



**Partners
In Health**

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Tertiary Hospital Opening Impact on Geographic Care-Seeking Patterns in Haiti



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Who Are we?

PIH is an international health organization relentlessly committed to improving the health of the poor and marginalized.

We bring the benefits of modern medical science to some of the world's poorest communities and serve as an antidote to despair.

Zanmi Lasante, Central Haiti
Cange, 1985





PIH/ZL Catchment Area

Map items:

- ZL Supported Facility
- Departments
- Communes:**
- ZL Catchment

Department	Commune	Estimated 2013 Population*
Centre	Bebadère	85,677
	Boucan Carré	55,424
	Cerca La Source	55,922
	Hinche	119,562
	Lacabobas	45,377
	Mirebalais	96,700
	Saut d'Eau	88,647
	Savannette	85,810
	Thomonde	61,212
	Total	594,331
Lower Artibonite	Petite Rivière	171,436
	Saint-Marc	267,729
	Verrettes	145,404
	Total	584,569
Total		1,178,900

* l'Institut Haïtien de Statistique et d'Informatique (IHSI) and Ministère de la Santé Publique et de la Population (MSPP)

0 10 20 40 Kilometers



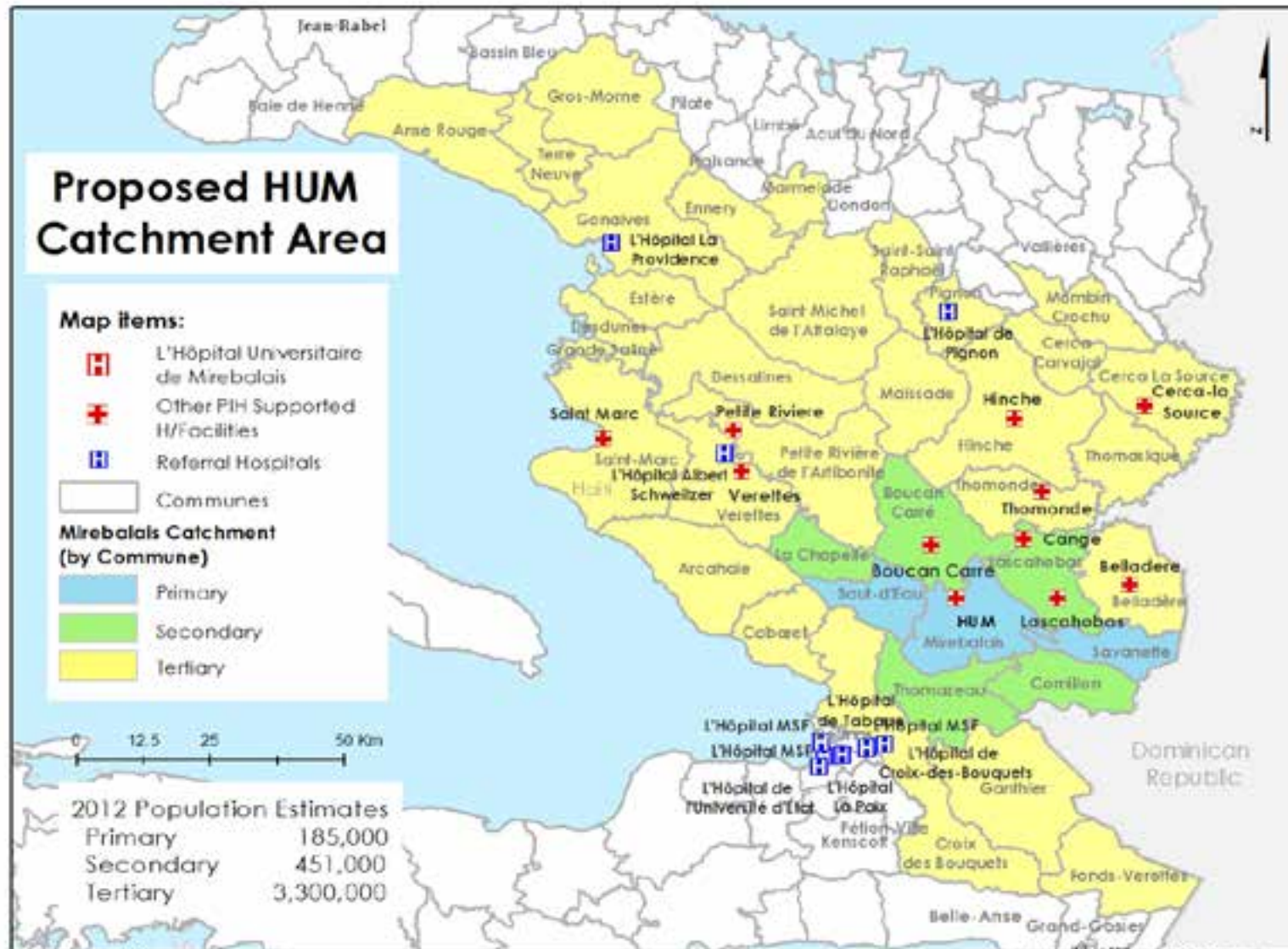
- Lacolline Hospital
Started operating in 2008
43,560-square feet, 55-bed facility
- University Hospital
Started operating in March, 2013
205,000-square feet, 300-bed facility,
over 600 outpatient visit daily



✓ Why University Hospital of Mirebalais was built?

- ∅ Primary care for 185,000 people in Mirebalais and two nearby communities
- ∅ Secondary and tertiary care for patients from a much wider area
- ∅ Provide high-quality education for the next generation of Haitian nurses, medical students, and resident physicians

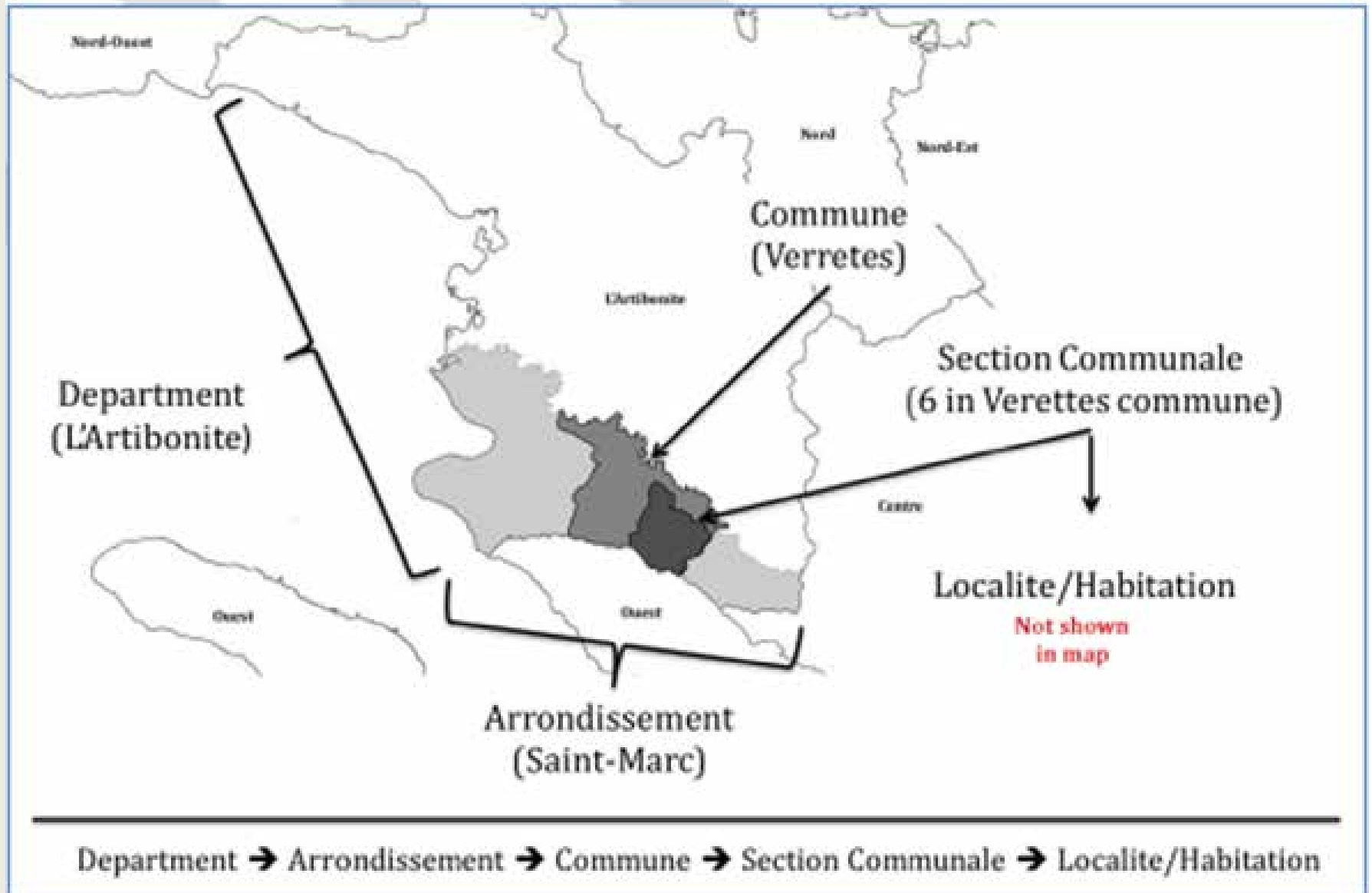






- ∨ Concern: Will opening of University Hospital adversely change current utilization patterns within the ZL primary care network in the Central Plateau?
 - ∅ i.e. patients bypass the closest health facility to their home to seek care at the new University Hospital.

- § Question: How can we know whether the opening of University Hospital has changed where residents of Lascahobas commune seek primary care?



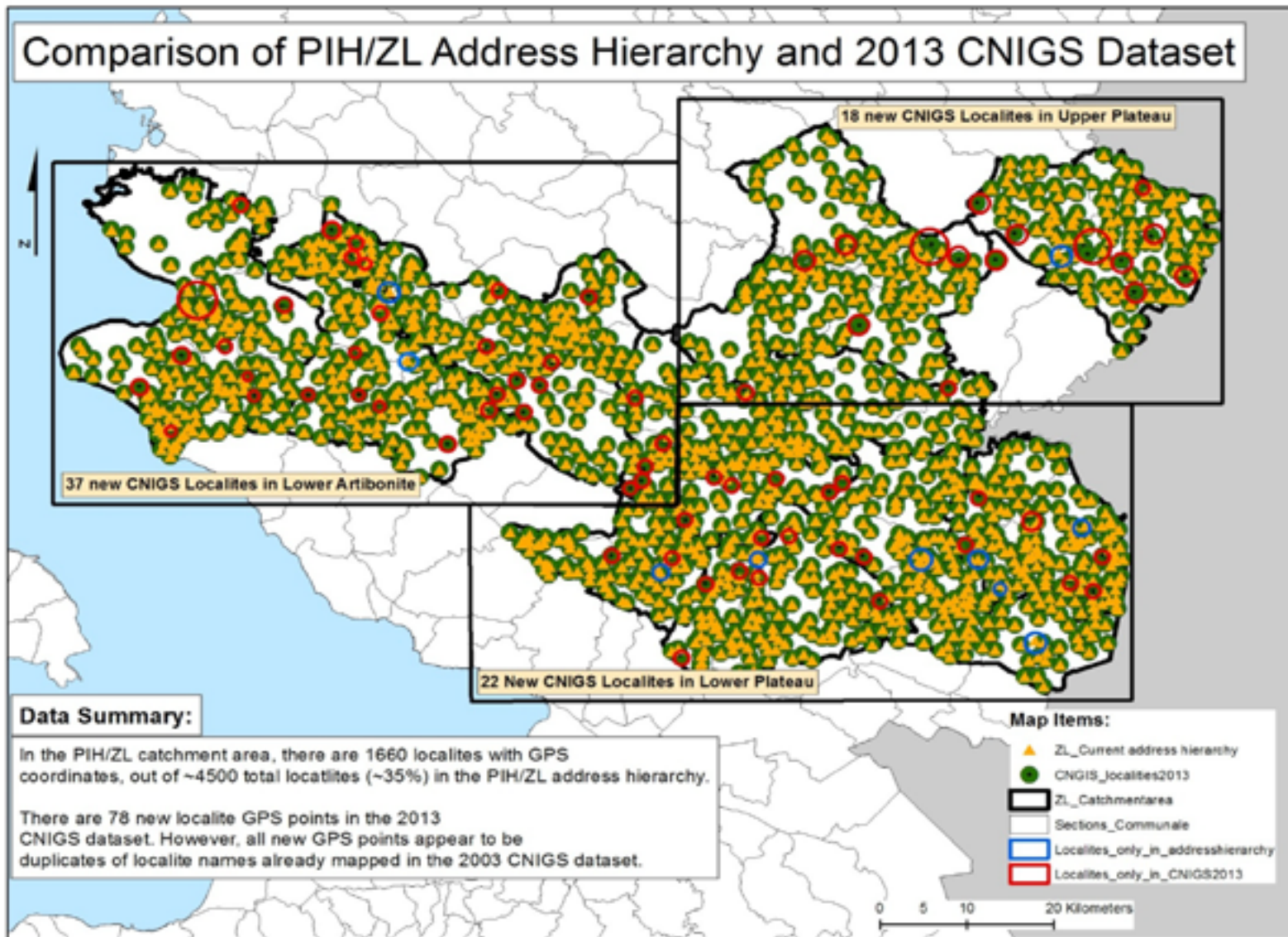


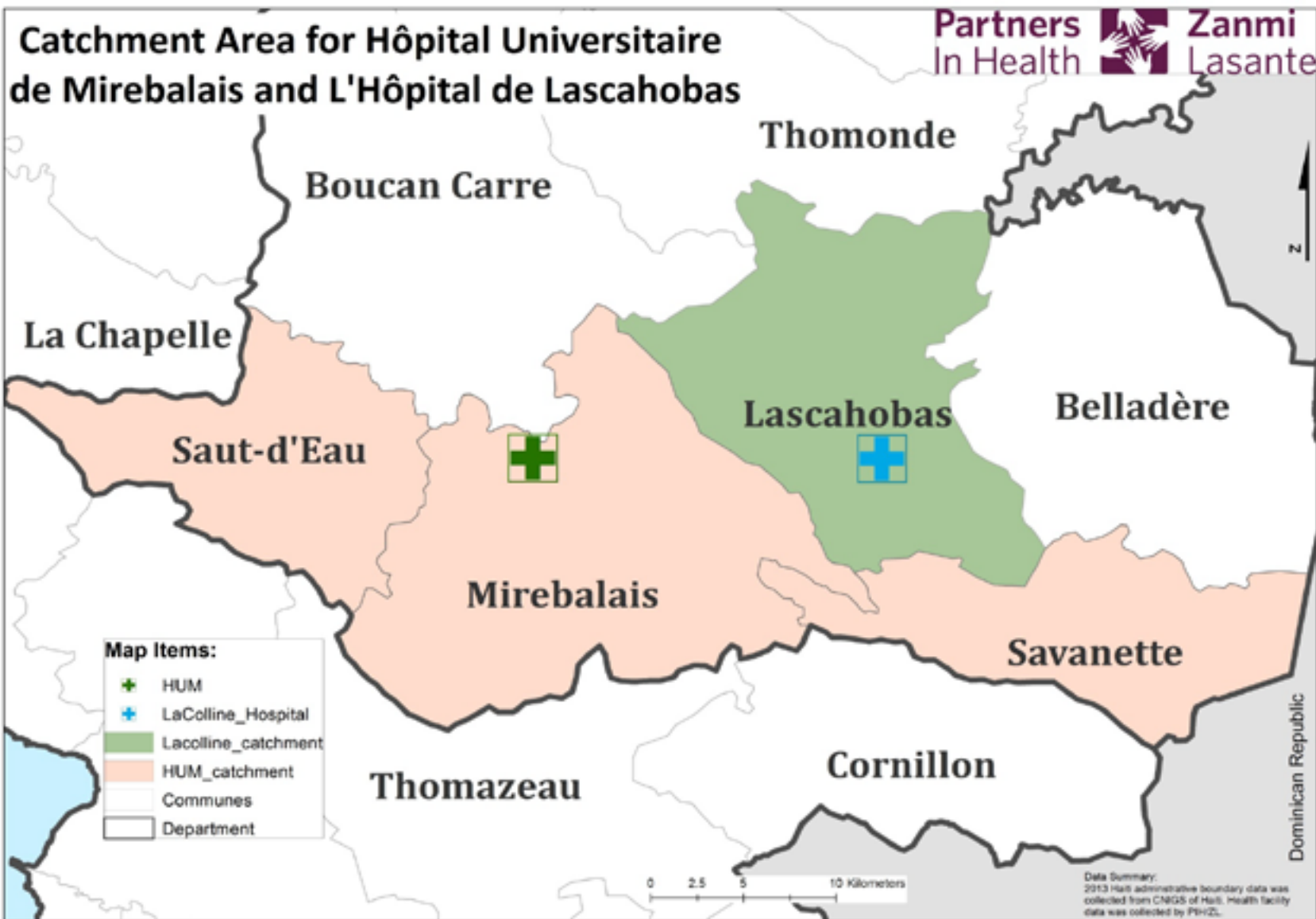
Hierarchy	Country	PIH/ZL
Department	10	1.5
Arrondissement	42	10
Commune	140	12
Section communale	570	51
Localities	>9000*	4750*

*Locality data were last collected in 1978, so reliability a concern.



Comparison of PIH/ZL Address Hierarchy and 2013 CNIGS Dataset







§ Data

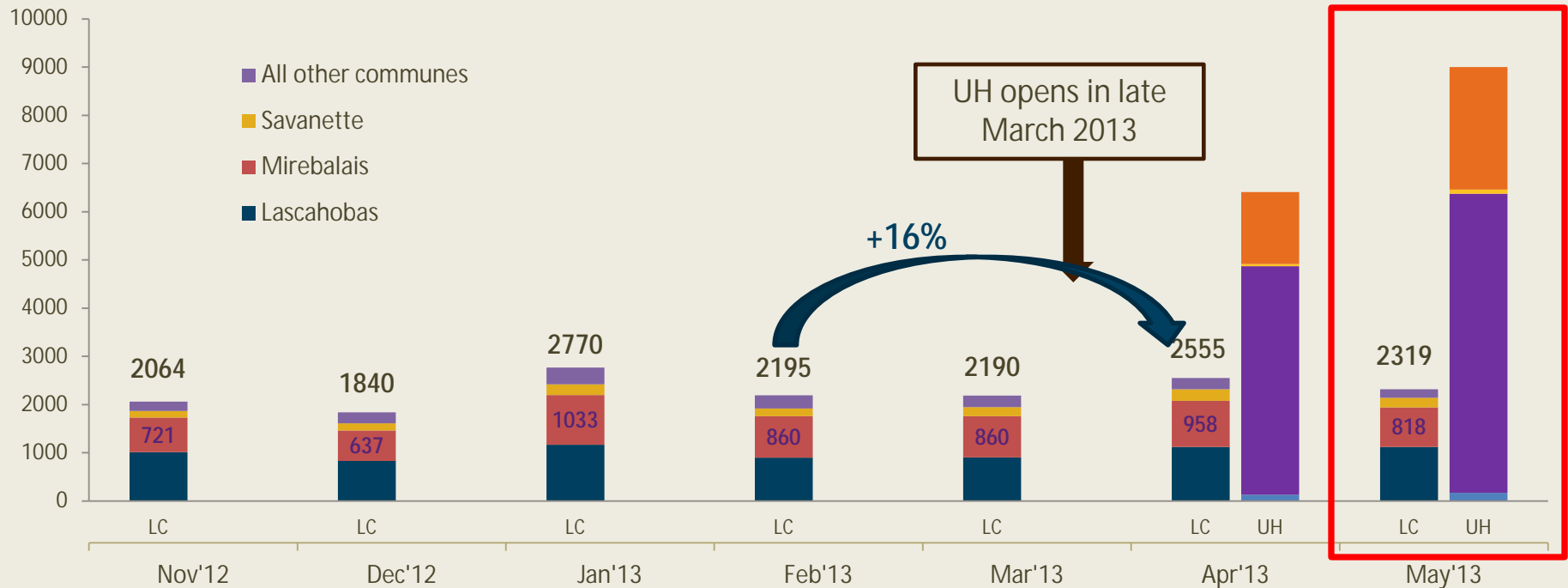
- ∅ Patient volume = Patient check-in at a hospital
 - *Collected from Electronic Medical Record (EMR) database*
- ∅ Administrative boundaries were collected from <http://haitidata.org/>
- ∅ Health facility data were collected by PIH

§ Method

- ∅ Attribute join
- ∅ Layer properties for visualization
- ∅ Geoprocessing tool in Arcmap 10.1
 - ∅ *Clip*



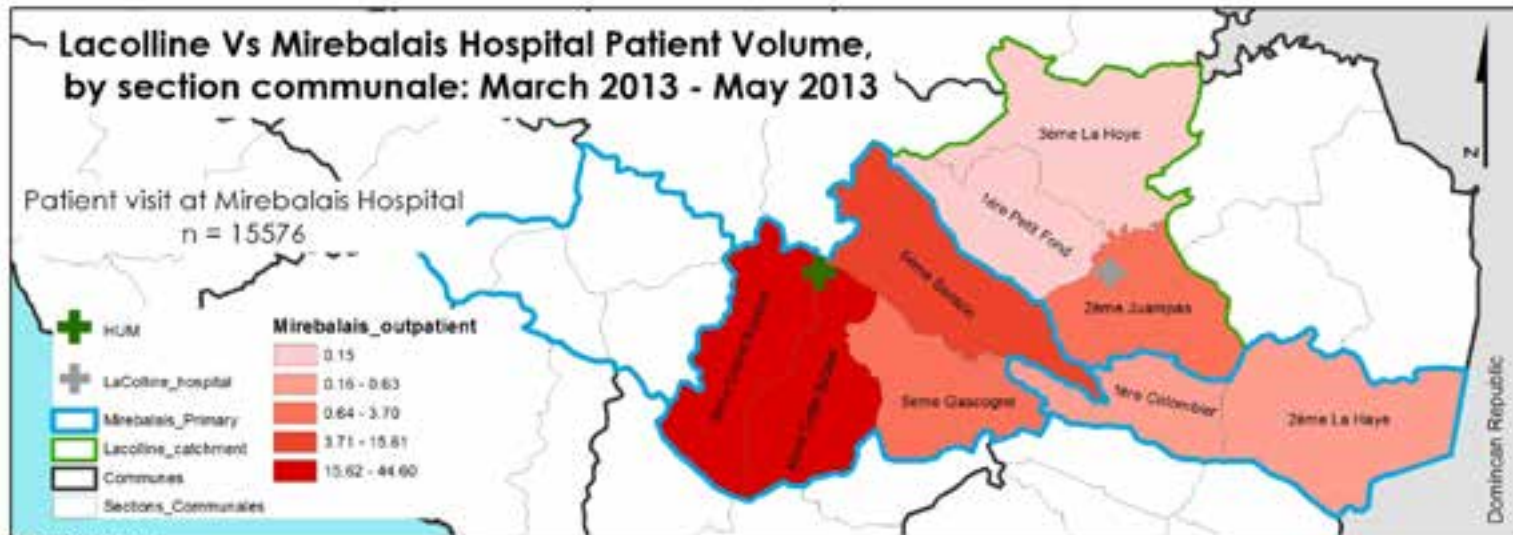
Lacolline (LC) vs. University Hospital (UH) patient visit volume, by Commune of Origin (Nov'12-May'13)



§We do NOT see an exodus of patients from LC after UH opens.

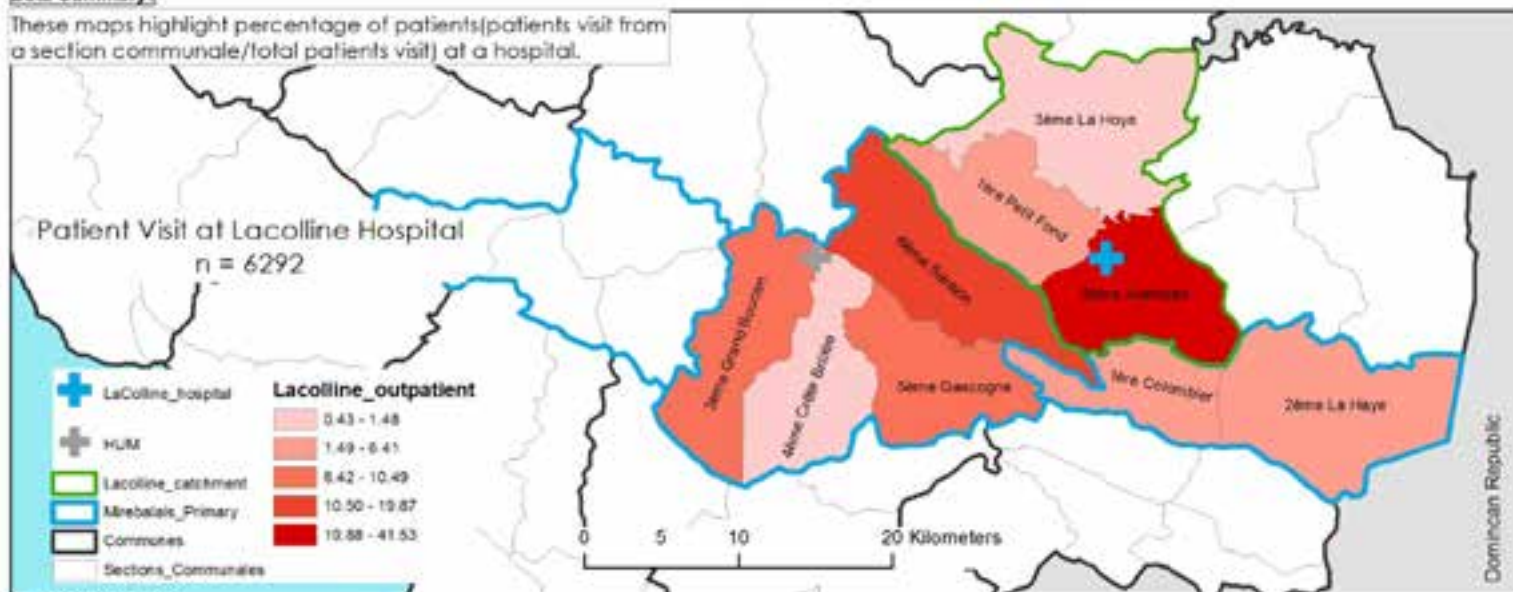
§Even as UH has seen more and more patients, patient volume at LC has not fallen. In fact, it *increased by 16%* between Feb 2013 and April 2013.

§BUT—why are large numbers of residents of Mirebalais commune still going to LC hospital for care even after a new University Hospital has opened in their home commune?

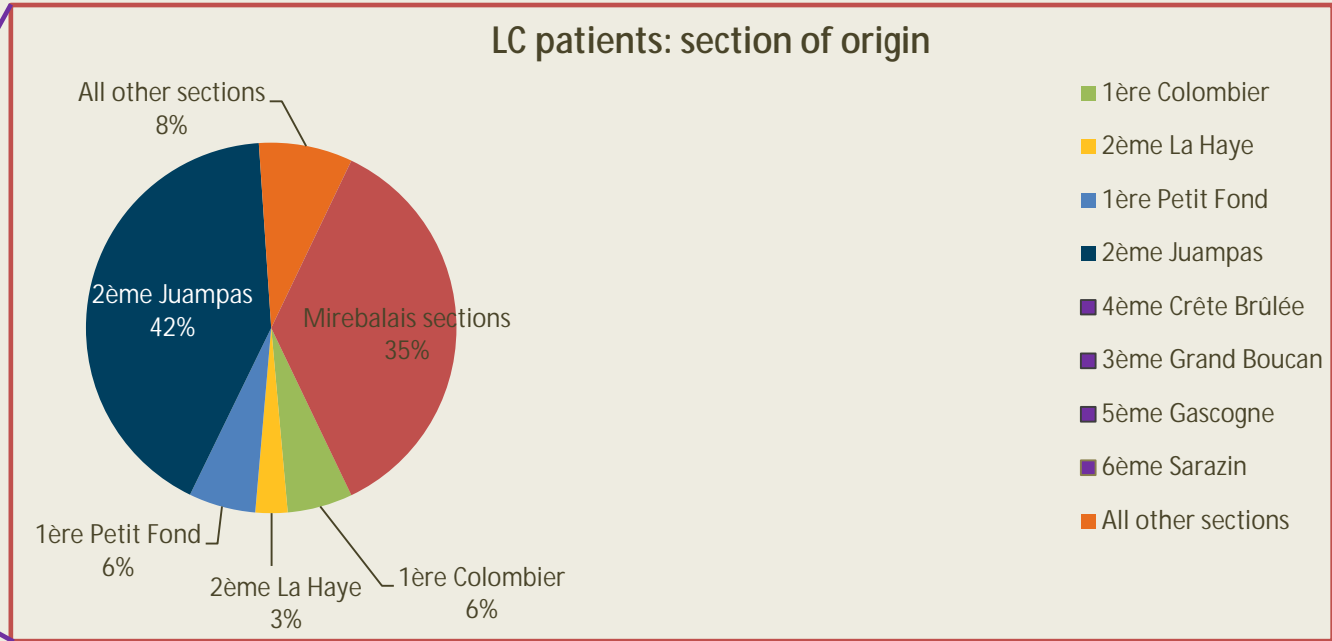
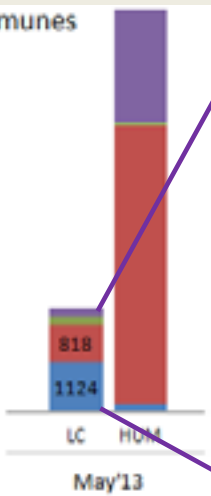


Data Summary:

These maps highlight percentage of patients (patients visit from a section communale / total patients visit) at a hospital.

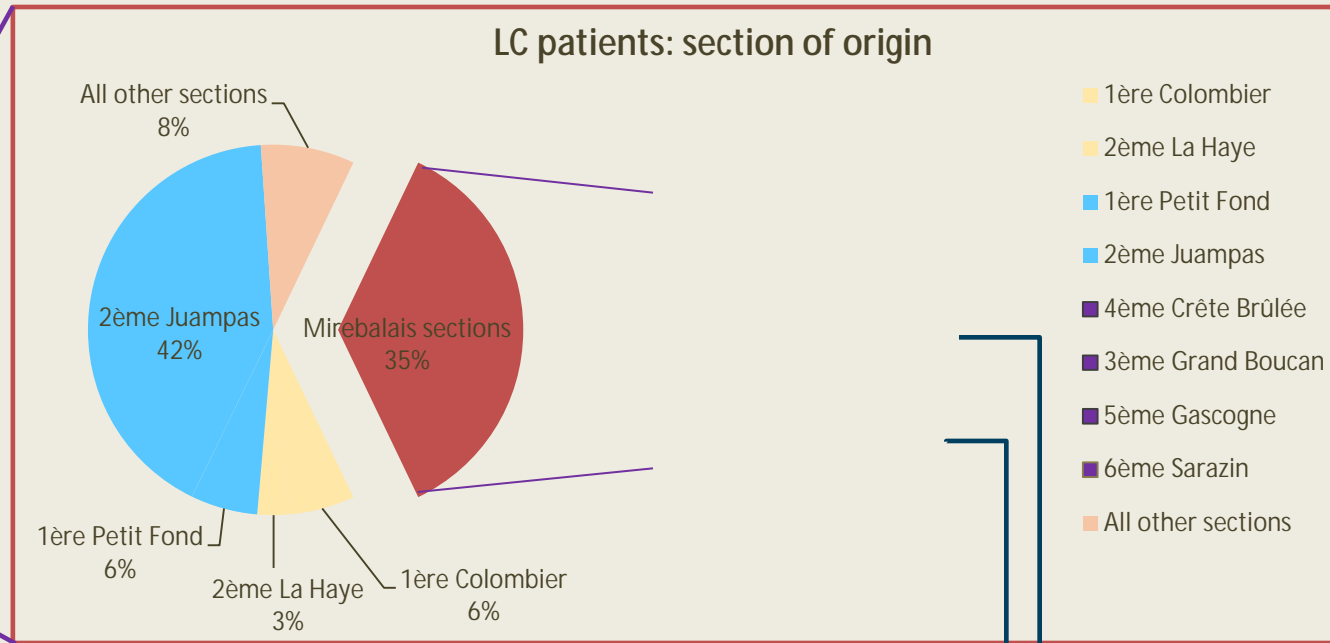
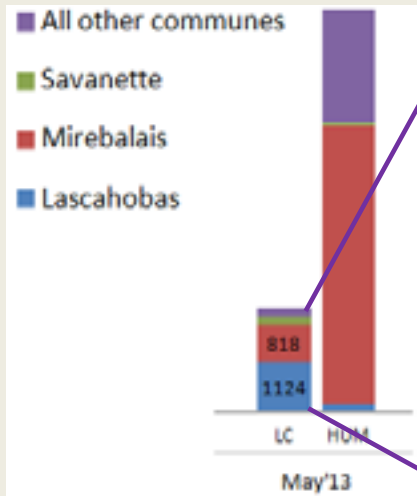


Where are patient who seek care at LC coming from (which sections)?



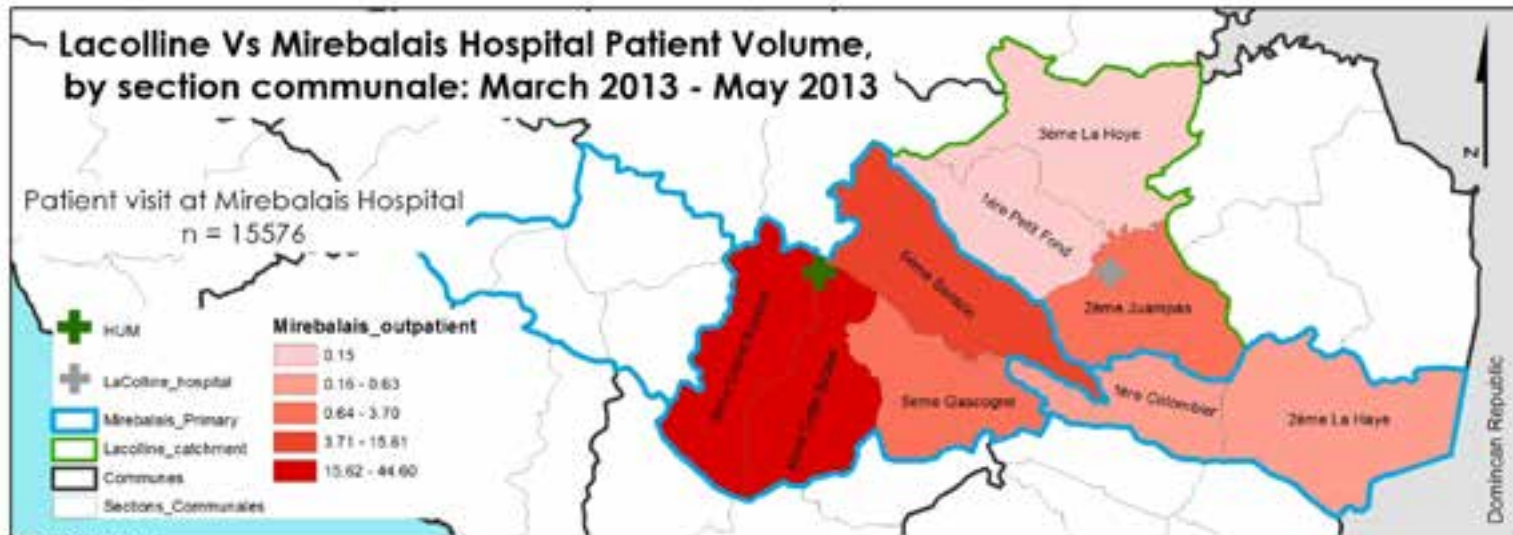
- 1ère Colombier
- 2ème La Haye
- 1ère Petit Fond
- 2ème Juampas
- 4ème Crête Brûlée
- 3ème Grand Boucan
- 5ème Gascogne
- 6ème Sarazin
- All other sections

Where are patient who seek care at LC coming from (which sections)?



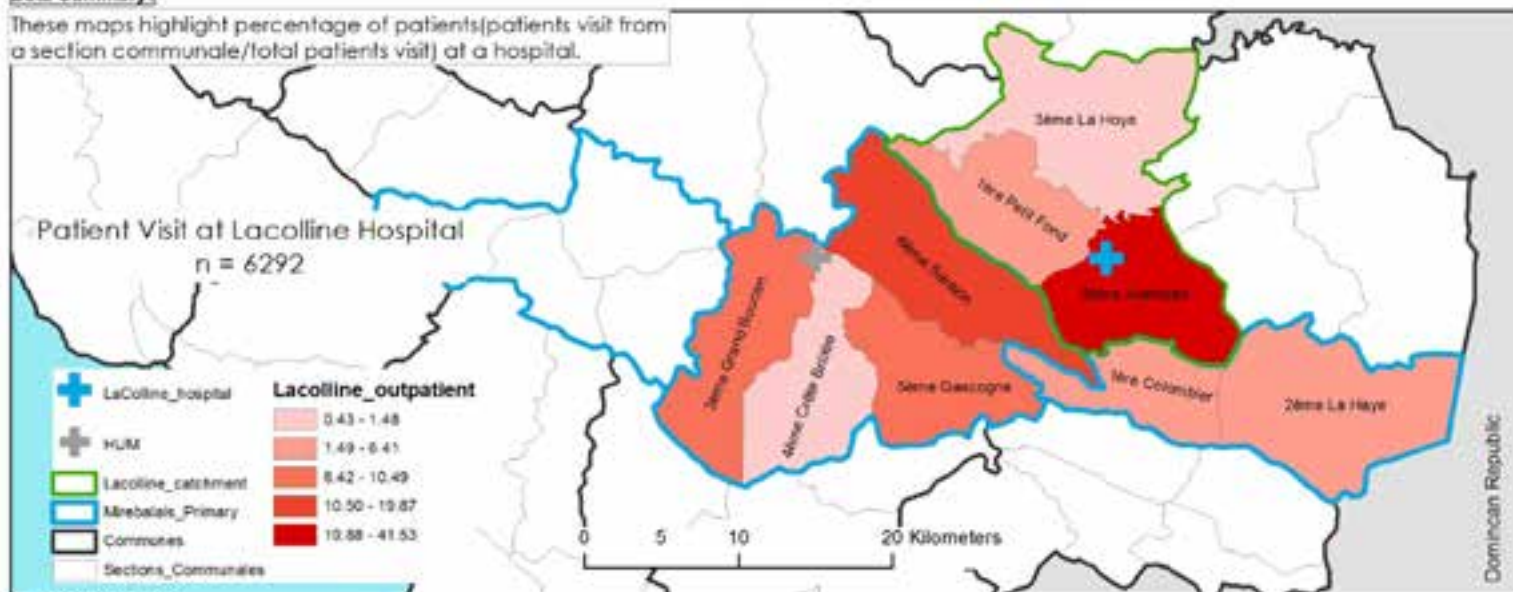
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- All other sections

77% of Lacolline hospital patients coming from Mirebalais commune are coming from the two easternmost sections (Gascogne and Sarazin), which are geographically closer to LC.

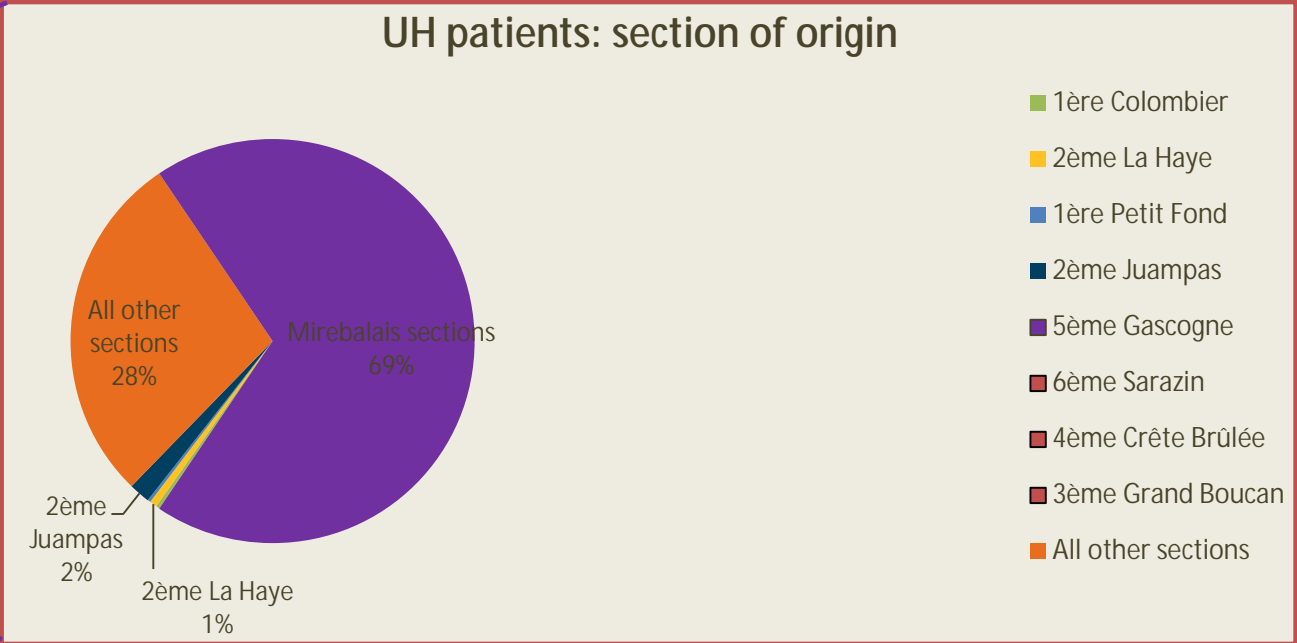
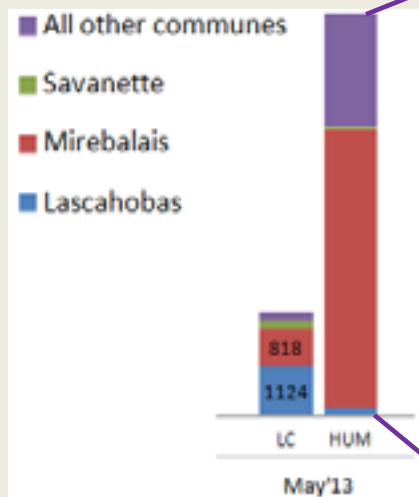


Data Summary:

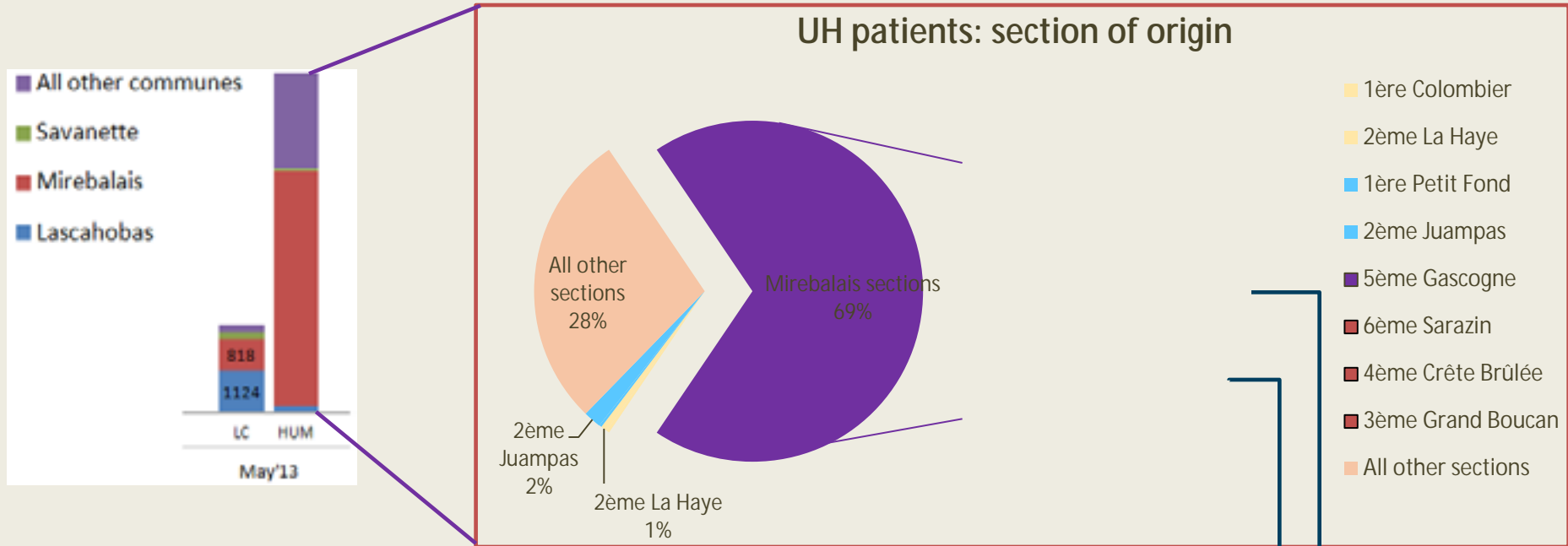
These maps highlight percentage of patients (patients visit from a section communale / total patients visit) at a hospital.



Where are patients who seek care at UH coming from (which sections)?



Where are patients who seek care at UH coming from (which sections)?



79% of UH patients coming from Mirebalais commune are coming from the two westernmost sections (Grand Boucan and Crete Brulee).

UH is addressing unmet need in primary care

§Unmet primary care need in the Centre department:

Ø37% of U5 sought treatment for fever @ a health center

Ø58% of women indicated unmet need of Women's Health

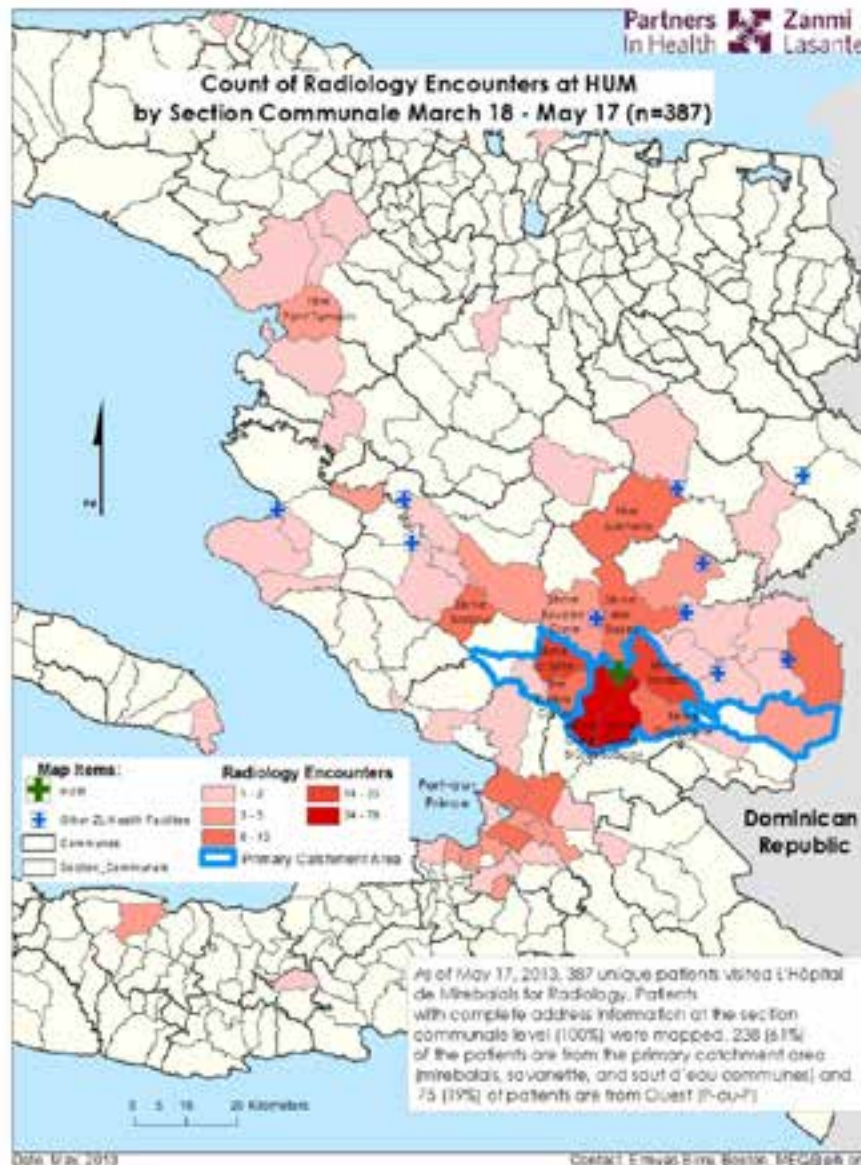
UH is addressing unmet need in primary care

§ Opening of University Hospital has NOT disrupted ZL primary care network

- Ø Increase in UH visit volume *without* a simultaneous decrease in LCH visit volume
- Ø UH has likely brought new patients into care, helping address unmet need.

§ Some residents of Mirebalais commune still seek care at LCH despite the opening of UH. **Why?**

- Ø Geographically patterned visits





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Future Collaboration



- Localite level mapping efforts
- CNIGS collaboration
- Contribution to national geo-database



- Data quality
- Lack of resources (material, human, and funding)
- Lack of on site GIS skills
- Data sharing/confidentiality
- Difficult road conditions for field data collection





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Thank You, mesi!

Men anpil chay pa lou
Many hands make light work

