, read depth of the non-baseline sample, use of parenteral nutrition (categorical) before the non-baseline sample, and the time interval in days between the two samples were included as fixed effect predictors of Aitchison distance between the two samples. Patient ID was a random effect. Model performance was defined as Pearson's correlation coefficient (r) comparing observed vs. predicted values of the outcome variable. Different values of the decay factor were used in the two panels. PC: principal component

Supplementary Table S1: Microfluidic quantitative PCR of antibiotic resistance genes
DNQ (detected but not quantifiable): values lower than the lowest concentration of the standard curves; ND (not detected)

			Aminoglycosides						Beta-lactams								Macrolides				Quinolones	Sulfonamides			Tetracyclines								Glycopeptides		Ansamycins	Diaminopyrimidine	Chloramphenicol		
Subject	Day	16S	aacA	aadA5	aadD	acrD	mexB	strB	ampC	bla_CTX-M32	bla_imp13	bla_KPC	bla_NDM1	bla_NPS	bla_OXA	bla_SHV	bla_VIM	merA	ereB	ermB	ermF	mefE	qnrA	qnrB	sul1	sul2	sul3	tetA	tetL	tetM	tetS	tetW	tetX	vanA	vanB	arr2	dfr13	cmlB	floR	catB8
21	4	5.72	ND	1.30	1.32	1.29	3.87	2.38	1.11	ND	ND	4.52	1.53	ND	DNQ	5.14	0.19	4.05	DNQ	7.17	5.37	5.81	1.32	ND	1.86	1.70	1.33	2.64	1.62	7.49	3.88	7.08	1.73	ND	2.91	0.58	ND	DNQ	2.50	ND
21	7	5.66	0.58	1.46	1.83	DNQ	3.96	0.89	1.00	ND	ND	5.01	1.44	ND	ND	5.00	0.87	4.11	ND	7.15	6.00	5.64	0.85	DNQ	1.04	ND	0.93	2.48	1.55	7.12	3.96	7.10	DNQ	0.84	3.09	1.05	ND	0.51	2.13	ND
21	8	4.76	ND	0.99	1.72	ND	2.98	ND	1.43	ND	ND	6.21	ND	ND	ND	4.30	DNQ	2.80	ND	6.49	3.73	1.28	1.02	ND	1.84	ND	0.41	1.95	1.46	6.28	3.84	5.65	2.60	1.56	2.98	ND	ND	0.44	0.56	ND
21	11	5.73	ND	0.86	1.86	ND	3.46	ND	1.77	ND	ND	4.47	ND	ND	ND	4.41	DNQ	3.07	ND	7.18	5.23	2.23	0.55	ND	1.46	ND	0.61	2.27	0.50	7.51	3.88	6.92	ND	ND	3.28	0.23	0.34	0.91	1.53	ND
21	14	5.13	ND	1.06	0.78	ND	ND	ND	1.46	ND	ND	6.91	ND	ND	0.43	4.27	DNQ	3.28	DNQ	6.73	4.86	0.64	0.82	ND	ND	ND	0.68	2.78	1.69	6.97	3.13	6.50	DNQ	0.52	2.73	0.09	ND	0.77	1.22	ND
21	19	5.00	ND	1.06	ND	0.04	3.37	DNQ	1.29	ND	ND	1.22	1.74	ND	ND	4.62	DNQ	3.04	ND	7.14	2.84	0.87	1.26	ND	ND	ND	0.72	2.60	1.37	6.98	2.62	6.50	ND	ND	2.77	0.42	ND	DNQ	1.81	ND
21	22	4.66	ND	1.18	0.38	ND	ND	ND	1.77	ND	ND	6.62	1.64	ND	1.37	4.58	DNQ	2.05	ND	6.85	3.56	0.74	0.97	ND	1.50	ND	0.62	2.47	1.49	6.60	1.55	6.12	ND	ND	2.30	0.80	ND	0.84	1.99	ND
21	28	5.01	ND	1.24	0.61	ND	ND	ND	2.04	ND	ND	4.81	ND	ND	ND	3.51	ND	1.97	ND	6.67	5.15	ND	ND	ND	ND	ND	0.69	2.08	0.01	6.85	2.84	6.60	ND	ND	2.68	ND	ND	0.68	0.18	ND
21	33	5.80	ND	0.65	2.94	ND	2.01	1.15	1.09	2.11	ND	4.03	ND	ND	ND	4.30	ND	3.26	ND	6.83	3.84	3.90	0.82	ND	ND	1.35	0.66	2.06	1.88	6.71	2.87	6.98	ND	ND	3.38	0.17	ND	DNQ	1.40	ND
22	0	4.64	ND	0.93	0.55	3.47	2.77	0.30	2.69	ND	0.50	4.18	ND	ND	ND	4.39	ND	3.61	ND	7.28	7.41	3.66	1.40	ND	ND	1.44	0.91	1.15	1.82	6.04	ND	5.83	7.23	ND	DNQ	0.79	0.97	ND	1.89	ND
22	3	4.79	ND	0.87	0.52	5.75	ND	2.09	4.94	ND	ND	6.59	0.75	ND	ND	4.34	0.50	1.71	ND	7.48	7.41	3.84	DNQ	0.33	1.25	ND	1.00	1.52	DNQ	6.00	1.49	6.03	6.96	ND	1.43	ND	ND	ND	DNQ	ND
22	7	4.60	ND	0.43	2.37	3.31	ND	2.07	2.55	ND	1.07	6.44	ND	ND	ND	3.98	ND	3.35	ND	6.99	6.95	3.43	ND	ND	2.05	ND	0.66	1.43	ND	5.87	2.79	5.80	6.85	ND	1.21	ND	ND	0.51	ND	ND
22	10	4.26	ND	1.24	2.76	ND	ND	1.50	1.00	ND	ND	6.02	1.36	ND	DNQ	3.69	ND	ND	ND	7.21	7.41	2.81	ND	ND	ND	ND	0.88	2.18	0.80	5.95	DNQ	5.27	6.86	ND	1.40	ND	DNQ	DNQ	1.31	ND
22	13	4.18	ND	0.69	4.01	ND	ND	ND	2.12	1.90	ND	2.66	ND	ND	ND	3.90	ND	2.31	ND	5.73	ND	0.37	ND	ND	1.40	ND	0.94	DNQ	2.12	7.85	1.34	1.17	1.85	6.64	1.59	ND	ND	ND	ND	ND
22	17	3.53	ND	DNQ	2.83	ND	ND	1.39	1.01	ND	ND	2.85	ND	ND	ND	0.84	ND	2.06	ND	6.21	ND	ND	ND	ND	1.52	ND	0.04	1.90	ND	7.20	0.59	2.15	ND	6.20	DNQ	ND	ND	ND	ND	ND
22	24	3.45	ND	1.10	3.82	ND	ND	1.19	1.62	ND	ND	3.54	ND	ND	ND	3.19	ND	2.67	ND	4.30	3.69	1.49	ND	ND	ND	ND	0.51	2.07	ND	7.29	3.03	2.56	0.54	6.43	ND	ND	ND	ND	0.44	ND
22	20	3.56	ND	0.72	3.32	ND	3.27	1.44	1.24	1.59	ND	3.11	1.19	ND	ND	3.27	ND	2.36	ND	5.59	ND	ND	ND	ND	1.50	ND	DNQ	ND	ND	7.24	2.43	2.10	ND	6.19	ND	ND	ND	ND	1.79	ND
22	27	4.76	ND	0.91	4.25	ND	ND	2.32	0.63	ND	ND	3.84	ND	ND	ND	3.25	ND	2.79	ND	7.21	0.02	3.06	ND	ND	1.19	ND	DNQ	2.43	ND	7.75	2.80	2.92	ND	6.64	0.56	ND	ND	ND	ND	ND
23	1	5.22	0.26	0.80	2.04	3.14	3.35	5.10	2.89	ND	ND	4.65	1.66	ND	0.99	4.69	1.79	3.22	ND	7.21	7.43	4.99	DNQ	ND	1.07	5.04	0.63	2.01	1.66	5.14	2.29	6.75	6.12	0.36	2.46	0.57	ND	ND	1.99	ND
23	2	5.52	ND	1.02	1.53	2.65	2.37	5.18	2.19	ND	ND	4.56	0.70	ND	0.91	4.75	2.52	3.18	ND	7.16	7.46	4.91	0.91	ND	1.72	5.14	1.10	2.46	0.97	5.00	3.08	6.81	6.94	DNQ	2.14	ND	ND	0.39	1.71	ND
23	5	4.10	ND	0.61	0.85	1.69	2.75	3.87	1.74	ND	ND	4.78	0.44	0.81	0.04	4.50	1.91	3.09	ND	6.76	7.33	4.43	0.67	0.74	1.44	3.88	0.81	2.46	1.26	4.45	1.89	6.37	6.71	ND	1.77	ND	ND	1.20	1.64	ND
23	9	5.31	0.48	1.44	2.61	0.91	2.80	2.54	0.96	1.52	ND	4.63	1.27	ND	0.03	5.03	2.42	3.84	ND	7.18	7.96	4.78	DNQ	1.04	DNQ	ND	1.44	2.51	2.93	6.00	1.79	6.63	7.49	5.39	0.95	DNQ	1.34	ND	1.04	ND
23	12	3.72	ND	1.97	3.31	ND	3.71	ND	1.34	ND	ND	3.49	1.31	ND	ND	3.91	ND	2.01	ND	6.81	6.98	3.19	ND	ND	1.36	ND	0.09	DNQ	2.88	2.91	DNQ	5.28	6.50	6.33	ND	ND	ND	ND	ND	0.80
23	16	4.12	ND	0.97	2.56	ND	1.71	ND	1.63	ND	ND	5.44	ND	ND	DNQ	3.65	ND	ND	ND	6.58	6.24	2.66	0.26	ND	ND	ND	0.70	2.74	2.72	3.05	ND	4.73	5.56	5.98	0.41	0.17	ND	ND	1.54	ND
23	19	2.77	ND	1.29	1.66	ND	ND	0.83	2.33	ND	ND	2.67	ND	ND	ND	1.85	ND	ND	ND	5.91	2.73	0.52	0.98	ND	ND	ND	0.21	2.71	ND	3.02	2.02	2.28	0.96	5.21	ND	0.23	ND	ND	1.22	ND
23	23	2.22	ND	1.54	1.26	ND	ND	ND	1.04	ND	ND	2.92	0.90	ND	0.77	4.12	0.89	2.97	ND	4.93	2.93	DNQ	ND	ND	ND	ND	0.81	2.95	ND	2.90	2.81	1.91	ND	4.03	0.95	DNQ	ND	0.89	1.04	ND
24	2	2.32	ND	0.65	1.14	ND	ND	1.10	1.49	ND	ND	4.40	ND	ND	ND	1.82	ND	2.32	ND	4.52	4.72	2.05	ND	ND	0.90	1.12	0.19	ND	ND	2.42	ND	3.63	3.85	1.62	ND	ND	ND	0.91	ND	ND