University of Pennsylvania Pharmacogenomic Program Epic inline warning language

LOCATOR ID	LOCATOR NAME	DISP COMMENT	CRITERIA	CRITERIA RECORD	LOGIC
4838	BASE PGX AMITRIPTYLINE CYP2C19 POOR METABOLIZER	This patient may have an increased risk of side effects when treated with amitriptyline at the standard dose. Consider a 50% reduction in the starting dose of amitriptyline or an alternative drug not metabolized by CYP2C19 (i.e. nortriptyline and desipramine)	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND 2 AND NOT (3 OR 4 OR 5 OR 6)
			128000010	CL PGX CYP2C19 POOR METABOLIZER GENOMIC INDICATOR	
			12000075	CL PGX CYP2D6 NORMAL METABOLIZER	
			128000082	CL PGX CYP2D6 POOR METABOLIZER	
			128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	
			128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	
4837	BASE PGX AMITRIPTYLINE CYP2C19 RAPID METABOLIZER	This patient may have reduced efficacy when treated with amitriptyline. Consider an alternative drug not metabolized by CYP2C19 (i.e. nortriptyline and desipramine)	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND 2 AND NOT (3 OR 4 OR 5 OR 6)
			4810	CL PGX CYP2C19 RAPID METABOLIZER GENOMIC INDICATOR	
			12000075	CL PGX CYP2D6 NORMAL METABOLIZER	
			128000082	CL PGX CYP2D6 POOR METABOLIZER	
			128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	
			128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	
128000008	BASE PGX AMITRIPTYLINE CYP2C19 ULTRARAPID METABOLIZER	This patient may have reduced efficacy when treated with amitriptyline. Consider an alternative drug not metabolized by CYP2C19 (i.e. nortriptyline and desipramine)	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND 2 AND NOT (3 OR 4 OR 5 OR 6)
			128000009	CL PGX CYP2C19 ULTRARAPID METABOLIZER GENOMIC INDICATOR	
			12000075	CL PGX CYP2D6 NORMAL METABOLIZER	
			128000082	CL PGX CYP2D6 POOR METABOLIZER	
			128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	
			128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	
4878	BASE PGX AMITRIPTYLINE CYP2D6 INTERMEDIATE METABOLIZER	This patient is a CYP2D6 intermediate metabolizer and may be at an increased risk of toxicity with amitriptyline.	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND 2 AND NOT 3
			128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	
			4875	CL PATIENT HAS CYP2C19 INDICATOR	
4879	BASE PGX AMITRIPTYLINE CYP2D6 POOR METABOLIZER	This patient may have an increased risk of side effects when treated with amitriptyline at the standard dose. Consider a 50% reduction in the starting dose of amitriptyline or an alternative drug not metabolized by CYP2D6.	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND (2 OR 3) AND NOT 4
			128000082	CL PGX CYP2D6 POOR METABOLIZER	
			1280000096	CL PGX CYP2D6 POOR ACTIVITY SCORE	
			4875	CL PATIENT HAS CYP2C19 INDICATOR	
4877	BASE PGX AMITRIPTYLINE CYP2D6 ULTRARAPID METABOLIZER	This patient may have reduced efficacy when treated with amitriptyline. Consider alternative drug not metabolized by CYP2D6.	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND (2 OR 3) AND NOT 4
			128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	
			1280000093	CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE	
			4875	CL PATIENT HAS CYP2C19 INDICATOR	
128000090	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 INTERMEDIATE/INTERMEDIATE METABOLIZER	This patient may have an increased risk of side effects with amitriptyline at the standard dose. Consider a 25% reduction of the recommended starting dose.	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND (2 OR 3) AND 4
			128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
			128000014	CL PGX CYP2C19 INTERMEDIATE METABOLIZER GENOMIC INDICATOR	
128000091	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 INTERMEDIATE/NORMAL METABOLIZER	This patient may have an increased risk of side effects with amitriptyline at the standard dose. Consider a 25% reduction of the recommended starting dose.	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND (2 OR 3) AND 4
			128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
			4817	CL PGX CYP2C19 NORMAL METABOLIZER	
128000089	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 INTERMEDIATE/POOR METABOLIZER	This patient may have an increased risk of side effects with amitriptyline. Consider an alternative drug.	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND (2 OR 3) AND 4
			128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
			128000010	CL PGX CYP2C19 POOR METABOLIZER GENOMIC INDICATOR	
128000092	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 INTERMEDIATE/RAPID METABOLIZER	This patient may have reduced efficacy or increased risk of toxicity with amitriptyline due to altered drug metabolism. Consider an alternative drug.	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND (2 OR 3) AND 4
			128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
			4810	CL PGX CYP2C19 RAPID METABOLIZER GENOMIC INDICATOR	
128000088	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 NORMAL/POOR METABOLIZER	This patient may have an increased risk of side effects with amitriptyline. Consider an alternative drug not metabolized by CYP2C19 (i.e. nortriptyline and desipramine).	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND 2 AND 3
			12000075	CL PGX CYP2D6 NORMAL METABOLIZER	
			128000010	CL PGX CYP2C19 POOR METABOLIZER GENOMIC INDICATOR	
128000087	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 NORMAL/ULTRARAPID	This patient may have reduced efficacy with amitriptyline due to altered drug metabolism. Consider an alternative drug not metabolized by CYP2C19 (i.e. nortriptyline and desipramine).	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND (2 OR 3) AND 4
			12000075	CL PGX CYP2D6 NORMAL METABOLIZER	
			1280000094	CL PGX CYP2D6 NORMAL ACTIVITY SCORE	
			128000009	CL PGX CYP2C19 ULTRARAPID METABOLIZER GENOMIC INDICATOR	
128000095	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 POOR/INTERMEDIATE METABOLIZER	This patient may have an increased risk of side effects with amitriptyline at the standard dose. If amitripyline is warranted, consider a 50% reduction of the recommended starting dose.	4814	CL PGX AMITRIPTYLINE MEDICATION	1 AND (2 OR 3) AND 4
			128000082	CL PGX CYP2D6 POOR METABOLIZER	

			1280000096 CL PGX CYP2D6 POOR ACTIVITY SCORE 128000014 CL PGX CYP2C19 INTERMEDIATE METABOLIZER GENOMIC INDICATOR	
128000094	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 POOR/NORMAL METABOLIZER	This patient may have an increased risk of side effects with amitriptyline at the standard dose. If amitripyline is warranted, consider a 50% reduction of the recommended starting dose.	4814 CL PGX AMITRIPTYLINE MEDICATION 128000082 CL PGX CYP2D6 POOR METABOLIZER 1280000096 CL PGX CYP2D6 POOR ACTIVITY SCORE 4817 CL PGX CYP2C19 NORMAL METABOLIZER	1 AND (2 OR 3) AND 4
128000096	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 POOR/POOR METABOLIZER	This patient may have an increased risk of side effects with amitriptyline. Consider an alternative drug.	4814 CL PGX AMITRIPTYLINE MEDICATION 128000082 CL PGX CYP2D6 POOR METABOLIZER 1280000096 CL PGX CYP2D6 POOR ACTIVITY SCORE 128000010 CL PGX CYP2C19 POOR METABOLIZER GENOMIC INDICATOR	1 AND (2 OR 3) AND 4
128000093	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 POOR/ULTRARAPID/RAPID METABOLIZER	This patient may have reduced efficacy or increased risk of side effects with amitriptyline due to altered drug metabolism. Consider an alternative drug.	4814 CL PGX AMITRIPTYLINE MEDICATION 128000082 CL PGX CYP2D6 POOR METABOLIZER 1280000096 CL PGX CYP2D6 POOR ACTIVITY SCORE 128000009 CL PGX CYP2C19 ULTRARAPID METABOLIZER GENOMIC INDICATOR 4810 CL PGX CYP2C19 RAPID METABOLIZER GENOMIC INDICATOR	1 AND (2 OR 3) AND (4 OR 5)
128000085	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 ULTRARAPID/INTERMEDIATE METABOLIZER	This patient may have reduced efficacy or increased risk of side effects with amitriptyline due to altered drug metabolism. Consider an alternative drug.	4814 CL PGX AMITRIPTYLINE MEDICATION 128000080 CL PGX ULTRARAPID CYP2D6 METABOLIZER 1280000093 CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE 128000014 CL PGX CYP2C19 INTERMEDIATE METABOLIZER GENOMIC INDICATOR	1 AND (2 OR 3) AND 4
128000084	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 ULTRARAPID/NORMAL METABOLIZER	This patient may have reduced efficacy with amitriptyline due to altered drug metabolism. Consider an alternative drug.	4814 CL PGX AMITRIPTYLINE MEDICATION 128000080 CL PGX ULTRARAPID CYP2D6 METABOLIZER 1280000093 CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE 4817 CL PGX CYP2C19 NORMAL METABOLIZER	1 AND (2 OR 3) AND 4
128000086	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 ULTRARAPID/POOR METABOLIZER	This patient may have reduced efficacy or increased risk of side effects with amitriptyline due to altered drug metabolism. Consider an alternative drug.	4814 CL PGX AMITRIPTYLINE MEDICATION 128000080 CL PGX ULTRARAPID CYP2D6 METABOLIZER 1280000093 CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE 128000010 CL PGX CYP2C19 POOR METABOLIZER GENOMIC INDICATOR	1 AND (2 OR 3) AND 4
128000083	BASE PGX AMITRIPTYLINE CYP2D6/CYP2C19 ULTRARAPID/RAPID METABOLIZER	This patient may have reduced efficacy with amitriptyline due to altered drug metabolism. Consider an alternative drug.	4814 CL PGX AMITRIPTYLINE MEDICATION 128000080 CL PGX ULTRARAPID CYP2D6 METABOLIZER 1280000093 CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE 128000009 CL PGX CYP2C19 ULTRARAPID METABOLIZER GENOMIC INDICATOR 4810 CL PGX CYP2C19 RAPID METABOLIZER GENOMIC INDICATOR	1 AND (2 OR 3) AND (4 OR 5)
128000018	BASE PGX AMITRIPTYLINE/CYP2D6 INTERMEDIATE METABOLIZER	This patient may have an increased risk of side effects when treated with amitriptyline at the standard dose. Consider a 25% reduction in the starting dose of amitriptyline or an alternative drug not metabolized by CYP2D6.	4814 CL PGX AMITRIPTYLINE MEDICATION 128000081 CL PGX CYP2D6 INTERMEDIATE METABOLIZER	1 AND 2
128000006	BASE PGX CAPECITABINE / DPYD INTERMEDIATE METABOLIZER	This patient is predicted to have an increased risk of severe or life-threatening toxicity when treated with capecitabine at the standard dose. Reduce starting dose by 50%. Closely monitor for toxicity with subsequent titration of capecitabine as clinically indicated.	128000003 CL PGX DPYD INTERMEDIATE METABOLIZER 128000002 CL PGX DPYD INTERMEDIATE METABOLIZER 1.5 128000007 CL PGX PATIENT ON CAPECETABINE	(1 OR 2) AND 3
128000099	BASE PGX CAPECITABINE / DPYD POOR METABOLIZER ACTIVITY SCORE .5	This patient is predicted to have an increased risk of severe or life-threatening toxicity when treated with capecitabine at the standard dose. Avoid use of capecitabine. If alternative agents are not considered a suitable option, administer capecitabine at a strongly reduced dose (i.e. <25% of normal starting dose).	12800000100 CL PGX DPYD GENOTYPE TO POOR ACTIVITY SCORE .5 BPA RULE 1280000102 CL PGX DPYD ACTIVITY SCORE RESULT COMPONENT .5 128000007 CL PGX PATIENT ON CAPECETABINE	(1 OR 2) AND 3
128000098	BASE PGX CAPECITABINE / DPYD POOR METABOLIZER ACTIVITY SCORE 0	This patient is predicted to have an increased risk of life-threatening toxicity when treated with capecitabine at the standard dose. Avoid use of capecitabine.	12800000101 CL PGX DPYD GENOTYPE TO POOR ACTIVITY SCORE 0 BPA RULE 10280000103 CL PGX DPYD ACTIVITY SCORE RESULT COMPONENT 0 128000007 CL PGX PATIENT ON CAPECETABINE	(1 OR 2) AND 3
128000030	BASE PGX CELECOXIB/CYP2C9 INTERMEDIATE METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with celecoxib. Initiate therapy with the lowest recommended starting dose.	128000042 CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE 1 GENOMIC INDICATOR 128000027 CL PGX PATIENT HAS CELECOXIB MEDICATION 1280000099 CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE	2 AND (1 OR 3)
128000044	BASE PGX CELECOXIB/CYP2C9 POOR	This patient is predicted to have an increased risk of side effects when treated with celecoxib at the standard dose. Initiate therapy with 25-50% of the lowest recommended starting dose (i.e. 50-75% dose reduction). Treatment with an alternative therapy could also be considered (i.e., aspirin, naproxen, ketorolac, sulindac).	128000045 CL PGX CYP2C9 POOR METABOLIZER GENOMIC INDICATOR 1280000097 CL PGX CYP2C9 POOR ACTIVITY SCORE 128000027 CL PGX PATIENT HAS CELECOXIB MEDICATION	(1 OR 2) AND 3
128000070	BASE PGX CITALOPRAM/CYP2C19 POOR METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with citalopram at the standard dose. Consider a 50% reduction of the recommended starting dose and titrate to response or select alternative drug not predominantly metabolized by CYP2C19.	128000010 CL PGX CYP2C19 POOR METABOLIZER GENOMIC INDICATOR 1289999994 CL PGX CITALOPRAM PRESCRIBED	1 AND 2

4831	BASE PGX CITALOPRAM/CYP2C19 RAPID METABOLIZER	This patient is predicted to have reduced efficacy when treated with citalopram. Consider an alternative drug not predominantly metabolized by CYP2C19.	1289999994	CL PGX CITALOPRAM PRESCRIBED	1 AND 2
			4810	CL PGX CYP2C19 RAPID METABOLIZER GENOMIC INDICATOR	
128000069	BASE PGX CITALOPRAM/CYP2C19 ULTRARAPID METABOLIZER	This patient is predicted to have reduced efficacy when treated with citalopram. Consider an alternative drug not predominantly metabolized by CYP2C19.	1289999994	CL PGX CITALOPRAM PRESCRIBED	1 AND 2
			128000009	CL PGX CYP2C19 ULTRARAPID METABOLIZER GENOMIC INDICATOR	
4897	BASE PGX CODEINE/CYP2D6 INTERMEDIATE METABOLIZER	This patient is predicted to have a decreased analgesic effect with codeine. Use label recommended dosing. If no response, consider an alternative opioid. Avoid tramadol and hydrocodone.	128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	(1 OR 2) AND 3
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
			4896	CL PGX CODEINE MEDICATION ORDER	
4898	BASE PGX CODEINE/CYP2D6 POOR METABOLIZER	This patient is predicted to have a diminished analgesic effect with codeine. Avoid codeine use. If opioid use is warranted, consider an alternative opioid. Avoid tramadol and hydrocodone.	128000082	CL PGX CYP2D6 POOR METABOLIZER	(1 OR 2) AND 3
			1280000096	CL PGX CYP2D6 POOR ACTIVITY SCORE	
			4896	CL PGX CODEINE MEDICATION ORDER	
4895	BASE PGX CODEINE/CYP2D6 ULTRARAPID METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with codeine. Avoid use of codeine, tramadol and hydrocodone.	128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	(1 OR 2) AND 3
			1280000093	CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE	
			4896	CL PGX CODEINE MEDICATION ORDER	
128000209	BASE PGX CYP2B6 INTERMEDIATE METABOLIZER EFAVIRENZ	This patient is predicted to have an increased risk of side effects when treated with efavirenz at the standard dose. Consider initiating at a decreased dose of 400 mg/day.	128000114	CL PGX PATIENT ON EFAVIRENZ	1 AND 2
			128000115	CL PGX CYP2B6 INTERMEDIATE METABOLIZER	
128000210	BASE PGX CYP2B6 POOR METABOLIZER EFAVIRENZ	This patient is predicted to have an increased risk of side effects when treated with efavirenz at the standard dose. Consider initiating at a decreased dose of 400 mg/day or 200 mg/day.	128000114	CL PGX PATIENT ON EFAVIRENZ	1 AND 2
			128000116	CL PGX CYP2B6 POOR METABOLIZER	
128000077	BASE PGX CYP2D6/ATOMEXETINE ULTRARAPID METABOLIZER	This patient may not achieve the intended therapeutic effect of atomoxetine at standard dosing.	128000076	CL PGX ATOMOXETINE MEDICATION	1 AND (2 OR 3)
			128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	
			1280000093	CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE	
128000079	BASE PGX CYP2D6/ATOMOXETINE INTERMEDIATE METABOLIZER	This patient may be at an increased risk of atomoxetine-related adverse events.	128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	(1 OR 2) AND 3
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
			128000076	CL PGX ATOMOXETINE MEDICATION	
128000078	BASE PGX CYP2D6/ATOMOXETINE POOR METABOLIZER	This patient may be at an increased risk of atomoxetine-related adverse events.	128000082	CL PGX CYP2D6 POOR METABOLIZER	(1 OR 2) AND 3
			1280000096	CL PGX CYP2D6 POOR ACTIVITY SCORE	
			128000076	CL PGX ATOMOXETINE MEDICATION	
128000072	BASE PGX ESCITALOPRAM/CYP2C19 POOR METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with escitalopram at the standard dose. Consider a 50% reduction of the recommended starting dose and titrate to response or select alternative drug not predominantly metabolized by CYP2C19.	1289999995	CLPGX MEDICATION ESCITALOPRAM PRESCRIBED	
			128000010	CL PGX CYP2C19 POOR METABOLIZER GENOMIC INDICATOR	
4832	BASE PGX ESCITALOPRAM/CYP2C19 RAPID METABOLIZER	This patient is predicted to have reduced efficacy when treated with escitalopram. Consider an alternative drug not predominantly metabolized by CYP2C19.	4810	CL PGX CYP2C19 RAPID METABOLIZER GENOMIC INDICATOR	1 AND 2
			1289999995	CLPGX MEDICATION ESCITALOPRAM PRESCRIBED	
128000071	BASE PGX ESCITALOPRAM/CYP2C19 ULTRARAPID METABOLIZER	This patient is predicted to have reduced efficacy when treated with escitalopram. Consider an alternative drug not predominantly metabolized by CYP2C19.	128000009	CL PGX CYP2C19 ULTRARAPID METABOLIZER GENOMIC INDICATOR	1 AND 2
			1289999995	CLPGX MEDICATION ESCITALOPRAM PRESCRIBED	
1280000001	BASE PGX FLUOROURACIL/DPYD	This patient is predicted to have an increased risk of severe or life-threatening toxicity when treated with fluorouracil (5-FU) at the standard dose. Reduce starting dose by 50%. Closely monitor for toxicity with subsequent titration of 5-FU as clinically indicated.	128000001	CL PGX PATIENT HAS FLUOROUROCIL ORDER	1 AND (2 OR 3)
			128000002	CL PGX DPYD INTERMEDIATE METABOLIZER 1.5	
			128000003	CL PGX DPYD INTERMEDIATE METABOLIZER	
128000097	BASE PGX FLUOROURACIL/DPYD .5	This patient is predicted to have an increased risk of severe or life-threatening toxicity when treated with fluorouracil (5-FU) at the standard dose. Avoid use of 5-FU. If alternative agents are not considered a suitable option, administer 5-FU at a strongly reduced dose (i.e., < 25% of normal starting dose).	12800000100	CL PGX DPYD GENOTYPE TO POOR ACTIVITY SCORE .5 BPA RULE	(1 OR 2) AND 3
			1280000102	CL PGX DPYD ACTIVITY SCORE RESULT COMPONENT .5	
			128000001	CL PGX PATIENT HAS FLUOROUROCIL ORDER	
12800096	BASE PGX FLUOROURACIL/DPYD POOR 0	This patient is predicted to have an increased risk of life-threatening toxicity when treated with fluorouracil (5-FU) at the standard dose. Avoid use of 5-FU.	12800000101	CL PGX DPYD GENOTYPE TO POOR ACTIVITY SCORE 0 BPA RULE	(1 OR 2) AND 3
			10280000103	CL PGX DPYD ACTIVITY SCORE RESULT COMPONENT 0	
			128000001	CL PGX PATIENT HAS FLUOROUROCIL ORDER	
128000048	BASE PGX FLURBIPROFEN/CYP2C9 INTERMEDIATE METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with flurbiprofen. Initiate therapy with the lowest recommended starting dose.	128000042	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE 1 GENOMIC INDICATOR	(1 OR 3) AND 2
			128000047	CL PGX PATIENT HAS FLURBIPROFEN MEDICATION	
			1280000099	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE	

128000050	BASE PGX FLURBIPROFEN/CYP2C9 POOR	This patient is predicted to have an increased risk of side effects when treated with flurbiprofen at the standard dose. Initiate therapy with 25-50% of the lowest recommended starting dose (i.e. 50-75% dose reduction). Treatment with an alternative therapy could also be considered (i.e., aspirin, naproxen, ketorolac, sulindac).	128000045	CL PGX CYP2C9 POOR METABOLIZER GENOMIC INDICATOR	(1 OR 2) AND 3
			1280000097	CL PGX CYP2C9 POOR ACTIVITY SCORE	
			128000047	CL PGX PATIENT HAS FLURBIPROFEN MEDICATION	
4884	BASE PGX FLUVOXAMINE/CYP2D6 INTERMEDIATE METABOLIZER	This patient is a CYP2D6 intermediate metabolizer and may be at an increased risk of toxicity with fluvoxamine.	128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	(1 OR 2) AND 3
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
			4885	CL PGX PATIENT HAS FLUVOXAMINE ORDER	
4886	BASE PGX FLUVOXAMINE/CYP2D6 POOR METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with fluvoxamine at the standard dose. Consider a 25–50% reduction of recommended starting dose or use an alternative drug not metabolized by CYP2D6.	128000082	CL PGX CYP2D6 POOR METABOLIZER	(1 OR 2) AND 3
			1280000096	CL PGX CYP2D6 POOR ACTIVITY SCORE	
			4885	CL PGX PATIENT HAS FLUVOXAMINE ORDER	
128000201	BASE PGX HLA-A 31-01 POS/HLA-B 15-02 NEG OR UNKNOWN CARBAMAZEPINE	This patient is HLA-A*31:01 positive and may be at an increased risk of carbamazepine-induced Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN), drug reaction with eosinophilia and systemic symptoms (DRESS), and maculopapular exanthema (MPE).	128000108	CL PGX PATIENT ON CARBAMAZEPINE	1 AND 2 AND 3
			128000101	CL PGX HLA-A 31-01 POS	
			128000102	CL PGX HLA-B 15-02 NEG	
128000203	BASE PGX HLA-A 31-01 POS/HLA-B 15-02 POS CARBAMAZEPINE	This patient is HLA-B*15:02 positive and HLA-A*31:01 positive and may be at an increased risk of carbamazepine-induced Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN), drug reaction with eosinophilia and systemic symptoms (DRESS), and maculopapular exanthema (MPE). If the patient is carbamazepine-naive and alternative agents are available, do not use carbamazepine. If the patient has previously used carbamazepine for longer than 3 months without incidence of cutaneous adverse reactions, cautiously consider use of carbamazepine. Please consult a clinical pharmacist for more information.	128000108	CL PGX PATIENT ON CARBAMAZEPINE	1 AND 2 AND 3
			128000101	CL PGX HLA-A 31-01 POS	
			128000103	CL PGX HLA-B 15-02 POS	
128000205	BASE PGX HLA-B 15-02 POS FOSPHENYTOIN	This patient is HLA-B*15:02 positive and this is associated with high risk of cutaneous adverse drug reaction to fosphenytoin. DO NOT prescribe fosphenytoin, phenytoin, carbamazepine, or oxcarbazepine. Choose an alternate antiepileptic drug. If the patient has previously used fosphenytoin consistently for longer than three months without incidence of cutaneous adverse reactions, cautiously consider use of fosphenytoin in the future. Please consult a clinical pharmacist for more information.	128000110	CL PGX PATIENT ON FOSPHENYTOIN	1 AND 2
			128000103	CL PGX HLA-B 15-02 POS	
128000204	BASE PGX HLA-B 15-02 POS OXCARBAZEPINE	This patient is HLA-B*15:02 positive and may be at an increased risk of oxcarbazepine-induced Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN). If the patient is oxcarbazepine-naive and alternative agents are available, do not use oxcarbazepine. If the patient has previously used oxcarbazepine for longer than 3 months without incidence of cutaneous adverse reactions, cautiously consider use of oxcarbazepine. Please consult a clinical pharmacist for more information.	128000109	CL PGX PATIENT ON OXCARBAZEPINE	1 AND 2
			128000103	CL PGX HLA-B 15-02 POS	
128000206	BASE PGX HLA-B 15-02 POS PHENYTOIN	This patient is HLA-B*15:02 positive and this is associated with high risk of cutaneous adverse drug reaction to phenytoin. DO NOT prescribe phenytoin, fosphenytoin, carbamazepine, or oxcarbazepine. Choose an alternate antiepileptic drug. If the patient has previously used phenytoin consistently for longer than three months without incidence of cutaneous adverse reactions, cautiously consider use of phenytoin in the future. Please consult a clinical pharmacist for more information.	128000111	CL PGX PATIENT ON PHENYTOIN	1 AND 2
			128000103	CL PGX HLA-B 15-02 POS	
128000202	BASE PGX HLA-B 15-02 POS/HLA-A 31-01 NEG OR UNKNOWN CARBAMAZEPINE	This patient is HLA-B*15:02 positive and may be at an increased risk of carbamazepine-induced Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN). If the patient is carbamazepine-naive and alternative agents are available, do not use carbamazepine. If the patient has previously used carbamazepine for longer than 3 months without incidence of cutaneous adverse reactions, cautiously consider use of carbamazepine. Please consult a clinical pharmacist for more information.	128000108	CL PGX PATIENT ON CARBAMAZEPINE	1 AND 2 AND 3
			128000100	CL PGX HLA-A 31-01 NEG	
			128000103	CL PGX HLA-B 15-02 POS	
128000207	BASE PGX HLA-B 57-01 POS ABACAVIR	This patient is HLA-B*57:01 positive and this is associated with high risk of severe hypersensitivity to abacavir. DO NOT prescribe abacavir per the FDA's black box warning. Please consult a clinical pharmacist for more information.	128000112	CL PGX PATIENT ON ABACAVIR	1 AND 2
			128000105	CL PGX HLA-B 57-01 POS	
128000208	BASE PGX HLA-B 58-01 POS ALLOPURINOL	This patient is HLA-B*58:01 positive, which indicates that the patient is at risk of developing a serious dermatologic reaction, including Toxic Epidermal Necrolysis or Stevens-Johnson Syndrome. Allopurinol is contraindicated. Please consult a clinical pharmacist for more information.	128000113	CL PGX PATIENT ON ALLOPURINOL	1 AND 2
			128000107	CL PGX HLA-B 58-01 POS	

128000054	BASE PGX IBUPROFEN/CYP2C9 INTERMEDIATE METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with ibuprofen. Initiate therapy with the lowest recommended starting dose.	128000055	CL PGX PATIENT HAS IBUPROFEN MEDICATION	1 AND (2 OR 3)
			128000042	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE 1 GENOMIC INDICATOR	
			1280000099	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE	
128000056	BASE PGX IBUPROFEN/CYP2C9 POOR	This patient is predicted to have an increased risk of side effects when treated with ibuprofen at the standard dose. Initiate therapy with 25-50% of the lowest recommended starting dose (i.e. 50-75% dose reduction). Treatment with an alternative therapy could be considered (i.e., aspirin, naproxen, ketorolac, sulindac).	128000055	CL PGX PATIENT HAS IBUPROFEN MEDICATION	1 AND (2 OR 3)
			128000045	CL PGX CYP2C9 POOR METABOLIZER GENOMIC INDICATOR	
			1280000097	CL PGX CYP2C9 POOR ACTIVITY SCORE	
1280000212	BASE PGX IFNL4 UNFAVORABLE/PEGINTERFERON ALFA-2A	This patient is predicted to have a decreased likelihood of response (lower sustained virologic response) to peginterferon alfa and ribavirin therapy as compared to patients with a favorable response genotype.	1280000214	CL PGX PATIENT ON PEGINTERFERON ALFA-2A	
			1280000213	CL PGX IFNL4 UNFAVORABLE RESPONSE GENOTYPE	
1280000216	BASE PGX IFNL4 UNFAVORABLE/PEGINTERFERON ALFA-2B	This patient is predicted to have a decreased likelihood of response (lower sustained virologic response) to peginterferon alfa and ribavirin therapy as compared to patients with a favorable response genotype.	1280000215	CL PGX PATIENT ON PEGINTERFERON ALFA-2B	
			1280000213	CL PGX IFNL4 UNFAVORABLE RESPONSE GENOTYPE	
128000036	BASE PGX IRINOTECAN/UGT1A1 POOR	This patient is predicted to have an increased risk of severe toxicity when treated with irinotecan at the standard dose. Reduce starting dose by 30%. Closely monitor for toxicity with subsequent titration of irinotecan as clinically indicated.	128000037	CL PGX UGT1A1 POOR METABOLIZER GENOMIC INDICATOR	1 AND 2
			128000033	CL PGX PATIENT HAS IRINOTECAN MEDICATION	
128000057	BASE PGX MELOXICAM/CYP2C9 INTERMEDIATE METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with meloxicam at the standard dose. Initiate therapy with 50% of the lowest recommended starting dose. Treatment with an alternative therapy could also be considered (i.e., aspirin, naproxen, ketorolac, sulindac).	128000058	CL PGX PATIENT HAS MELOXICAM MEDICATION	1 AND (2 OR 3)
			128000042	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE 1 GENOMIC INDICATOR	
			1280000099	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE	
128000059	BASE PGX MELOXICAM/CYP2C9 POOR	This patient is predicted to have an increased risk of side effects when treated with meloxicam. Choose an alternative therapy not metabolized by CYP2C9 (i.e., aspirin, naproxen, ketolorac, sulindac).	128000058	CL PGX PATIENT HAS MELOXICAM MEDICATION	1 AND (2 OR 3)
			128000045	CL PGX CYP2C9 POOR METABOLIZER GENOMIC INDICATOR	
			1280000097	CL PGX CYP2C9 POOR ACTIVITY SCORE	
4882	BASE PGX NORTRIPTYLINE/CYP2D6 INTERMEDIATE METABOLIZER	This patient may be at an increased risk of side effects when treated with nortriptyline at the standard dose. Consider a 25% reduction of recommended starting dose or an alternative drug not metabolized by CYP2D6.	4881	CL PGX PATIENT HAS NORTRIPTYLINE ORDER	1 AND (2 OR 3)
			128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
4883	BASE PGX NORTRIPTYLINE/CYP2D6 POOR METABOLIZER	This patient may be at an increased risk of side effects when treated with nortriptyline at the standard dose. Consider a 50% reduction of recommended starting dose or an alternative drug not metabolized by CYP2D6.	4881	CL PGX PATIENT HAS NORTRIPTYLINE ORDER	1 AND (2 OR 3)
			128000082	CL PGX CYP2D6 POOR METABOLIZER	
			1280000096	CL PGX CYP2D6 POOR ACTIVITY SCORE	
4880	BASE PGX NORTRIPTYLINE/CYP2D6 ULTRARAPID METABOLIZER	This patient may have reduced efficacy when treated with nortriptyline. Consider alternative drug not metabolized by CYP2D6.	4881	CL PGX PATIENT HAS NORTRIPTYLINE ORDER	1 AND (2 OR 3)
			128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	
			1280000093	CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE	
4891	BASE PGX ONDANSETRON/CYP2D6 ULTRARAPID METABOLIZER	This patient is predicted to have reduced efficacy with ondansetron. Select an alternative drug not predominantly metabolized by CYP2D6 (i.e., granisetron).	128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	(1 OR 2) AND 3
			1280000093	CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE	
			4892	CL PGX ONDANSETRON MEDICATION	
4889	BASE PGX PAROXETINE/CYP2D6 INTERMEDIATE METABOLIZER	This patient is a CYP2D6 intermediate metabolizer and may be at an increased risk of toxicity with paroxetine.	128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	1 AND 2
			4888	CL PGX PATIENT HAS PAROXETINE MEDICATION	
4890	BASE PGX PAROXETINE/CYP2D6 POOR METABOLIZER	This patient may be at an increased risk of side effects when treated with paroxetine at the standard dose. Consider a 50% reduction of recommended starting dose or select an alternative drug not predominantly metabolized by CYP2D6.	128000082	CL PGX CYP2D6 POOR METABOLIZER	(1 OR 2) AND 3
			1280000096	CL PGX CYP2D6 POOR ACTIVITY SCORE	
			4888	CL PGX PATIENT HAS PAROXETINE MEDICATION	
4887	BASE PGX PAROXETINE/CYP2D6 ULTRARAPID METABOLIZER	This patient is predicted to have reduced efficacy when treated with paroxetine. Select alternative drug not predominantly metabolized by CYP2D6.	128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	(1 OR 2) AND 3
			1280000093	CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE	
			4888	CL PGX PATIENT HAS PAROXETINE MEDICATION	
128000066	BASE PGX PHENYTOIN/CYP2C9 INTERMEDIATE ACTIVITY SCORE 1	This patient may be at an increased risk of side effects when treated with phenytoin at the standard dose. For first dose, use typical initial or loading dose. For subsequent doses, use ~25% less than typical maintenance dose. Subsequent doses should be adjusted according to therapeutic drug monitoring, response and side effects.	128000067	CL PGX PATIENT HAS PHENYTOIN MEDICATION	1 AND (2 OR 3)
			128000042	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE 1 GENOMIC INDICATOR	
			1280000099	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE	
128000068	BASE PGX PHENYTOIN/CYP2C9 POOR	This patient is a CYP2C9 poor metabolizer and may be at an increased risk of toxicity with phenytoin.	128000067	CL PGX PATIENT HAS PHENYTOIN MEDICATION	1 AND 2
			128000045	CL PGX CYP2C9 POOR METABOLIZER GENOMIC INDICATOR	

128000060	BASE PGX PIROXICAM/CYP2C9 INTERMEDIATE METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with piroxicam. Choose an alternative therapy not metabolized by CYP2C9 (i.e., aspirin, naproxen, ketolorac, sulindac).	128000061	CL PGX PATIENT HAS PIROXICAM MEDICATION	1 AND (2 OR 3)
			128000042	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE 1 GENOMIC INDICATOR	
			1280000099	CL PGX CYP2C9 INTERMEDIATE ACTIVITY SCORE	
128000062	BASE PGX PIROXICAM/CYP2C9 POOR	This patient is predicted to have an increased risk of side effects when treated with piroxicam. Choose an alternative therapy not metabolized by CYP2C9 (i.e., aspirin, naproxen, ketolorac, sulindac).	128000061	CL PGX PATIENT HAS PIROXICAM MEDICATION	1 AND (2 OR 3)
			128000045	CL PGX CYP2C9 POOR METABOLIZER GENOMIC INDICATOR	
			1280000097	CL PGX CYP2C9 POOR ACTIVITY SCORE	
1280000209	BASE PGX SCLO1B1 DECREASED/SIMVASTATIN	Based on the genotype result, this patient is predicted to have SLCO1B1 decreased function and may be at increased risk for developing simvastatin-associated myopathy. Prescribe an alternative statin depending on the desired potency. If simvastatin therapy is warranted, limit dose to < 20 mg/day. Please consult a clinical pharmacist for more information.	1280000210	CL PGX PATIENT ON SIMVASTATIN	1 AND 2
			1280000211	CL PGX SLCO1B1 DECREASED FUNCTION	
128000073	BASE PGX SERTRALINE/CYP2C19 POOR METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with sertraline at the standard dose. Consider a 50% reduction of recommended starting dose and titrate to response or select alternative drug not predominantly metabolized by CYP2C19.	4833	CL PGX PATIENT HAS SERTRALINE ORDERED	1 AND 2
			128000010	CL PGX CYP2C19 POOR METABOLIZER GENOMIC INDICATOR	
4835	BASE PGX SERTRALINE/CYP2C19 RAPID METABOLIZER	This patient is a CYP2C19 rapid metabolizer and may have increased metabolism of sertraline.	4833	CL PGX PATIENT HAS SERTRALINE ORDERED	1 AND 2
			4810	CL PGX CYP2C19 RAPID METABOLIZER GENOMIC INDICATOR	
4834	BASE PGX SERTRALINE/CYP2C19 ULTRARAPID METABOLIZER	This patient is a CYP2C19 ultrarapid metabolizer and may have increased metabolism of sertraline.	4833	CL PGX PATIENT HAS SERTRALINE ORDERED	1 AND 2
			128000009	CL PGX CYP2C19 ULTRARAPID METABOLIZER GENOMIC INDICATOR	
1280000217	BASE PGX SLCO1B1 POOR/SIMVASTATIN	Based on the genotype result, this patient is predicted to have SLCO1B1 poor function and may be at increased risk for developing simvastatin-associated myopathy. Prescribe an alternative statin depending on the desired potency. Please consult a clinical pharmacist for more information.	1280000210	CL PGX PATIENT ON SIMVASTATIN	1 AND 2
			1280000211	CL PGX SLCO1B1 DECREASED FUNCTION	
4907	BASE PGX TACROLIMUS/CYP3A5 INTERMEDIATE METABOLIZER	This patient is a CYP3A5 intermediate metabolizer and may require a higher initial dose due to altered drug metabolism. Consider initiating tacrolimus at 1.5-2 times the standard dose.	4906	CL PGX CYP3A5 INTERMEDIATE METABOLIZER	1 AND 2
			128000022	CL PGX PATIENT HAS TACROLIMUS MEDICATION	
128000020	BASE PGX TACROLIMUS/CYP3A5 NORMAL METABOLIZER	This patient has a lower chance of achieving target tacrolimus concentrations and may require a higher starting dose. Consider initiating tacrolimus at 1.5-2 times the standard dose.	128000021	CL PGX CYP3A5 NORMAL/INTERMEDIATE METABOLIZER GENOMIC INDICAT	1 AND 2
			128000022	CL PGX PATIENT HAS TACROLIMUS MEDICATION	
4903	BASE PGX TAMOXIFEN/CYP2D6 INTERMEDIATE METABOLIZER	This patient is predicted to have reduced efficacy with tamoxifen. Consider hormonal therapy such as an aromatase inhibitor for postmenopausal women or aromatase inhibitor along with ovarian function suppression in premenopausal women. If aromatase inhibitor use is contraindicated, consideration should be given to use a higher but FDA approved tamoxifen dose (40 mg/day). Avoid CYP2D6 inhibitors.	128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	(1 OR 2) AND 3
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
			4904	CL PGX TAMOXIFEN MEDICATION	
4905	BASE PGX TAMOXIFEN/CYP2D6 POOR METABOLIZER	This patient is predicted to have reduced efficacy with tamoxifen. Consider alternative hormonal therapy such as an aromatase inhibitor for postmenopausal women or aromatase inhibitor along with ovarian function suppression in premenopausal women.	128000082	CL PGX CYP2D6 POOR METABOLIZER	(1 OR 2) AND 3
			1280000096	CL PGX CYP2D6 POOR ACTIVITY SCORE	
			4904	CL PGX TAMOXIFEN MEDICATION	
4901	BASE PGX TRAMADOL/CYP2D6 INTERMEDIATE METABOLIZER	This patient is predicted to have a decreased analgesic effect with tramadol. Use label recommended dosing. If no response, consider an alternative opioid. Avoid codeine and hydrocodone.	128000081	CL PGX CYP2D6 INTERMEDIATE METABOLIZER	(1 OR 2) AND 3
			1280000095	CL PGX CYP2D6 INTERMEDIATE ACTIVITY SCORE	
			4900	CL PGX TRAMADOL MEDICATION	
4899	BASE PGX TRAMADOL/CYP2D6 POOR METABOLIZER	This patient is predicted to have a diminished analgesic effect with tramadol. Avoid tramadol use. If opioid use is warranted, consider an alternative opioid. Avoid codeine and hydrocodone.	128000082	CL PGX CYP2D6 POOR METABOLIZER	(1 OR 2) AND 3
			1280000096	CL PGX CYP2D6 POOR ACTIVITY SCORE	
			4900	CL PGX TRAMADOL MEDICATION	
4902	BASE PGX TRAMADOL/CYP2D6 ULTRARAPID METABOLIZER	This patient is predicted to have an increased risk of side effects when treated with tramadol. Avoid use of tramadol, codeine, and hydrocodone.	128000080	CL PGX ULTRARAPID CYP2D6 METABOLIZER	(1 OR 2) AND 3
			1280000093	CL PGX CYP2D6 ULTRARAPID ACTIVITY SCORE	
			4900	CL PGX TRAMADOL MEDICATION	
128000015	BASE PGX VORICONAZOLE/CYP2C19 POOR	This patient is predicted to have an increased risk of side effects when treated with voriconazole at standard dose.	128000010	CL PGX CYP2C19 POOR METABOLIZER GENOMIC INDICATOR	1 AND 2
			128000016	CL PGX PATIENT HAS VORICONAZOLE MEDICATION	
4809	BASE PGX VORICONAZOLE/CYP2C19 RAPID METABOLIZER	This patient may not achieve the desired therapeutic plasma concentrations of voriconazole at standard dosing.	4810	CL PGX CYP2C19 RAPID METABOLIZER GENOMIC INDICATOR	1 AND 2
			128000016	CL PGX PATIENT HAS VORICONAZOLE MEDICATION	
128000017	BASE PGX VORICONAZOLE/CYP2C19 ULTRARAPID	This patient may not achieve the desired therapeutic plasma concentrations of voriconazole at standard dosing.	128000009	CL PGX CYP2C19 ULTRARAPID METABOLIZER GENOMIC INDICATOR	1 AND 2
			128000016	CL PGX PATIENT HAS VORICONAZOLE MEDICATION	