

Table 3. Dynamic Adaptation. Under the varying distribution in the streaming source, the proposed Dynamic Memory (DM) and Selective Memory (SM) enable the identification of the critical samples and thereby enhance the segmentation performance. Specifically, SM significantly outperforms other methods on complex structures such as the Esophagus and small structures such as the Adrenal Gland.

Sequential-Site Dataset [20]						
Strategy	LM	DM	SM	SM	SM	Prevalent
Sampling Rate S	100	100	100	100	100	-
Memory Size N	128	128	128	128	128	-
Top K%	-	-	12.5%	25%	50%	-
Spleen	0.9506	0.9543	0.9553	0.9449	0.9542	0.9268
Right Kidney	0.8961	0.9236	0.9239	0.9202	0.9122	0.9189
Left Kidney	0.8972	0.9172	0.9145	0.9138	0.9052	0.9149
Gall Bladder	0.2205	0.6747	0.5367	0.5906	0.6325	0.3671
Esophagus	0.0004	0.1588	0.4376	0.4044	0.4537	0.0395
Liver	0.9615	0.9673	0.9668	0.9665	0.9632	0.9630
Stomach	0.5802	0.7705	0.7313	0.7890	0.7467	0.7785
Aorta	0.4895	0.6063	0.6751	0.5687	0.6633	0.7676
Postcava	0.2098	0.5373	0.6191	0.5444	0.5239	0.6433
Vein	0.0000	0.0370	0.0000	0.0000	0.0000	0.2310
Pancreas	0.6669	0.8028	0.8249	0.8112	0.7766	0.7376
Right Adrenal Gland	0.0000	0.0000	0.5830	0.5942	0.4307	0.0000
Left Adrenal Gland	0.0000	0.0000	0.5625	0.5126	0.4716	0.0000
Duodenum	0.1204	0.4293	0.4000	0.4987	0.5251	0.3599
Hepatic Vessel	0.4678	0.5571	0.5769	0.5524	0.5731	0.5063
Right Lung	0.7002	0.4919	0.5432	0.6112	0.5529	0.7617
Left Lung	0.8771	0.6187	0.7965	0.7162	0.7859	0.9102
Colon	0.0008	0.0003	0.0185	0.0352	0.0187	0.4986
Intestine	0.0000	0.0849	0.1081	0.2765	0.3648	0.4610
Rectum	0.0000	0.0000	0.0000	0.0000	0.0102	0.0000
Bladder	0.6383	0.5397	0.7316	0.7701	0.7722	0.7517
Prostate	0.0009	0.0923	0.1066	0.2276	0.0471	0.0000
Left Head of Femur	0.0000	0.0000	0.0000	0.0772	0.0000	0.0000
Right Head of Femur	0.0000	0.0000	0.0000	0.0690	0.0000	0.4190
Celiac Truck	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Kidney Tumor	0.2417	0.2936	0.2483	0.3258	0.3204	0.3781
Kidney Cyst	0.0268	0.0059	0.0729	0.2920	0.0056	0.1751
Liver Tumor	0.3579	0.5753	0.5755	0.6059	0.5817	0.6219
Pancreas Tumor	0.1643	0.2823	0.2957	0.3435	0.3560	0.2058
Hepatic Vessel Tumor	0.5717	0.6659	0.6516	0.6618	0.6713	0.5930
Lung Tumor	0.1910	0.1845	0.2862	0.1981	0.1516	0.3233
Colon Tumor	0.2377	0.1797	0.2751	0.2874	0.3106	0.1667
Tumor Average Dice	0.2559	0.3125	0.3436	0.3878	0.3426	0.3520
Organ Average Dice	0.3471	0.4066	0.4805	0.4958	0.4834	0.4783
Average Dice	0.3272	0.3860	0.4505	0.4722	0.4525	0.4506

Table 4. Data Efficiency. By integrating linear memory into the prevalent training paradigm, we enable training on continual data streams without the need to revisit old data, thereby enhancing data efficiency. The results demonstrate that the linear memory trained on continual data streams achieves comparable performance to the prevalent training paradigm.

Proprietary Dataset [39,26]				
Strategy	Linear Memory	Linear Memory	Linear Memory	Repeatedly
Sampling Rate S	100	100	100	-
Memory Size N	64	128	256	-
Aorta	0.8865	0.8893	0.8890	0.8848
R Adrenal Gland	0.7530	0.7534	0.7501	0.7491
L Adrenal Gland	0.7001	0.6980	0.6962	0.6964
Celiac Truck	0.5403	0.5428	0.5385	0.5610
Colon	0.6915	0.6946	0.6992	0.7196
Duodenum	0.7907	0.7903	0.7878	0.7896
Gall Bladder	0.8866	0.8888	0.8860	0.8886
Postcava	0.8129	0.8088	0.8161	0.8164
Right Kidney	0.9535	0.9536	0.9551	0.9527
Left Kidney	0.9473	0.9477	0.9475	0.9460
Liver	0.9715	0.9712	0.9717	0.9708
Pancreas	0.8699	0.8683	0.8703	0.8688
Intestine	0.6047	0.6088	0.6144	0.6375
Spleen	0.9664	0.9661	0.9663	0.9641
Stomach	0.9512	0.9509	0.9506	0.9453
Average Dice	0.8217	0.8222	0.8225	0.8260