Puerto Rico Occupational Licenses Analysis Project
University of Puerto Rico

Project Manager and Lead Investigator: Alex J. Ruiz Torres, PhD.
Principal Investigators: Elsa B. Nieves Rodriguez, PhD. & Karen Agosto Valentin, MPH., JD.
Research Assistants: Daniela Vicente Matos, Meryliz Suárez Torres,
José Rosario Vélez, Jeanrique Muñiz Escobar, Sabrina Morales Otero,
Evelyn Maestre Bauzó, Isabel Loubriel Concepcion, Veronica Chapero Planell

Review of Occupational Licensing Management Systems for a set of Jurisdictions in the US

Technical Report. Version 1.0: December 15/2021

Table of Contents

Agencies list 3
Abstract 4
1.Introduction 4
2.Methods 5
2.1 States selected 5
2.2 Identifying the agency/department/license specific systems 6
2.3 Type characterization 7
2.4 Subjective assessment 7
2.5 Features/functions assessment 8
2.6 Overall assessment 8
3.Results 9
3.1 State level characteristics 9
3.2 Review of the “main” LMSs by state 10
4. Benchmarking elements/concepts 14
4.1 The user interface-initial presentation 14
4.2 Listing of occupations/professions/licenses/boards 18
4.3 Presentation of information 21
4.4 Case generated checklist 29
4.5 Resources 34
5. Additional recommendations 40

List of Tables

Table 1. Sampled states and rationale 6
Table 2. Sampled occupations 6
Table 3. Functions/features considered for each LMS 8
Table 4. State level characteristics 9
Table 5. Analysis of selected LMSs 13

List of Figures

Figure 1. Initial page screenshot 14
Figure 2. Initial page screenshot 2 15
Figure 3. Barber screenshot 1 16
Figure 4. Barber screenshot 2 17
Figure 5. Screenshot illustrating list of occupations/professions/licenses – example 1 18
Figure 6. Screenshot illustrating list of occupations/professions/licenses – example 2 19
Figure 7. Screenshot illustrating list of occupations/professions/licenses – example 3 20
Figure 8. Example of good information organization: DPH – screenshot 1 21
Figure 9. Example of good information organization: DPH – screenshot 2 22
Figure 10. Example of good information organization: DPH – screenshot 3 23
Figure 11. Example of good information organization: DBPR – screenshot 1 24
Figure 12. Example of good information organization: DBPR – screenshot 2 25
Figure 13. Example of good information organization: DOL – screenshot 1 26
Figure 14. Example of good information organization: DOL – screenshot 2 27
Figure 15. Example of good information organization: DOL – screenshot 3 28
Figure 16. Interactive approach to checklist screenshot 1 29
Figure 17. Interactive approach to checklist screenshot 2 30
Figure 18. Interactive approach to checklist screenshot 3 30
Figure 19. Interactive approach to checklist screenshot 4 31
Figure 20. Interactive approach to checklist screenshot 5 31
Figure 21. Interactive approach to checklist screenshot 6 32
Figure 22. Interactive approach to checklist screenshot 7 32
Figure 23. Interactive approach to checklist screenshot 8 33
Figure 24. Interactive approach to checklist screenshot 9 33
Figure 25. Example of supporting resources – screenshot 1 34
Figure 26. Example of supporting resources – screenshot 2 35
Figure 27. Example of supporting resources – screenshot 3 35
Figure 28. Example of supporting resources – screenshot 4 36
Figure 29. Example of supporting resources – screenshot 5 37
Figure 30. Example of supporting resources – screenshot 6 38
Figure 31. Example of supporting resources – screenshot 7 39
Figure 32. Current overall structure (left) to proposed structure (right) 41
Figure 33. Relationship between users, PLP, and government agencies that license occupations 41

Agencies list

CJ	Comisión de Juegos	Game Commission
CT	Compañía de Turismo	Department of Tourism
DACO	Departamento de Asuntos del Consumidor	Department of Consumers Affairs
DH	Departamento de Hacienda	Department of the Treasury
DE	Departamento de Estado	State Department
DF	Departamento de la Familia	Department of Family Affairs
DRD	Departamento de Recreación y Deportes	Department of Sports and Recreation
DRNA	Departamento de Recursos Naturales y Ambientales	Department of Natural and Environmental Resources
DS	Departamento de Salud	Health Department
DSP	Departamento de Seguridad Pública	Department of Public Safety
NTSP	Negociado de Transporte y otros Servicios Públicos	Office of Transportation and other Public Services
OCIF	Oficina del Comisionado de Instituciones Financieras	Office of the Commissioner of Financial Institutions
OCS	Oficina del Comisionado de Seguros	Office of the Commissioner of Insurance
PJ	Poder Judicial	Department of Justice

Abstract

This report was developed under an agreement between the University of Puerto Rico and Puerto Rico's State Department (Departamento de Estado; DE). The agreement is aligned with the Ease of Doing Business division of Puerto Rico's Financial Oversight & Management Board for Puerto Rico and the approved Fiscal Plan of the Government of Puerto Rico. This report provides an analysis of the licensing systems observed in 16 states of the United States. The overall characteristics of the state systems are presented followed by a characterization of each of the state's systems. The report presents benchmark functions/components that should be considered in the development of occupational licensing systems for the commonwealth of Puerto Rico. The report concludes with recommendations for the structure of the island's occupational licensing systems.

1.Introduction

This report presents the results of research conducted over a 14-week period[1] to characterize online occupational licensing systems used in the United States. The key objective of the study was to identify benchmark systems and their features. These benchmarks will aid the government of PR and its agencies to improve the usability and efficiency of its occupational licensing systems.

At this time, there is no single occupational licensing system in Puerto Rico. The systems are occupational area specific, although for the most part aligned with one of the 14 agencies that regulate/ manage/ award the licenses. However, not all the licenses under the scope of an agency are managed by the same system. For example, in the Departamento de Salud (DS), which is the agency with the most licenses, some of the examination boards follow different approaches and systems to applying, managing, and awarding licenses.

The lack of a single occupational licensing system is not unique to Puerto Rico. All the U.S. States have multiple agencies and systems that regulate/ manage/ award licenses. This is frequently aligned with the type of occupation; thus, several jurisdictions have a licensing system for health/medical occupations, another system for "trade" type occupations, and another system for "professional" type occupations. This study aimed at analyzing the systems used to manage the licenses for all types of occupations. The end objective of this analysis is to provide a set of best of class systems and components that can be benchmarks to be used by PR's agencies in future investments.

The report is organized as follows. Section 2 describes the research and analysis methodology, including how the sampled states and occupations/licenses were selected and the assessment approach. Section 3 presents the results, whereas Section 4 presents the benchmarking elements. Finally, Section 5 provides recommendations.

[1] August 23 – November 22 2021

2.Methods

The methodology used in this research aimed at characterizing the components and features of the systems used by a selected set of states to license individuals. These components and features relate to the usability, visuals, information provided, and the actions it supported online; for example to apply for and renew licenses.

2.1 States selected

Given resource limitations, it was not possible to analyze the occupational licensing systems of every state and jurisdiction of the U.S. For that reason, a sample of 16 states was selected. This represents just under a third of the total jurisdictions in the U.S., and a large enough sample that it provides sufficient examples of the variety of licensing systems used in the nation. The selection of the particular states that were used in the sample was not random, instead based on one of two rationales:

- States that have been recognized in the literature [2] [3] as having implemented significant reforms in their licensing laws and requirements, focusing on lower requirements and burdens. It was hypothesized that states that have implemented changes to their regulations would have efficient/streamlined/user friendly online licensing systems.
- States that have significantly large populations of Puerto Rican origin[4] [5]. This would provide perspective on the type of online licensing systems individuals who may return to Puerto Rico will have experienced and expect at the time they return.

Table 1 lists the sixteen selected states. The second column is check marked if the state has been mentioned in the literature as having implemented reforms recently, while the third column is check marked if the state has been reported as having significant populations of Puerto Rican origin.

[2] https://www.lexisnexis.com/en-us/products/state-net/news/2021/02/05/Occupational-Licensing-Reform-Gains-Steam-in-Statehouses.page
[3] https://www.ncsl.org/research/labor-and-employment/the-evolving-state-of-occupational-licensing.aspx
[4] https://www.pewresearch.org/hispanic/fact-sheet/u-s-hispanics-facts-on-puerto-rican-origin-latinos/
[5] https://www.puertoricoreport.com/puerto-rican-population-in-the-states/#.YYgEAWDMLIU

Table 1. Sampled states and rationale

State	Recent reforms	PR Population
Arizona	x	
California	x	x
Colorado	x	
Connecticut	x	x
Florida		x
Idaho	x	
Illinois	x	x
Iowa	x	
Massachusetts		x
Missouri	x	
Montana	x	
New Jersey	x	x
New York		x
Pennsylvania	x	x
South Dakota	x	
Texas		x

2.2 Identifying the agency/department/license specific systems

The research had the goal to identify all the agency-department license management systems (LMS) for each of the sampled states. In order to achieve this, a sample set of 36 occupations that represented the many types of occupations that are licensed in PR was selected. The sampled occupations are presented in Table 2.

Table 2. Sampled occupations

Athletic trainer	EMT	Public Relations
Barber	Engineer	Real estate agent
Casino worker	Geologist	Real estate appraiser
Chemist	Health services administrator	Rehabilitation counselor
Children care at home	Investment advisor	Security guard
Chiropractor	Lawyer	Social worker
Contractor	Massage therapist	Speech therapist
Dentist	Mechanic	Trader (investments)
Doctor	Nurse	Travel guide
Doctor-Cannabis	Nutritionist	Truck driver
Electrician	Pharmacist	Veterinary doctor
Embalmer	Psychologist	Water treatment operator

The process first required the research team to determine if a license was required in each state for each occupation in the sample. If that was the case, the LMS used to manage/award the license was identified. The end result of this process was the identification of the multiple LMS used by each state for the 36 selected occupations. As mentioned, it is expected that based on the diversity of the occupation sample, all the LMS in each state were identified, although that cannot be guaranteed. It is noted that not all the selected occupations were licensed in each state.

2.3 Type characterization

Each LMS was initially categorized as to identify its overall approach. The three system types were the same ones used to characterize PR's systems. The types were W) Web based application/platform, E) Email based submittal, and P) In person submittal (includes cases where some processes/documents are performed/submitted by email/portal, and some are in person). This initial characterization determined if further analysis was to be performed. An analysis was only completed for LMS that were categorized as type W.

2.4 Subjective assessment

Each LMS of type W was subject to a review of seven system elements related to usability. The seven items were:

- The system is easy to navigate.
- The system provides clear instructions on how to use it.
- The requirements for a license are easy to understand.
- Information is easy to find.
- All required information is available.
- The system is visually attractive.
- Hyperlinks and web pages work appropriately.

For each item the assessment was based on a Likert scale with the following definitions:

1. Agree
2. Somewhat Agree
3. Somewhat Disagree
4. Disagree

Most of the systems were reviewed by more than one researcher. In such cases the average or consensus rating was kept.

2.5 Features/functions assessment

The features/functions available in each LMS were identified. The list of functions is presented in Table 3, organized by "topic". The review identified if this feature was available, but due to resource and time constraints it did not attempt to measure its quality and degree of "coverage".

Table 3. Functions/features considered for each LMS

User support	Checklists per license to help applicants.
	Spanish option (website available in Spanish).
	Systems supports accessibility for people with disabilities.
	The system provides help guides.
	The system provides video tutorials.
Operational	Links to examinations (if required for a license).
	Mobile version.
	Online address change.
	Online payment.
	Option to transfer test results from other states.
	Uploading of documents.
Information	Easily indicates contingency options in case of an emergency situation.
	Provide information on status of applications.
	Provide information on the time it takes to complete the process.
	Provides information on reciprocity.
	System provides information regarding the laws, statues, and other regulations that establish the licenses.
Post licensing information	System allows the verification of a license.
	System provides a list of licensed individuals.

2.6 Overall assessment

The final step of the review process was to award an overall score for the LMS system. The response was based on a Likert scale with the following values:

1. Exceptional
2. Excellent
3. Very good
4. Good
5. Fair
6. Poor
7. Very poor

3.Results

3.1 State level characteristics

The results at the state level are presented in Table 4, where the last row provides Puerto Rico's information as a point of comparison. Column #LMS indicates the number of LMS identified per state, while column #W indicate how many are of type W (percentage in parenthesis). Column #L indicates the number of occupations licensed in the state (out of the 36 in the sample) and Column #L-W indicates how many are managed by a LMS of type W (percentage in parenthesis).

Table 4. State level characteristics

State	# LMS	# W	# L	# L - W
Arizona	4	3 (75%)	31	27 (87%)
California	8	2 (25%)	26	2 (7%)
Colorado	5	4 (80%)	26	25 (96%)
Connecticut	5	1 (20%)	27	22 (81%)
Florida	9	5 (55%)	31	27 (87%)
Idaho	5	1 (20%)	30	2 (6%)
Illinois	5	3 (60%)	27	23 (85%)
Iowa	9	3 (33%)	30	20 (66%)
Massachusetts	3	2 (66%)	30	28 (93%)
Missouri	7	1 (14%)	28	1 (3%)
Montana	7	6 (85%)	31	30 (96%)
New Jersey	9	9 (100%)	29	29 (100%)
New York	7	7 (100%)	33	33 (100%)
Pennsylvania	8	2 (25%)	28	20 (71%)
South Dakota	7	1 (14%)	28	12 (42%)
Texas	18	15 (83%)	30	25 (83%)
Puerto Rico	**14**	**4 (28%)**	**36**	**26 (72%)**

Massachusetts is the state with the fewest number of LMS at 3, while Texas has the most systems (18), the only state with more systems than Puerto Rico. The average number of LMS for the sample is just above 7, therefore PR has approximately double the average at the "agency" based level of 14. Two states (New Jersey and New York) have all their LMS of type W, while several states have only one of their systems of type W (therefore, less than 25% of their systems are of type W). Puerto Rico's 4 systems of W type, which represent 28%, is on the lower end of the sample, but not among the *worst* cases. It is quite interesting to note that several states that were selected due to their licensing reform efforts (Idaho, Missouri, South Dakota) are among the state with lowest percentage of W systems.

None of the sampled states licenses all the 36 sampled occupations, with an average of 29 occupations being licensed. New York is the state that licenses the most occupations out of the sample, 33 out of 36, while Colorado and California license the fewest at 26. Of relevance to this study is the percentage of licenses that are managed by an LMS of type W. As New York and New Jersey have all their LMS of type W, all their licenses are managed by type W systems. On average for all the sampled states, 70% of the licenses are managed by LMS, with California, Idaho, and Missouri being states where less than 10% of their licenses are managed by a LMS of type W. In this respect, PR's performance of 72% of the licenses being managed by a system of type W is in line with the average and well above the worst cases.

3.2 Review of the "main" LMSs by state

Each state in the sample had one or two "main" LMS that managed a majority of its licenses. For 13 out of the 16 states, this system was of type W. The usability characteristics for these main systems is presented in Table 5. Table 5 includes the state and an abbreviation for LMS agency or system, with an embedded hyperlink to the site. The next 8 columns relate to the subjective assessments (see section 2.4), where a 1 is agree and a 4 disagree (full scale below the table). The bottom of the table provides the legend for the abbreviations used. The next columns relate to the percentage of features observed for the system, where the Total column indicates the percent of all the features identified in section 2.5. The last column of Table 5 relates to the overall assessment, noting E = Excellent, VG = Very good, G = Good and F = Fair. General comments related to the state's systems are presented next.

Arizona (AZ): The main LMS is a subsystem of the state portal az.gov https://az.gov/work/employment#section2. This LMS manages most of the sampled licenses and it has the highest "performance" of the three systems of type W in this state. This LMS is included in Table 5.

California (CA): The main LMS for the State of California is in the state portal as part of the Department of Consumer Affairs: https://www.dca.ca.gov/splash.shtml. This LMS is not of the W type and none of the W types identified in the research had an overall positive assessment. No system from California is included in Table 5.

Colorado (CO): The main LMS is https://dora.colorado.gov/ from the Department of Regulatory Agencies (DORA). This LMS is included in Table 5. Colorado has three other LMS of type W, but none has better assessments than the DORA system.

Connecticut (CT): The state website is ct.gov and from this location two agencies have their specific licensing sub-systems: https://portal.ct.gov/DPH (Department of Public Health: DPH) and https://portal.ct.gov/DCP (Department of Consumer Protection). The transactional elements for both occur at https://www.elicense.ct.gov/. The LMS from the DPH is included in Table 5.

Florida (FL): Nine LMS were identified for the state of Florida. The two systems that manage the most licenses also had the highest average ratings and are both of type W. They are

http://www.floridahealth.gov/licensing-and-regulation/ (Florida Department of Health) and http://www.myfloridalicense.com/DBPR/ (Florida Department of Business & Professional Regulation: FDBPR). Both systems are included in Table 5.

Idaho (ID): The main LMS for this state is https://dopl.idaho.gov/ from the Division of Occupational and Professional Licenses. This system includes all types of licenses, containing those related to health and professional occupations. This LMS is however, not of type W. Of the three other LMS for this state only one is of type W and it did not have overall positive ratings, therefore no LMS from Idaho is included in Table 5.

Illinois (IL): The main LMS for this state is https://www.idfpr.com/ from the Department of Financial and Professional Regulation (IDFPR). This agency regulates healthcare as well as other professional occupations. The characteristics for this system are reported in Table 5. There are two other LMS of type W in this state, but they did not receive positive evaluations and therefore not included in the Table.

Iowa (IA): Nine LMS were identified for this state, with three being of type W. The main system with 17 of the licensed occupations is https://idph.iowa.gov/Licensing from the Department of Public Health. This system manages a variety of occupations from Emergency Medical Services to Barbers. This is the highest rated system of type W and included in Table 5 for completeness.

Massachusetts (MA): This is the state with the fewest LMS, and its main system is a part of mass.gov. The https://www.mass.gov/topics/professional-licenses-permits manages the licensing processes and seems to fall under the state's Division of Occupational Licensure (DOL). This system is included in Table 5.

Missouri (MO): Similar to Idaho, the main LMS system for this state is not of type W. The system is https://pr.mo.gov/ from the Division of Professional Registration. There is one LMS in this state of type W, but it was not included in Table 5 as it is related to a single license and did not receive a positive review.

Montana (MT): The main LMS for this state is https://boards.bsd.dli.mt.gov/ from the Department of Labor and Industry - Professional Boards & Licensing Business Standards Division. This system is included in Table 5.

New Jersey (NJ): This is one of two states where all the LMS are of type W. The main system is https://www.njconsumeraffairs.gov/Pages/Applying-For-A-License.aspx from the Division of Consumer Affairs. This system is used for 20 of the sampled licenses, while each of the other 8 LMS for this state has a single license from the sample. The system from the Division of Consumer Affairs is included in Table 5.

New York (NY): This is the second state that has all of its LMS of type W. This state has two "main" LMS with over 10 of the sampled occupations in each of the two systems. The first is http://www.op.nysed.gov/ from the Office of the Professions and its "focus" is health related occupations, while the second is part of the main state system: ny.gov, specifically https://www.ny.gov/services/apply-professional-license. Only the first LMS is included in Table 5 as the second received poor evaluations.

Pennsylvania (PA): The main LMS is https://www.pals.pa.gov/#/page/default a component of the pa.gov site, being one of two systems of type W for this state. The system is called PALS (Pennsylvania Licensing Systems) and is from the Department of State. This system is included in Table 5.

South Dakota (SD): This is one state where licensing reform did not translate into "effective" LMSs. There are two main LMS, one is https://doh.sd.gov/boards/ from the Department of Health and the second is https://dlr.sd.gov/ from the Department of Labor & Regulation, in particular their boards subsystem https://dlr.sd.gov/boards_commissions_councils.aspx. Only the first system is of type W (out of seven LMS). This system is included in Table 5.

Texas (TX): Texas is the state with the most LMS, a total of 18. This is the case as many boards and commissions have independent systems. The main LMS is https://www.tdlr.texas.gov/ from the Department of Licensing and Regulation. This system is type W and included in Table 5. It is noted that of the 18 systems, 15 are type W and multiple received good evaluations. The "best" type W LMS from Texas is https://www.pharmacy.texas.gov/licensees/ from the Texas State Board of Pharmacy (TSBP). This system is also included in Table 5.

The systems presented in Table 5 represent in general the "best" cases, but not all represent benchmarks/ points of reference. Six of the fifteen systems have average subjective assessment of 1.1 (this means only one value of 2). These systems have good visuals, are well organized, and have the required information easily accessible. None of the systems had all the "desirable" features, and the percentages across the different subjects varied across them. It is noted that the post licensing have the highest percentage, while the user support functions have the lowest percentage. Furthermore, all the features are available in some of the systems. Finally, two of the systems were ranked as Excellent, and six as Very Good. Elements and features from the analyzed systems, and that represent benchmarks, are described in the next section.

Table 5. Analysis of selected LMSs

		Subjective Assessment								Features/Functions Assessment				Overall
		Nav	Instr	Requ	Easy	Avail	Visual	Hyper	AVG	User	Ops	Info	Post	
AZ	az.gov	2	2	1	2	1	2	1	1.6	40%	100%	100%	100%	VG
CO	DORA	1	1	1	2	1	1	1	1.1	20%	83%	20%	100%	VG
CT	DHP	1	1	1	1	1	2	1	1.1	40%	83%	80%	100%	VG
FL	FL Health	1	1	1	1	1	2	1	1.1	40%	83%	80%	100%	VG
	DBPR	2	2	1	1	1	2	1	1.4	60%	83%	60%	100%	VG
IL	IDFPR	1	1	1	1	2	1	1	1.1	40%	83%	40%	50%	G
IA	IDPH	2	2	2	2	2	3	3	2.3	40%	83%	60%	100%	F
MA	DOL	1	2	1	1	1	1	1	1.1	40%	83%	60%	100%	E
MO	PBLBSD	2	2	1	2	2	1	1	1.6	20%	100%	40%	100%	G
NJ	DCA	2	2	2	2	2	2	1	1.9	0%	50%	20%	100%	F
NY	OP	2	2	1	1	2	2	1	1.6	80%	100%	60%	50%	VG
PA	PALS	1	2	1	2	2	2	2	1.7	80%	83%	60%	50%	G
SD	DOH	3	3	2	2	2	3	2	2.4	80%	33%	40%	100%	F
TX	TDLR	2	2	2	2	1	2	1	1.7	60%	83%	80%	100%	G
	TSBP	1	1	1	1	1	2	1	1.1	80%	83%	100%	100%	E

Nav	The system is easy to navigate.
Instr	The system provides clear instructions on how to use it.
Requ	The requirements for a license are easy to understand.
Easy	Information is easy to find.
Avail	All required information is available.
Visual	The system is visually attractive.
Hyper	Hyperlinks and web pages work appropriately.

User	User support
Ops	Operational
Info	Information
Post	Post licensing information

Scale	
1	Agree
2	Partially Agree
3	Partially Disagree
4	Disagree

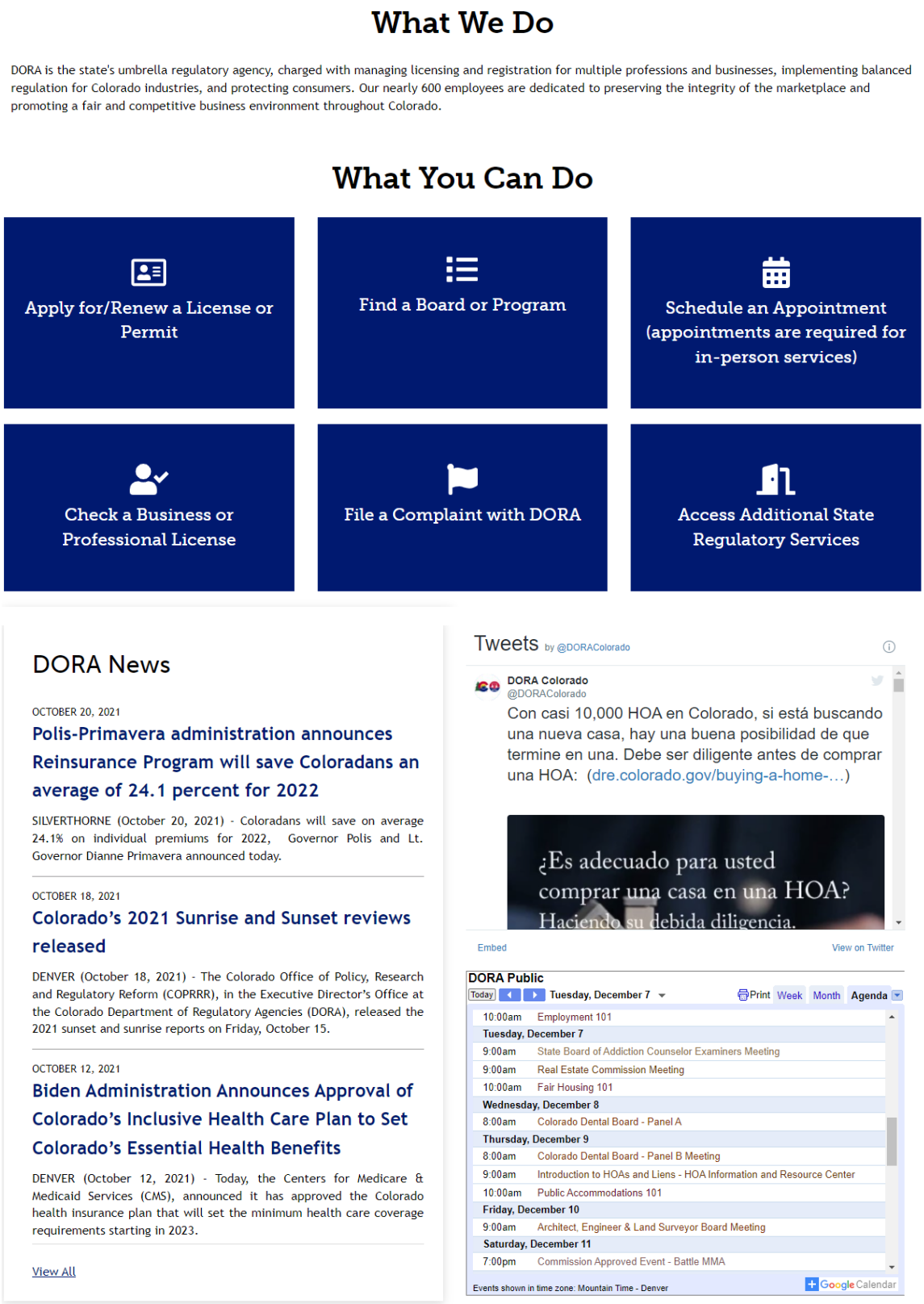
4. Benchmarking elements/concepts

4.1 The user interface-initial presentation

This relates to the initial presentation of the system. The system by the Department of Regulatory Agencies (DORA) from the state of Colorado provides a simple and effective benchmark; it is well organized and has nice visual elements. It clearly states objectives and key functionalities followed by news, a schedule of events, and links for additional support. The screenshots in Figures 1 and 2 present the system's initial interfaces/ start pages.

Figure 1. Initial page screenshot

Figure 2. Initial page screenshot 2



The screenshots in Figures 3 and 4 provide an example of the information presentation for one of the occupation/licensing “areas”: barber. It is noted that it follows a similar format / visual style.

Figure 3. Barber screenshot 1

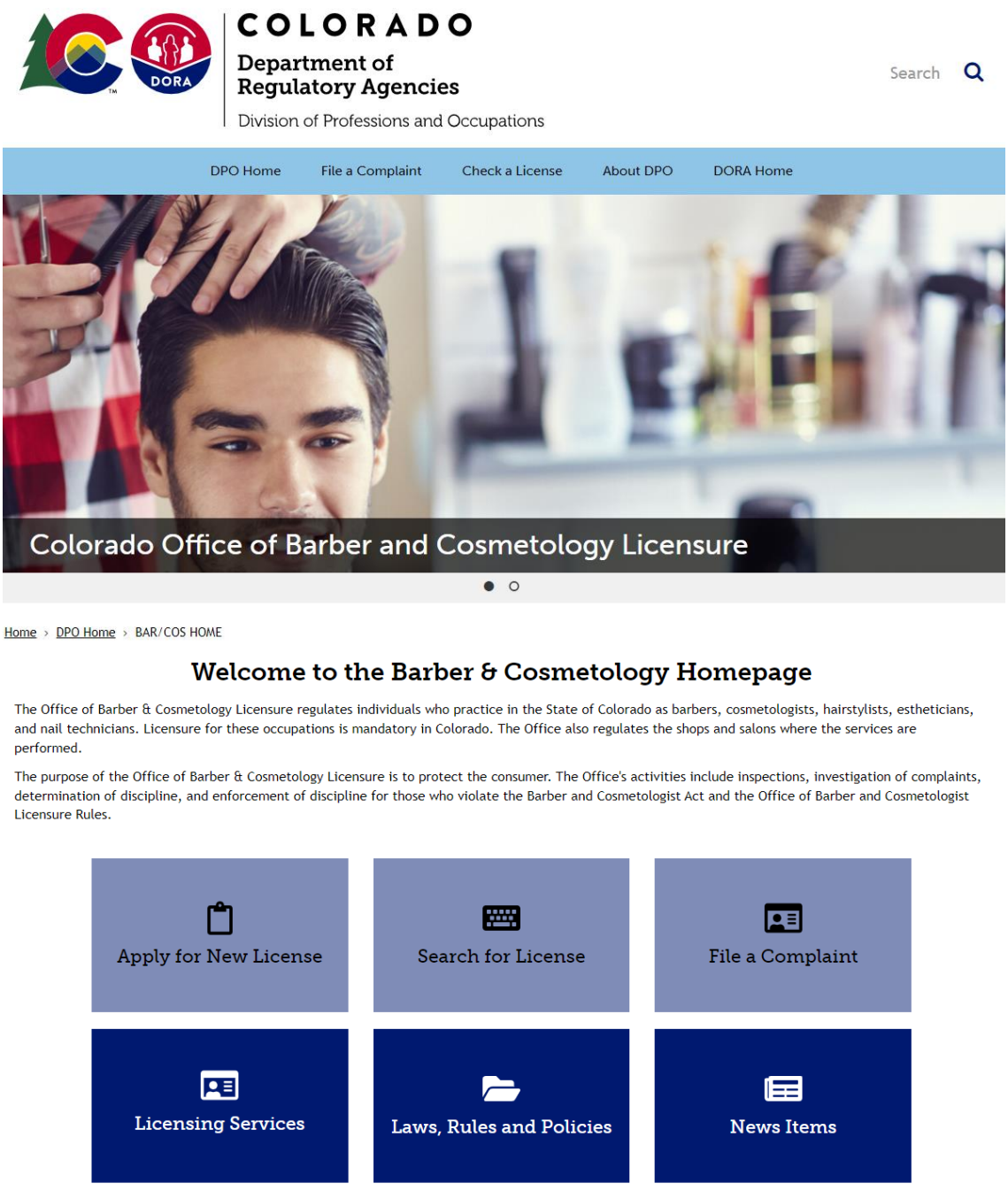
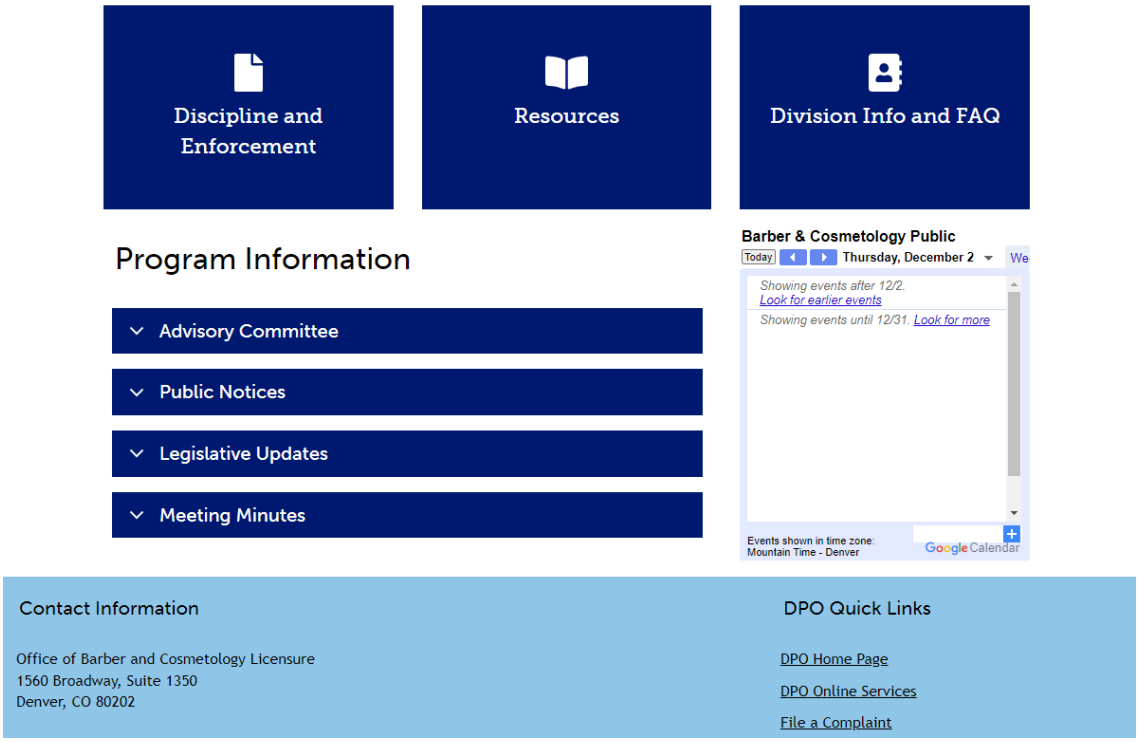


Figure 4. Barber screenshot 2



4.2 Listing of occupations/professions/licenses/boards

A common feature of the LMSs with positive evaluations was that they provided a single point of information that listed all the occupations/boards under their scope. Figures 5 to 7 provide examples: the first two screenshots are from systems in California: DCA and the Office of the Small Business Advocate, while the third is from Florida Health. We note that the two California systems are not type W, but have some useful online features.

Figure 5. Screenshot illustrating list of occupations/professions/licenses – example 1

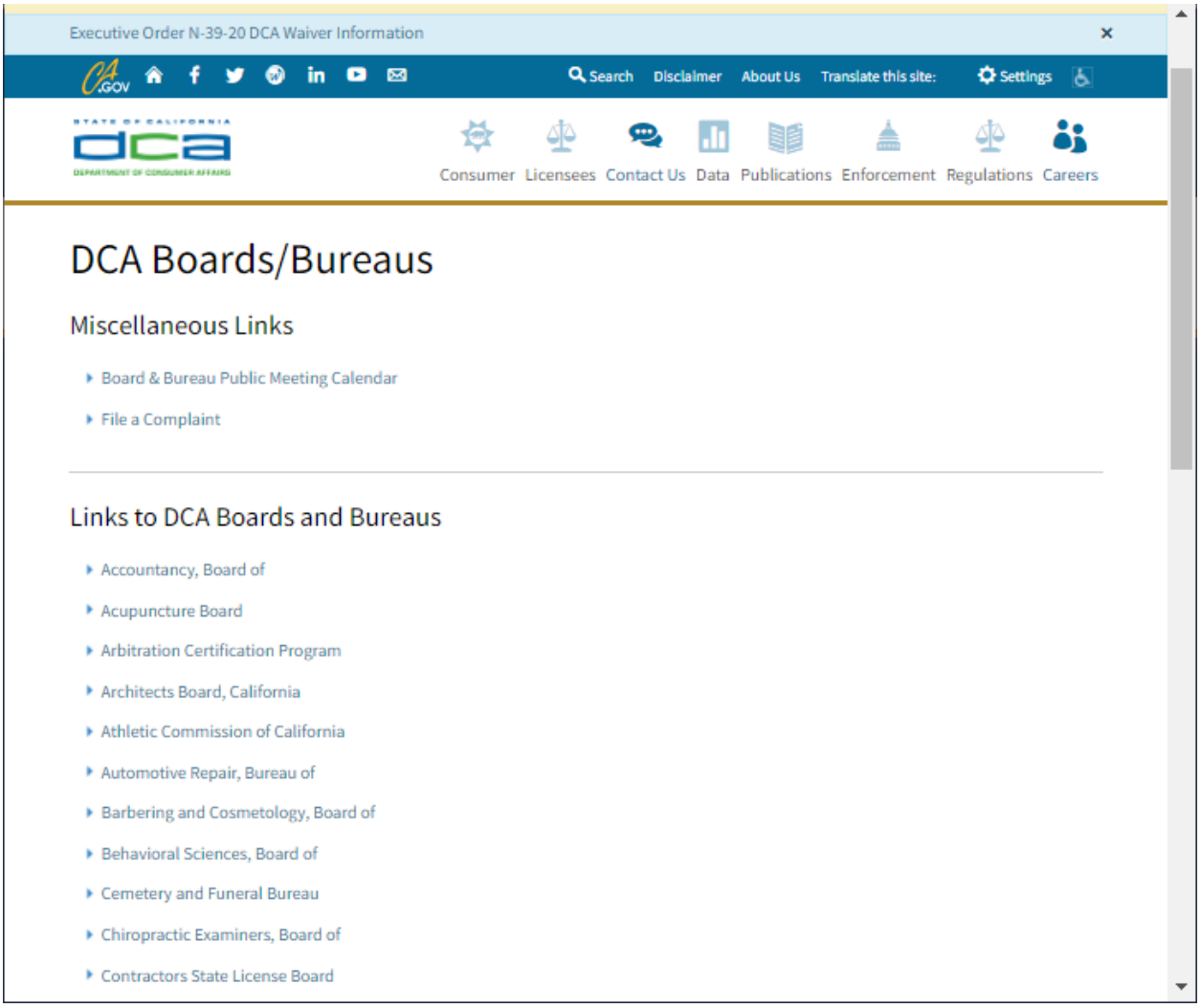


Figure 6. Screenshot illustrating list of occupations/professions/licenses – example 2

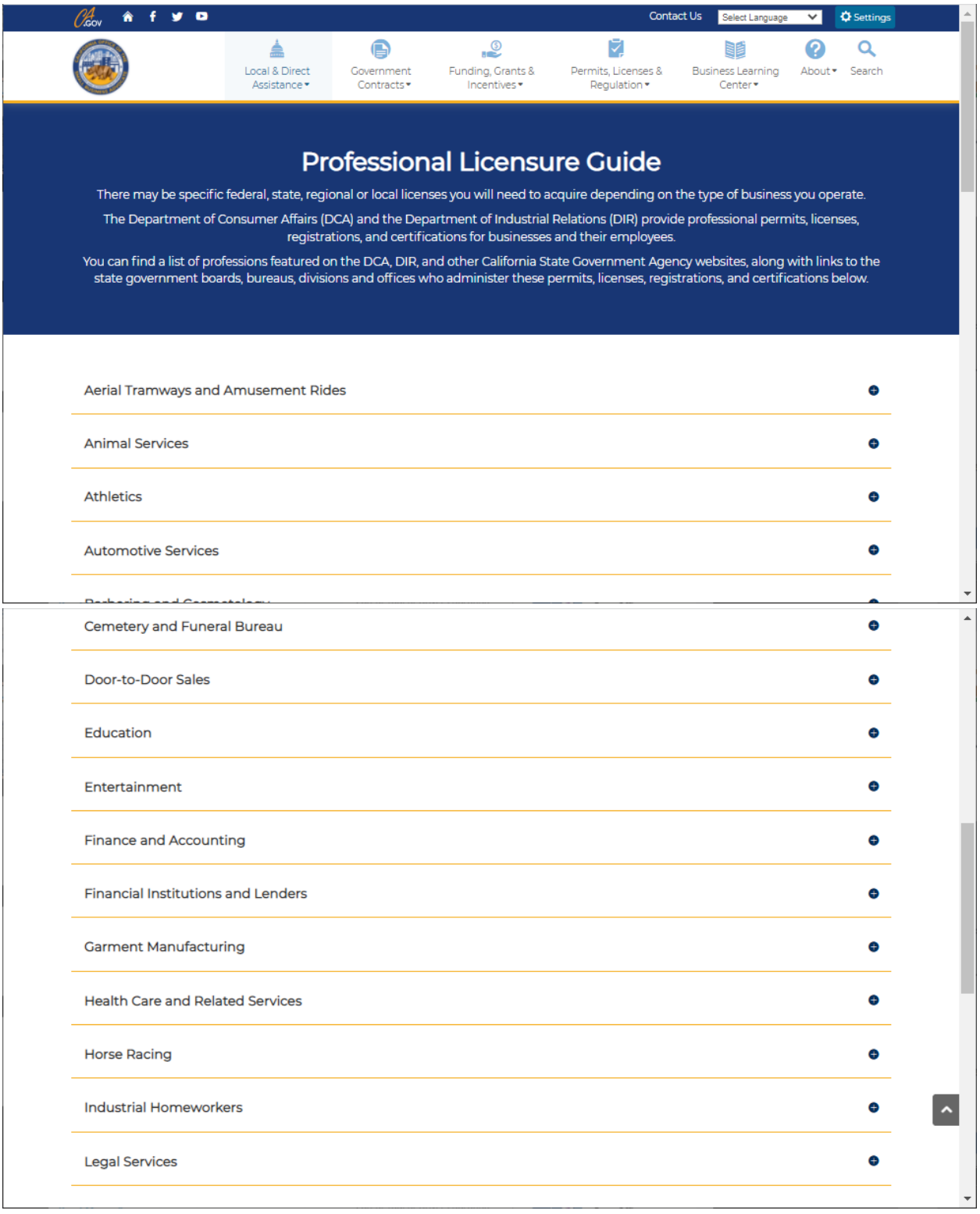
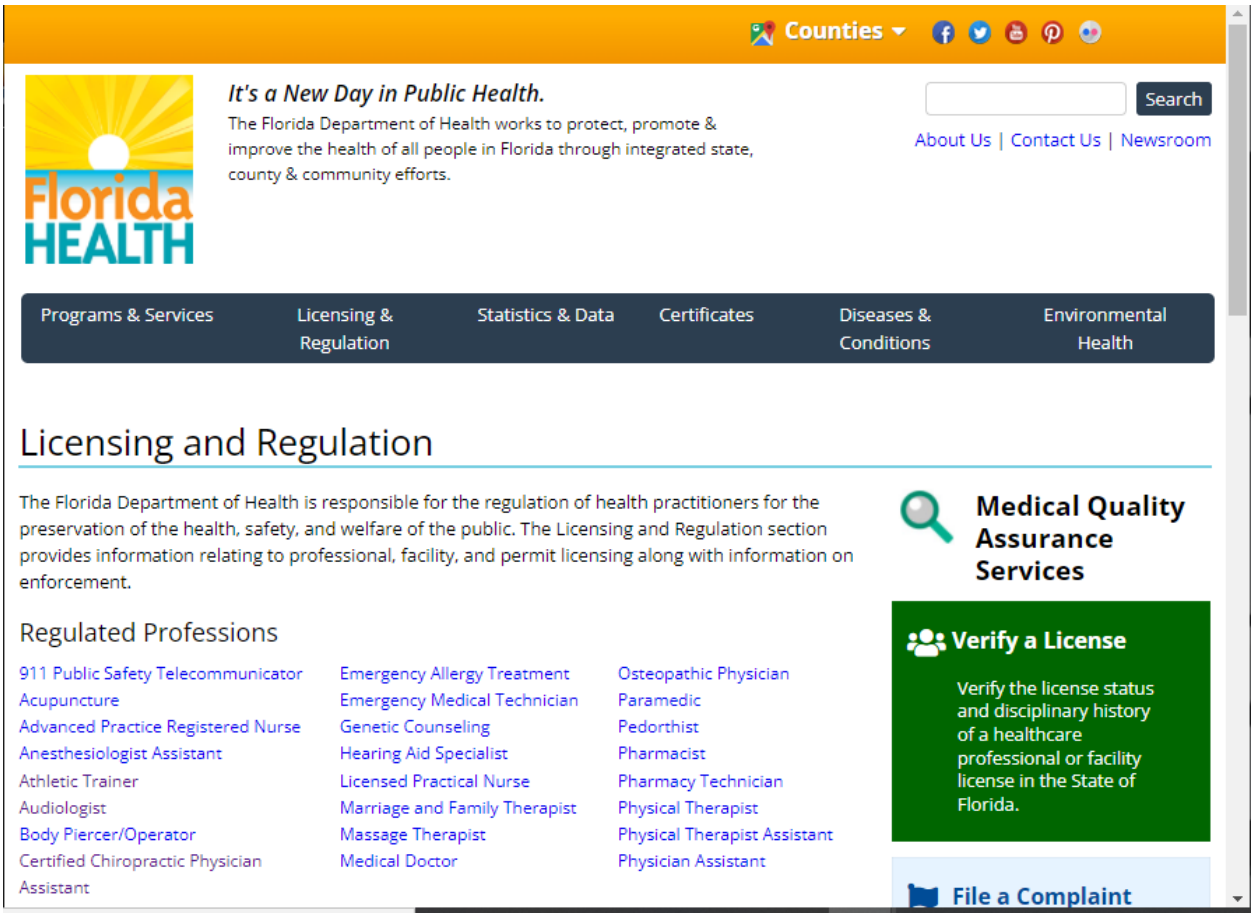


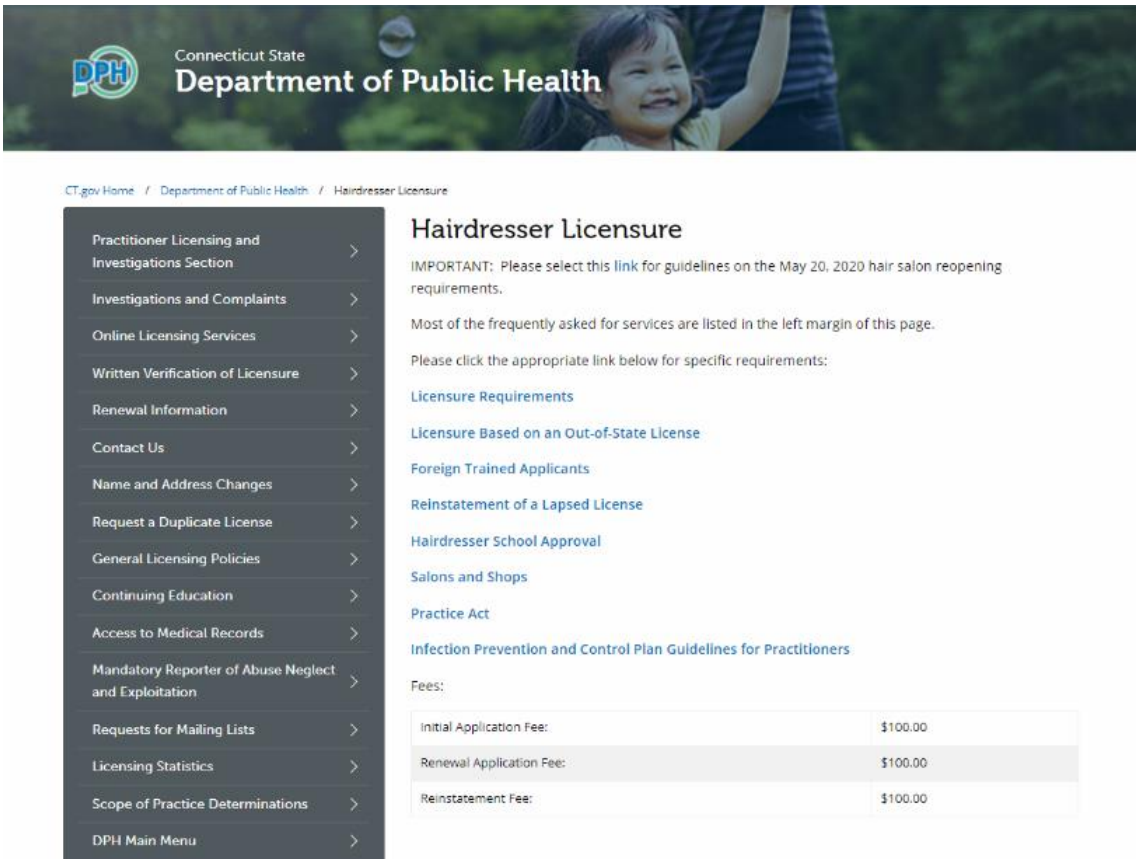
Figure 7. Screenshot illustrating list of occupations/professions/licenses – example 3



4.3 Presentation of information

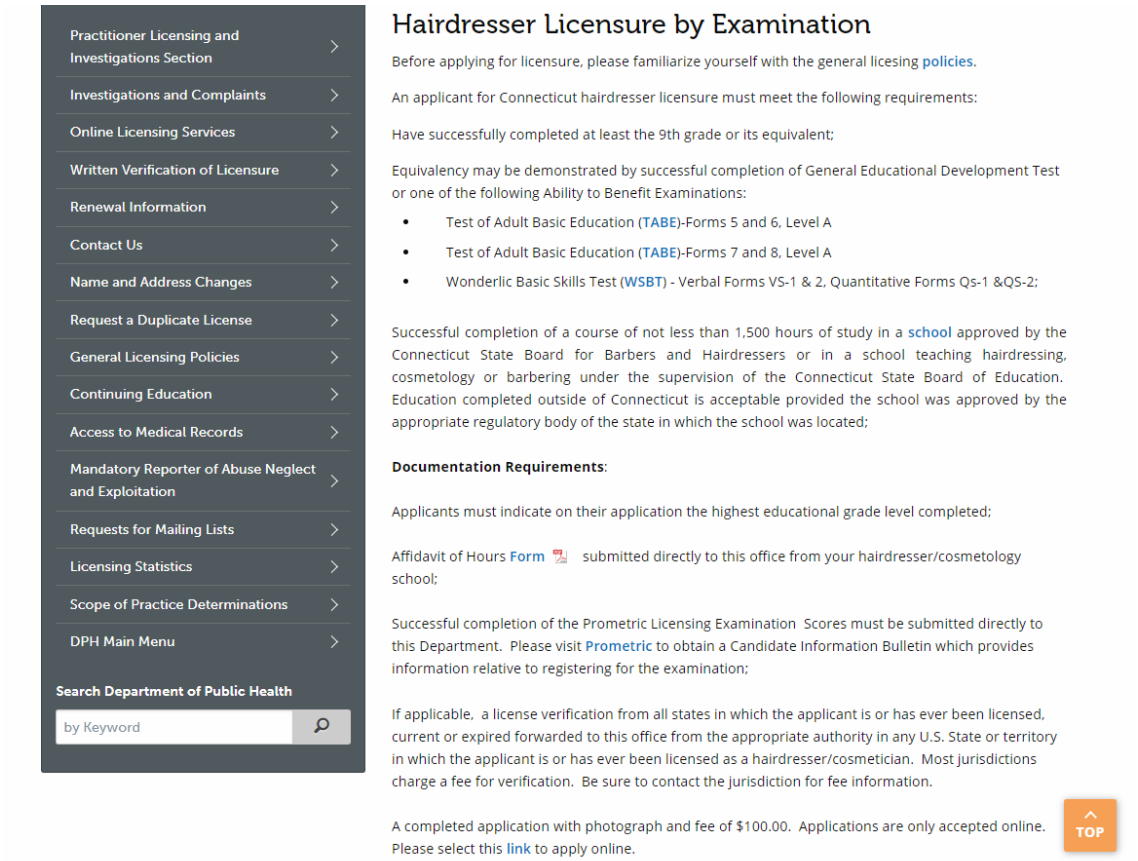
Connecticut's DPH system has a highly organized information setup. A click in the links in blue provides all the required information, and then a link to the online system takes the user where the application can be completed. Figures 8 to 10 present screenshots of the system's organization.

Figure 8. Example of good information organization: DPH – screenshot 1



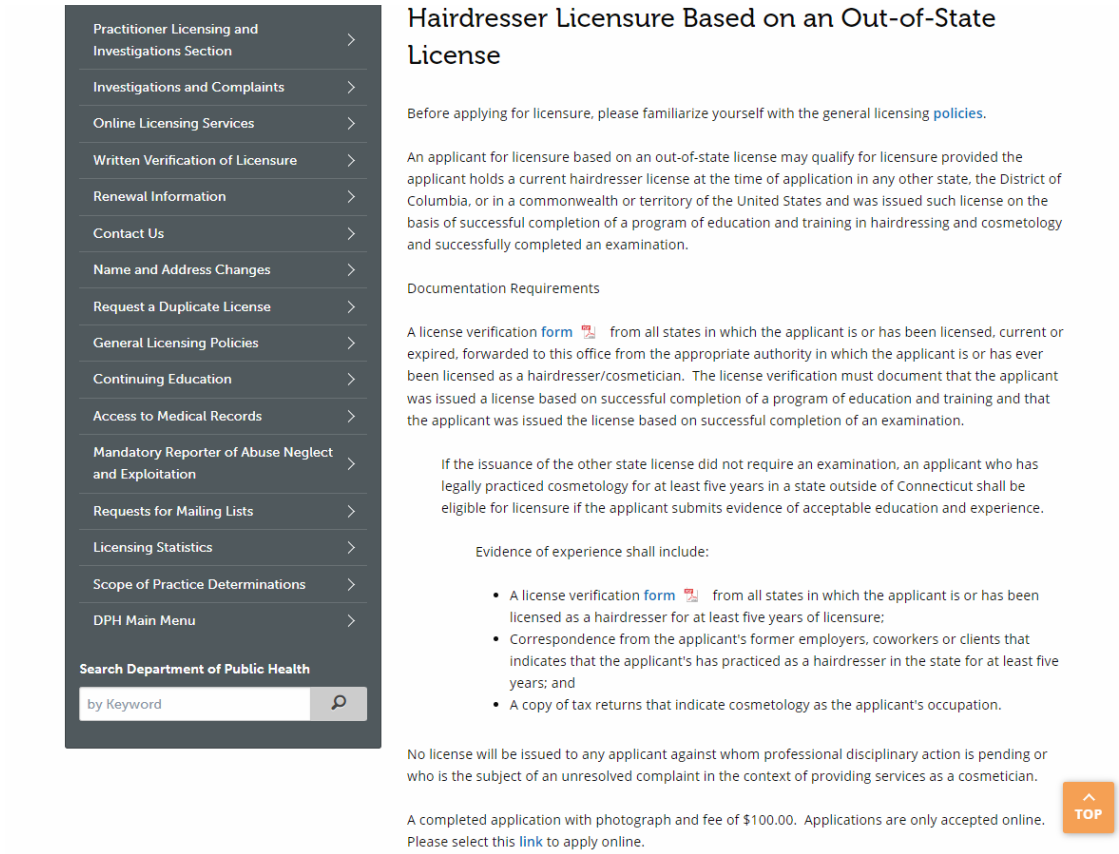
When the applicant selects **Licensure Requirements** the information in Figure 9 is presented, which clearly establishes the process.

Figure 9. Example of good information organization: DPH – screenshot 2



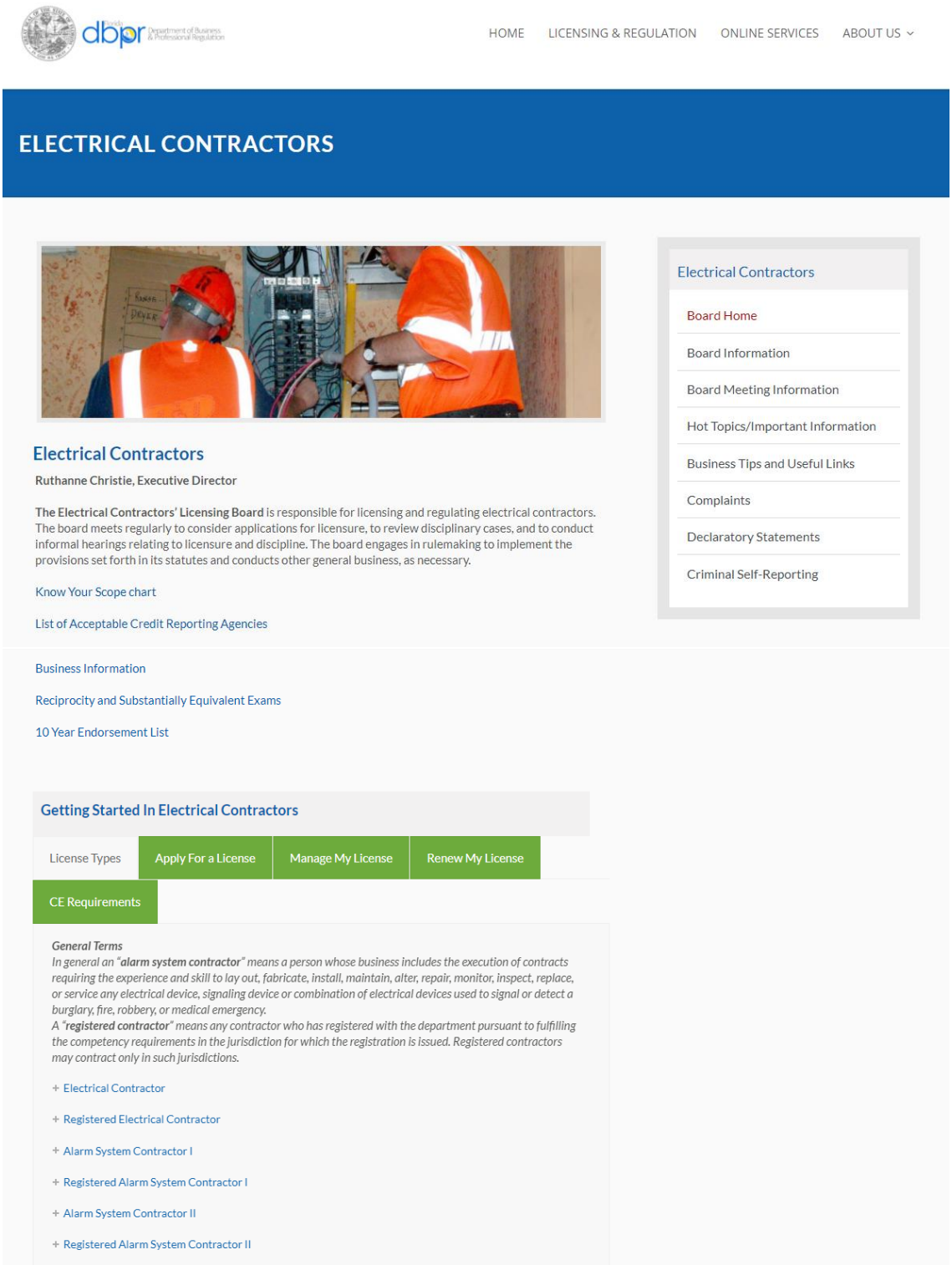
When the applicant selects **Licensure Based on an Out-of-State License** in the previous page, the information in Figure 10 is presented, which clearly establishes the process for such cases.

Figure 10. Example of good information organization: DPH – screenshot 3



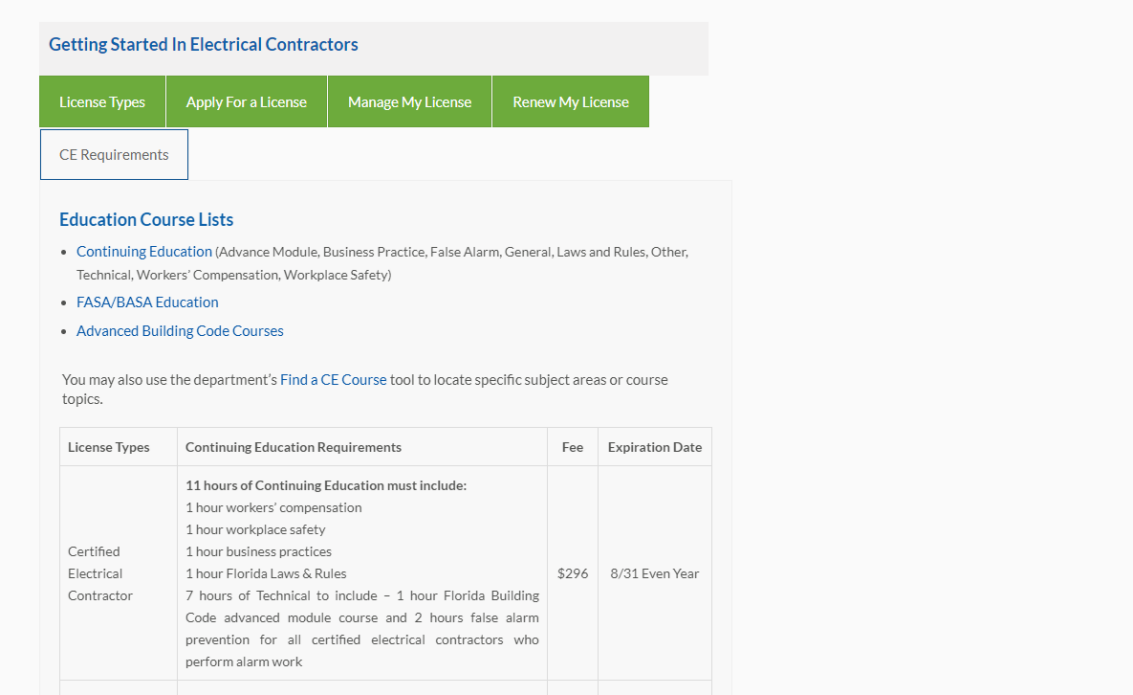
The Florida Department of Business & Professional Regulation system (DBPR) also provides an excellent benchmark in terms of site design for information and function availability. The Getting Started section shown in Figure 11 has the following critical functions: License Types, Application, Management, Renewal and CE (Continuing Education) Requirements.

Figure 11. Example of good information organization: DBPR – screenshot 1



The CE Requirements tab presented in Figure 12 has a list of options to meet the requirements.

Figure 12. Example of good information organization: DBPR – screenshot 2



Getting Started In Electrical Contractors

License Types | Apply For a License | Manage My License | Renew My License

CE Requirements

Education Course Lists

- Continuing Education (Advance Module, Business Practice, False Alarm, General, Laws and Rules, Other, Technical, Workers' Compensation, Workplace Safety)
- FASA/BASA Education
- Advanced Building Code Courses

You may also use the department's Find a CE Course tool to locate specific subject areas or course topics.

License Types	Continuing Education Requirements	Fee	Expiration Date
Certified Electrical Contractor	**11 hours of Continuing Education must include:** 1 hour workers' compensation 1 hour workplace safety 1 hour business practices 1 hour Florida Laws & Rules 7 hours of Technical to include – 1 hour Florida Building Code advanced module course and 2 hours false alarm prevention for all certified electrical contractors who perform alarm work	$296	8/31 Even Year

The state of Massachusetts's Department of Occupational Licensing (DOL) is another excellent example of how information for each license/occupation can be effectively presented. Figures 13 to 15 provide related screenshots.

Figure 13. Example of good information organization: DOL – screenshot 1

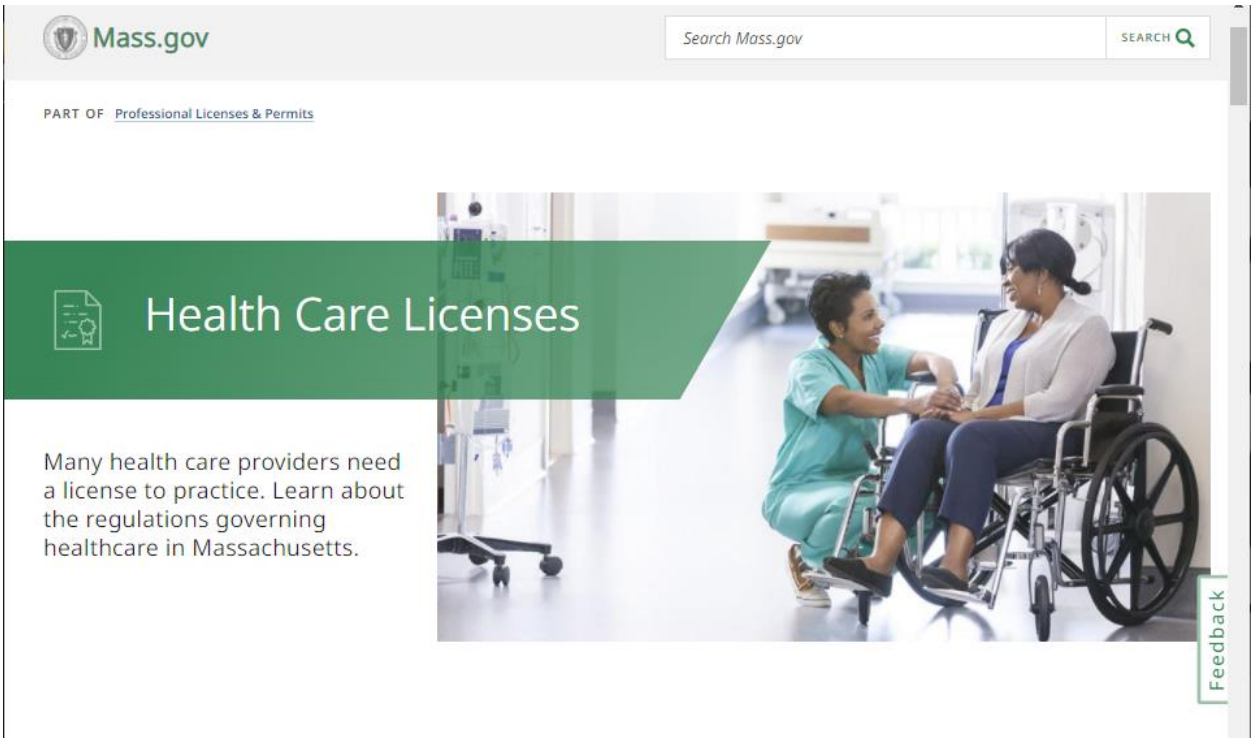


Figure 14. Example of good information organization: DOL – screenshot 2

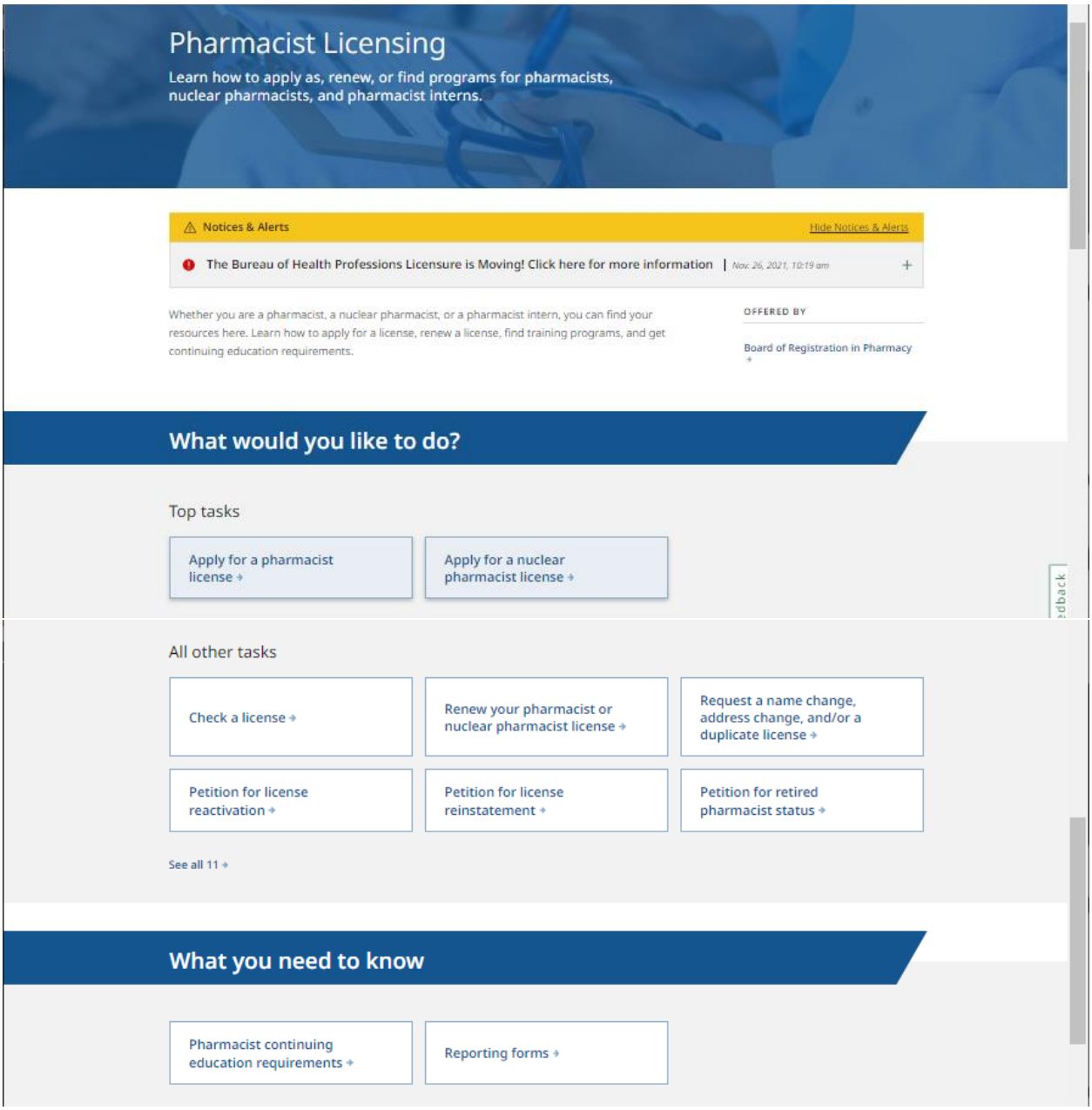
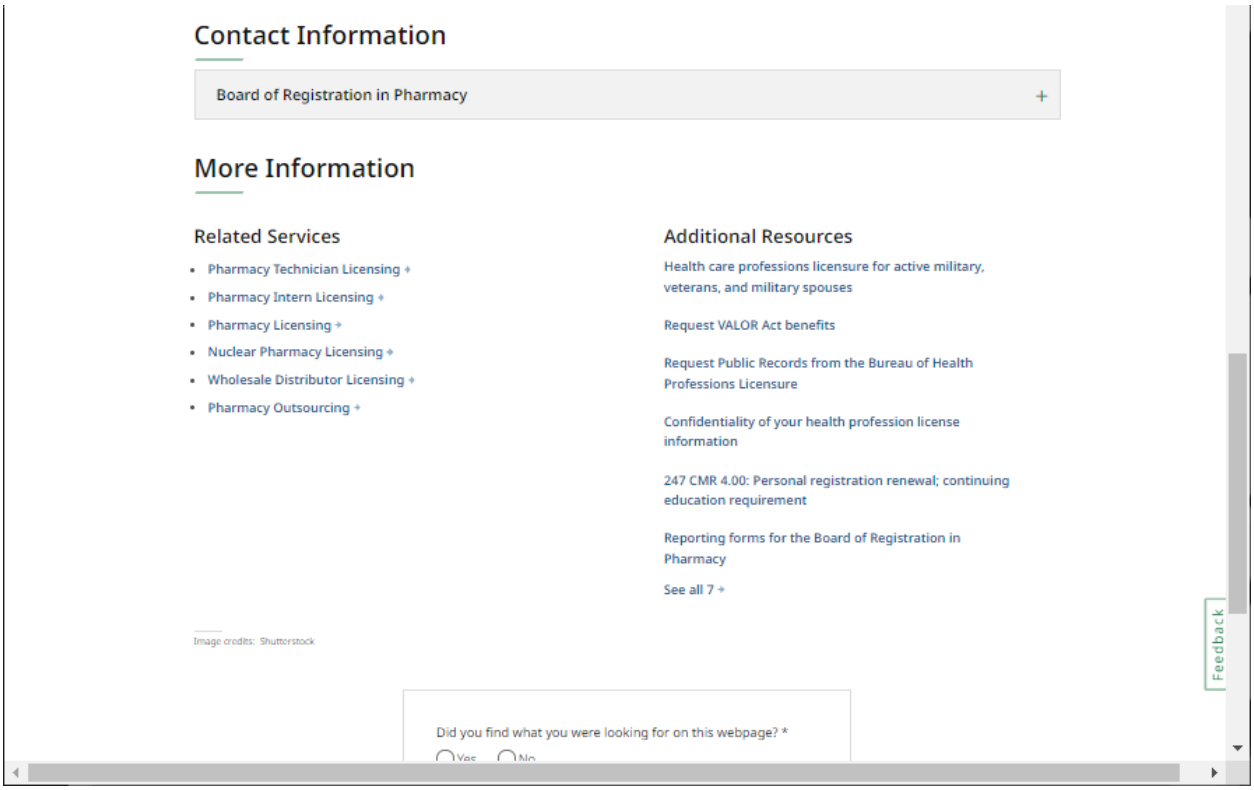


Figure 15. Example of good information organization: DOL – screenshot 3



4.4 Case generated checklist

An interactive and effective approach to provide the applicant the correct information is used in Pennsylvania's PALS system. This system uses an "interview" process to guide the applicant to the correct checklist. The screenshots presented in Figures 16 to 24 show the sequence of questions/answers and how it leads to two different checklists. When the user clicks on application checklist (Figure 16), the system prompts the user to select the board (Figure 17), then the license type (Figure 18), and finally if the required tests have been completed (Figure 19). If the user selects that option and clicks on Next, the checklist presented in Figure 20 is provided to the applicant. Figures 21 to 23 demonstrate an alternative set of responses that result in a different checklist (Figure 24).

Figure 16. Interactive approach to checklist screenshot 1

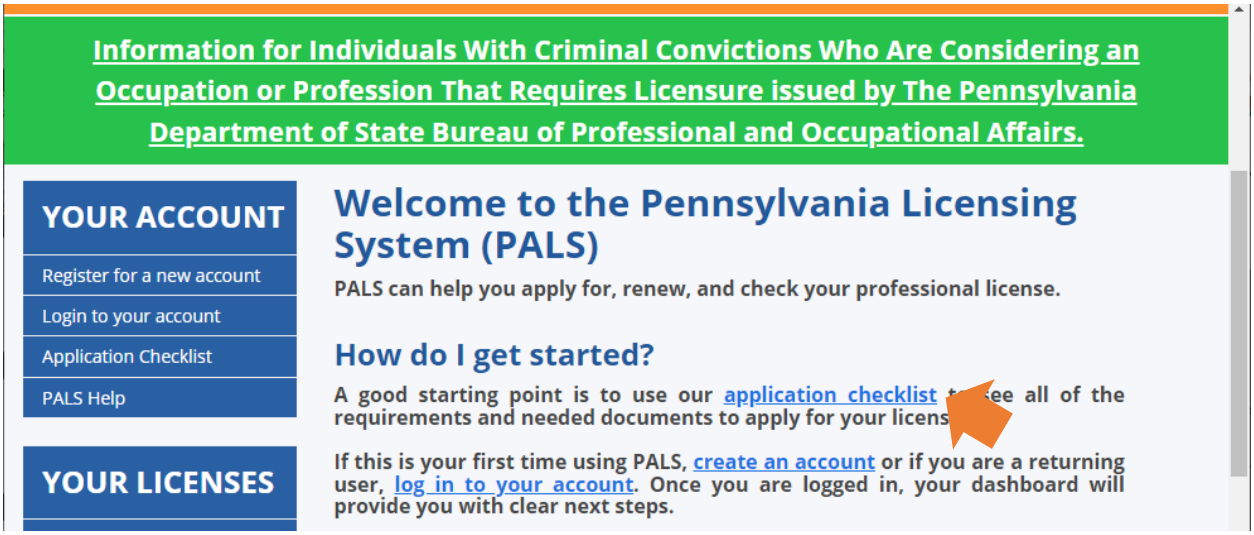


Figure 17. Interactive approach to checklist screenshot 2

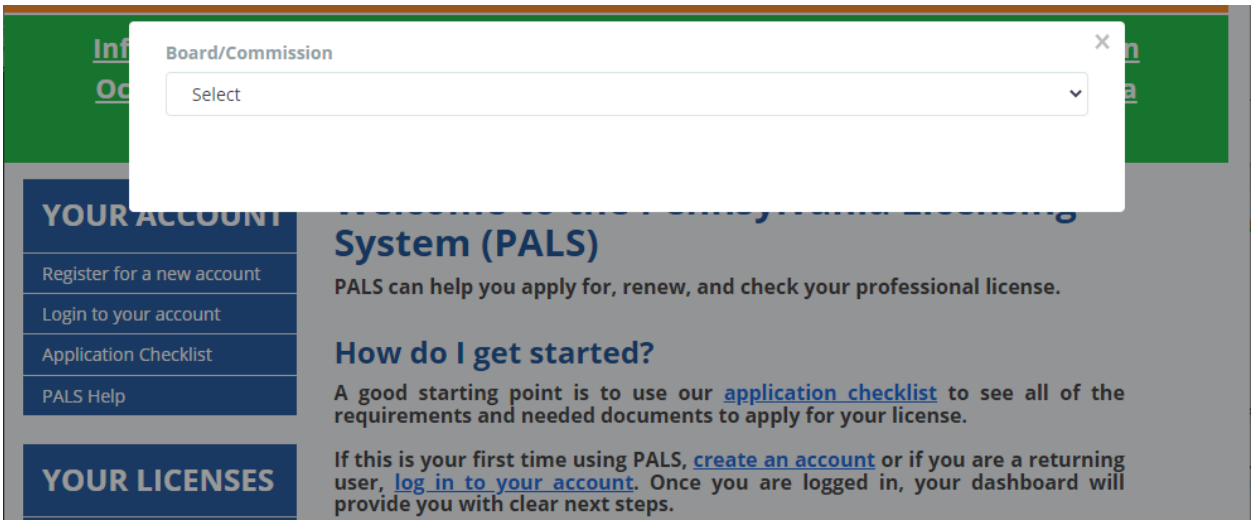


Figure 18. Interactive approach to checklist screenshot 3

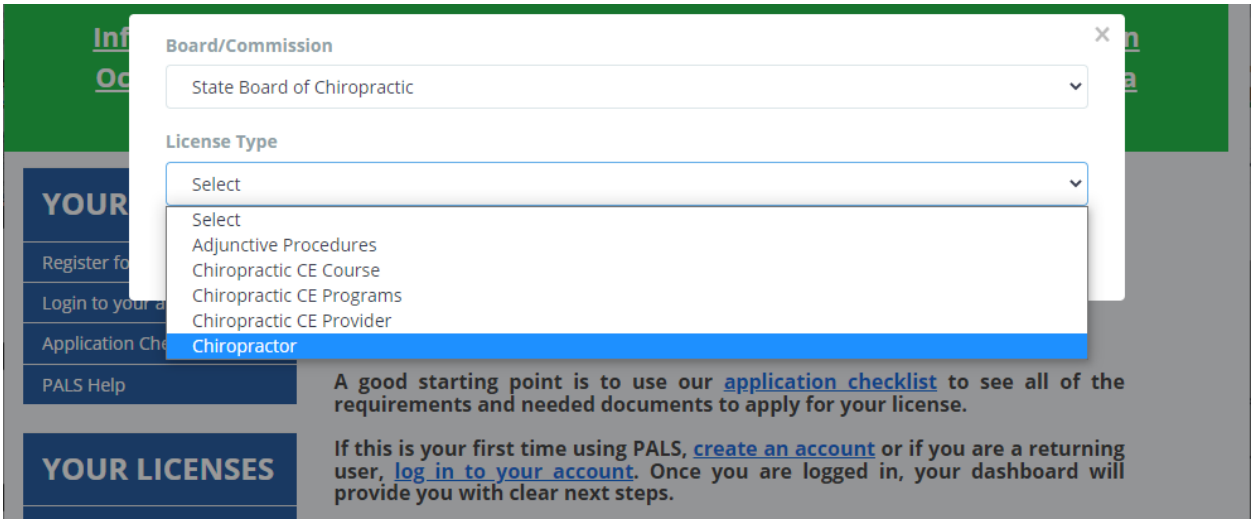


Figure 19. Interactive approach to checklist screenshot 4

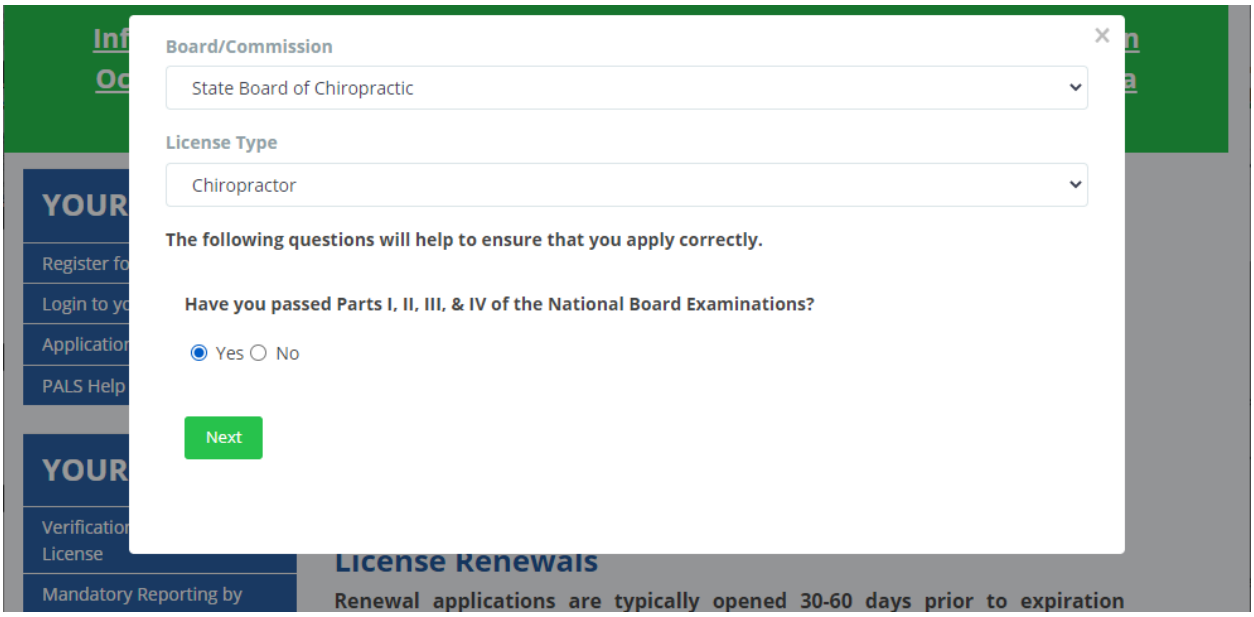


Figure 20. Interactive approach to checklist screenshot 5

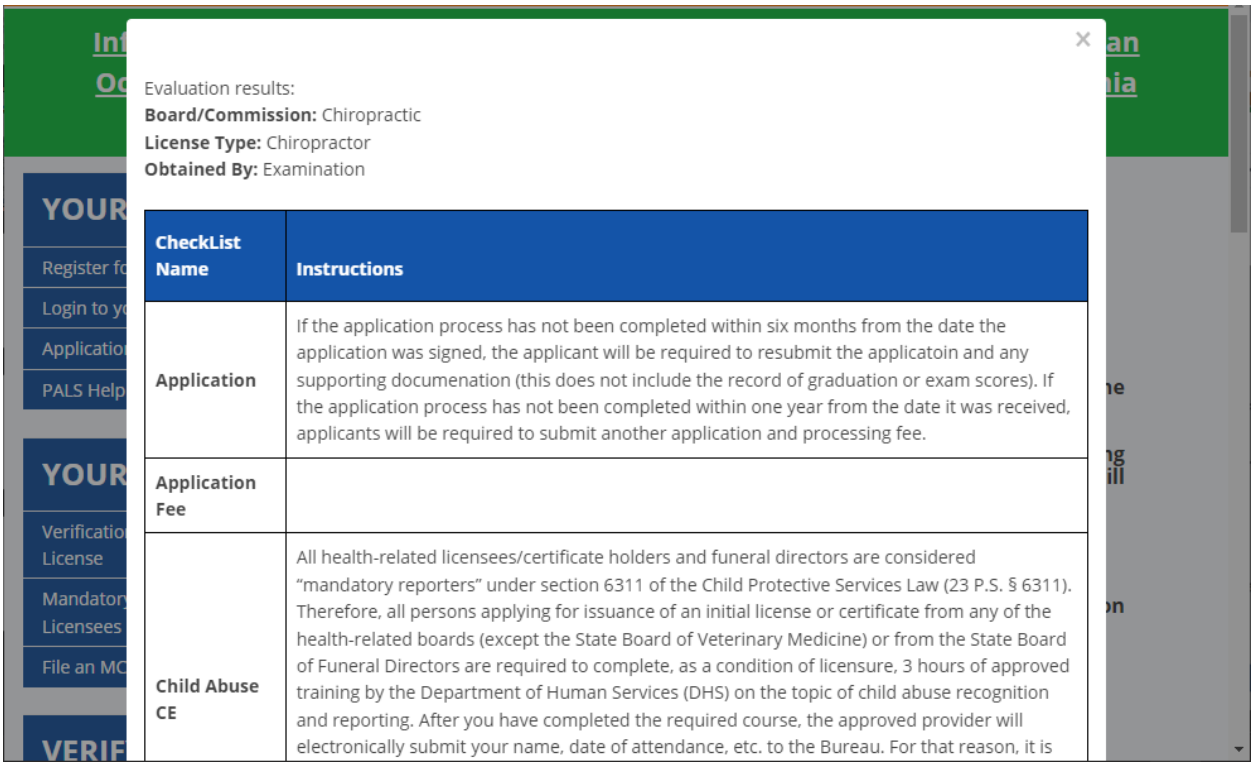


Figure 21. Interactive approach to checklist screenshot 6

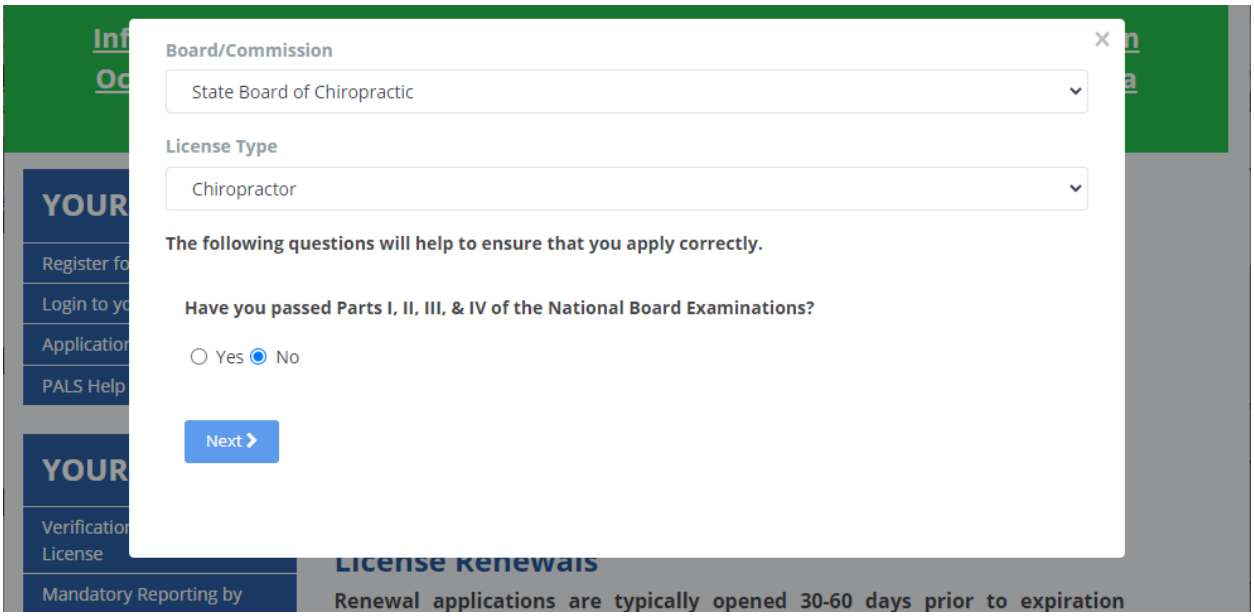


Figure 22. Interactive approach to checklist screenshot 7

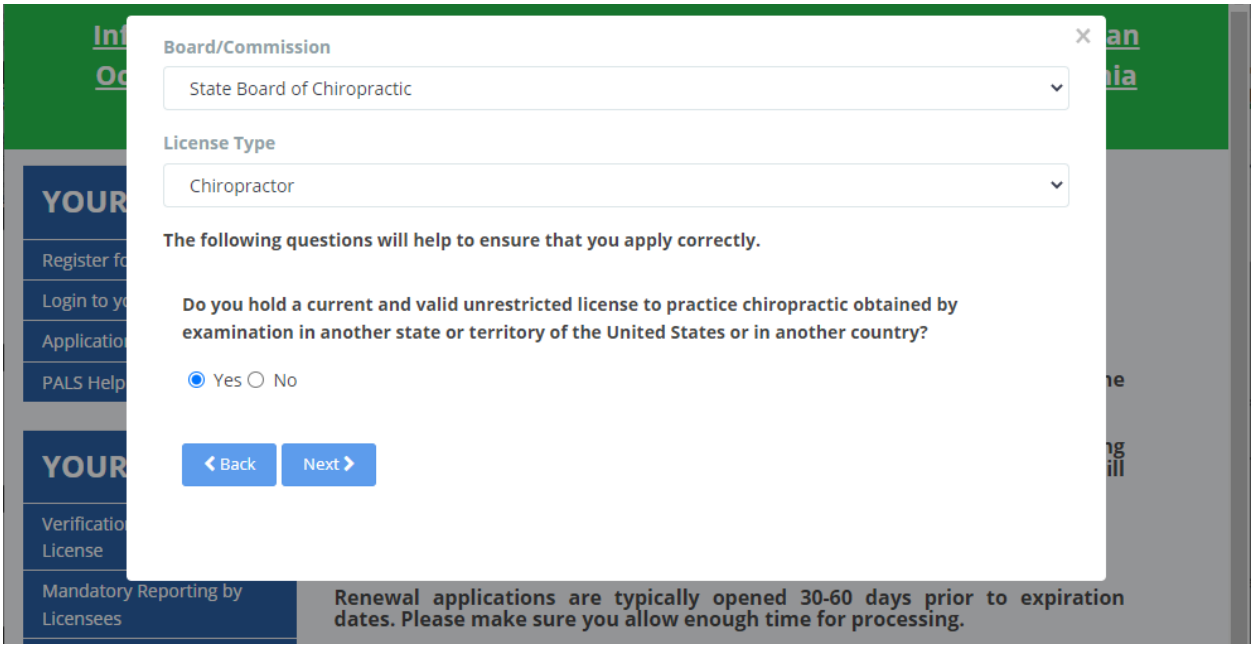


Figure 23. Interactive approach to checklist screenshot 8

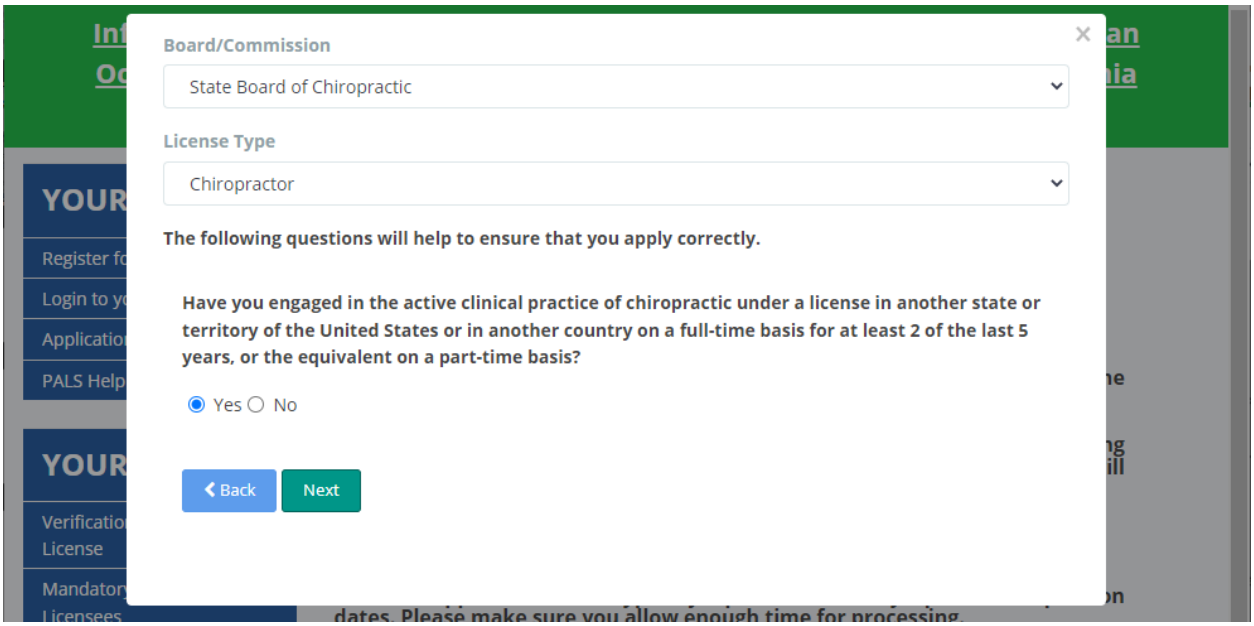
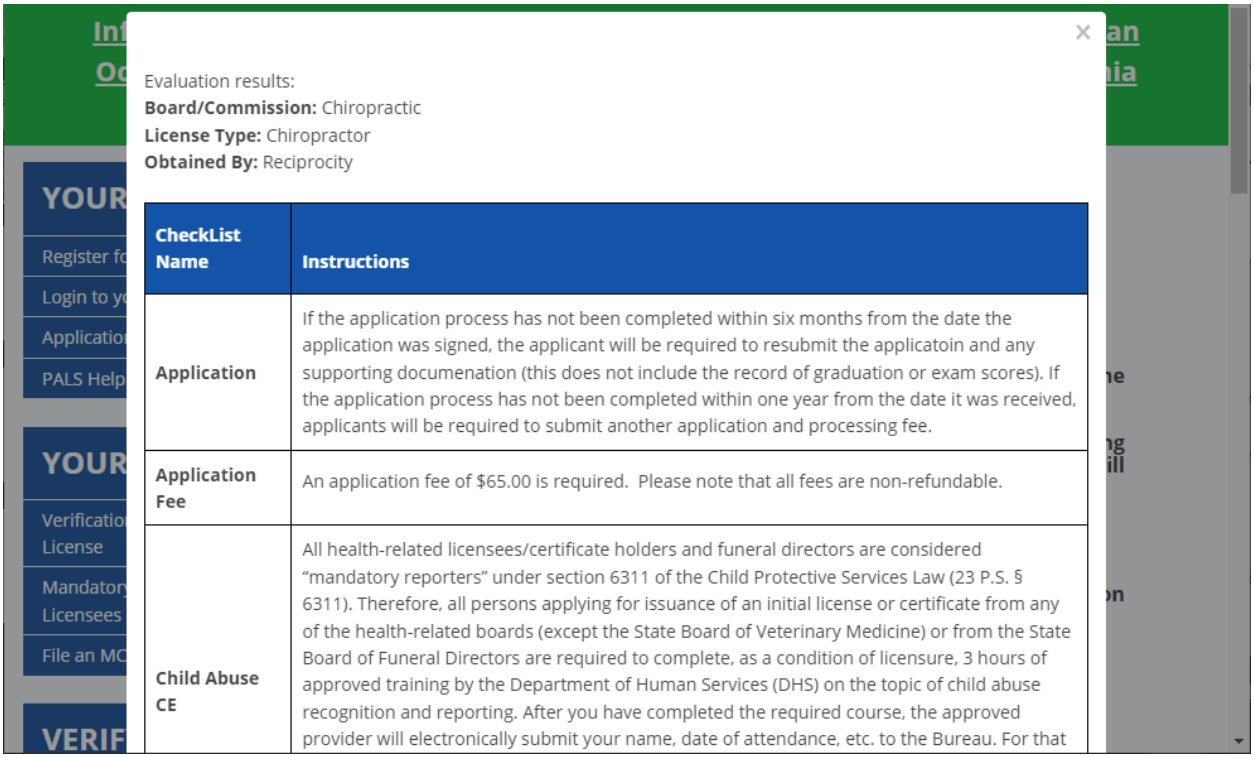


Figure 24. Interactive approach to checklist screenshot 9



4.5 Resources

The LMS from the Texas State Board of Pharmacy (TSBP) provides excellent examples of supporting resources and information. The screenshots presented in Figures 25 to 29 relate to the continuing education requirements supporting resources. When the user clicks on continuing Education (Figure 25), the system presents the relevant information in an easy to understand format (Figure 26), that includes an instructional video (Figure 27) followed by detailed references to the CE requirements (Figure 28). Furthermore, by clicking on the General Renewal Requirements link (Figure 29), the system brings a checklist type document that outlines all the needed information.

Figure 25. Example of supporting resources – screenshot 1

Figure 26. Example of supporting resources – screenshot 2

Figure 27. Example of supporting resources – screenshot 3

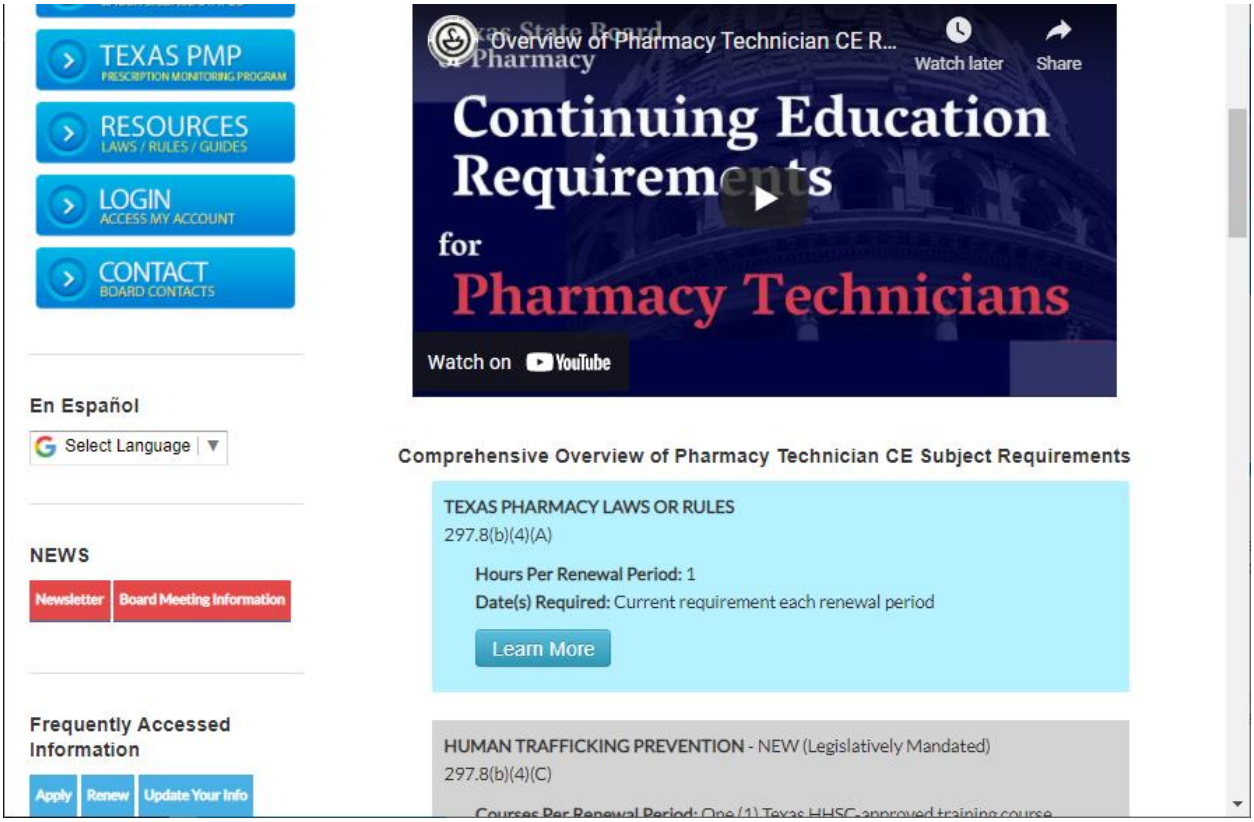


Figure 28. Example of supporting resources – screenshot 4

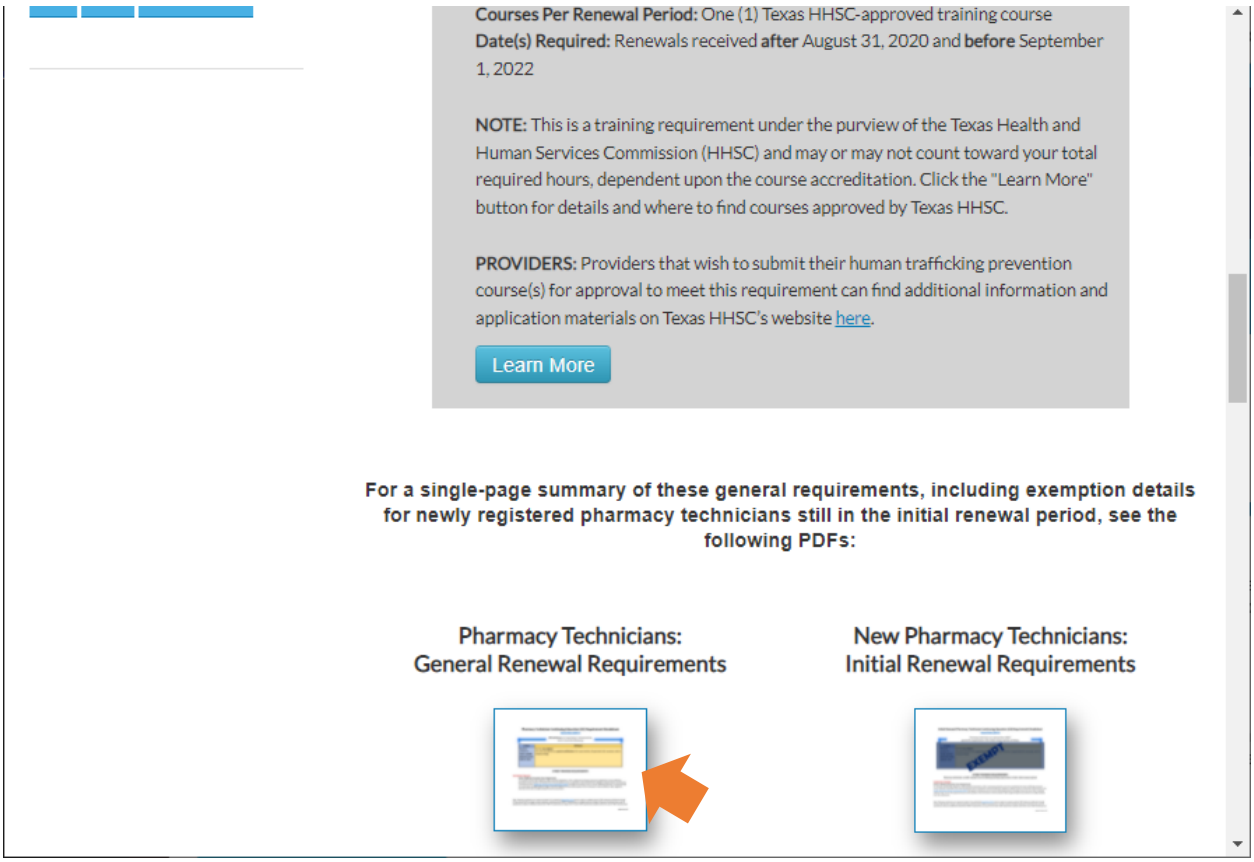
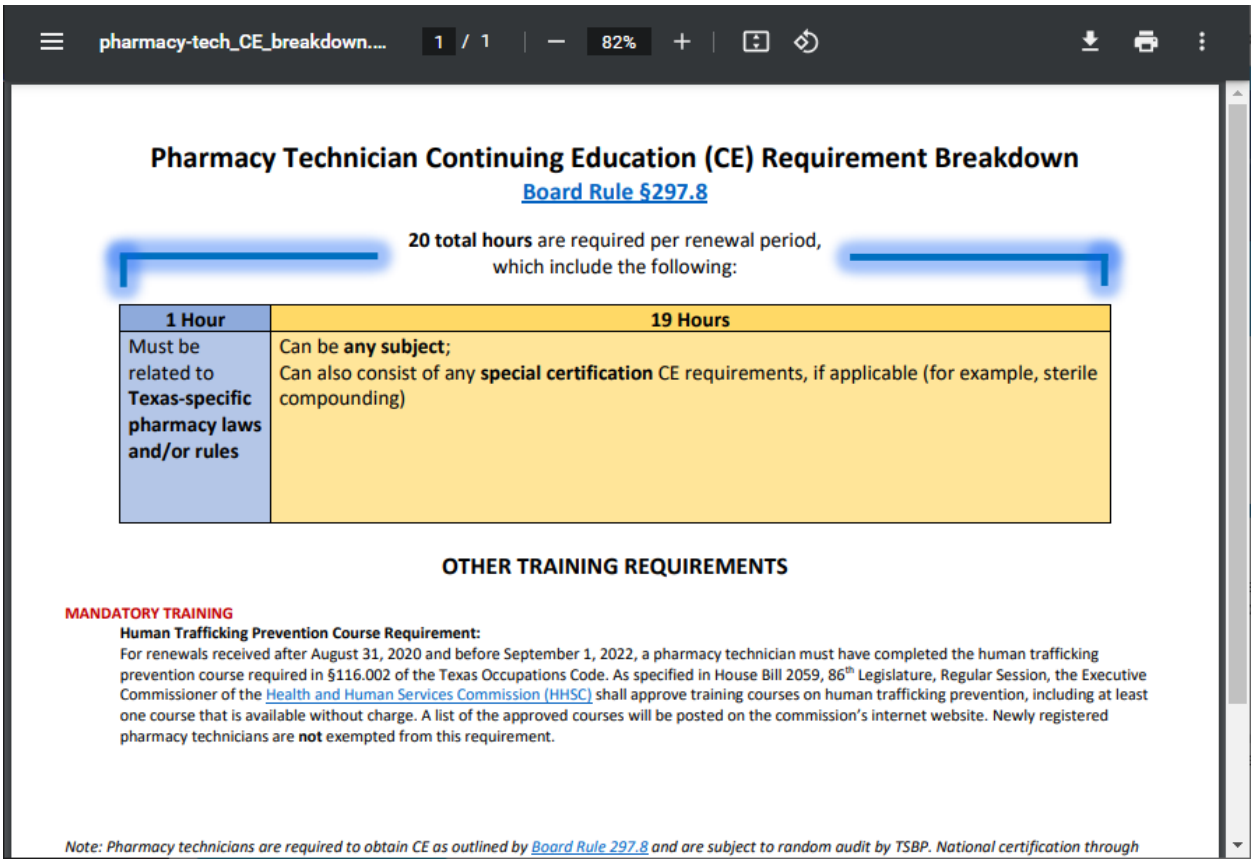


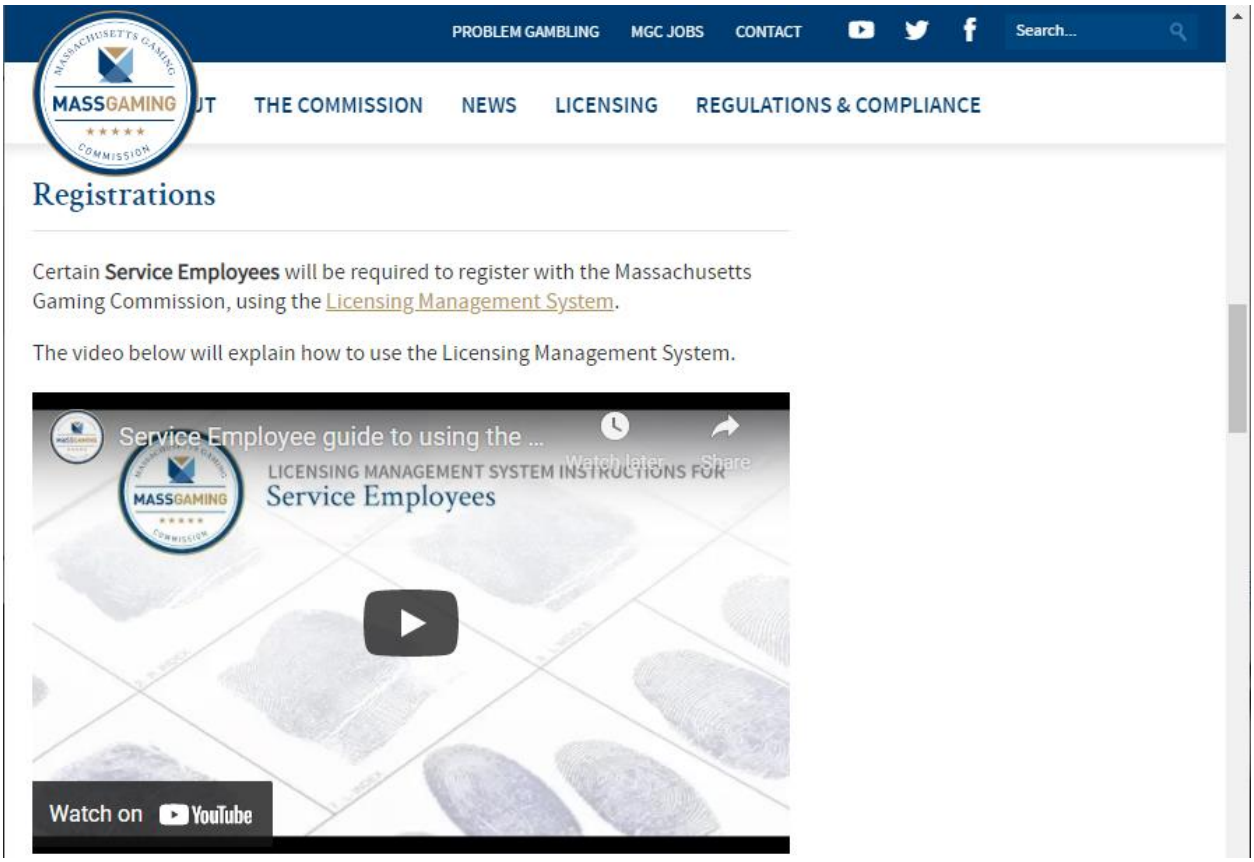
Figure 29. Example of supporting resources – screenshot 5



Another good example of supporting resources is present in the LMS from the Massachusetts gaming commission (MASSGAMING). Figure 30 is a screenshot of the initial page for the licensing part, while the section with an orientation video is in Figure 31.

Figure 30. Example of supporting resources – screenshot 6

Figure 31. Example of supporting resources – screenshot 7



5. Additional recommendations

A review of the LMSs across the sampled states revealed that occupational licensing systems at the state level are typically integrated across multiple "functional agencies", although there are exceptions such as Texas, which has 18 separate systems. Licenses in Puerto Rico are currently managed by 14 different systems, each system belonging to one agency. There are two "main" systems, the first is Oficina de Juntas Examinadoras (OJE) from the Departamento de Estado (DE), which manages over 30 licenses, and the second is the Oficina de Reglamentación y Certificación de los Profesionales de la Salud (ORCPS) from the Departamento de Salud (DS), which manages over 60 licenses. The remaining 47 licenses fall under the control of 12 other agencies with their unique LMSs (see list of all agencies in page 3). It is noted that both the OJE and ORCPS systems have multiple subsystems and license specific versions, thus far from a true LMS, but considered as one for the purposes of this discussion.

From an organizational perspective, we recommend a detailed study into the integration of the technology systems as to have two LMSs, one for the health professions under the ORCPS and an umbrella system for all other occupations/professions. The analysis would consider the development of an integrated **professional licensing portal (PLP)**, similar to what several of the sampled states have in place. This PLP would be a single website/platform/system frontend for all licenses currently under the OJE and the remaining agencies. The portal would replace the separate agency specific frontend systems and manage the online/application interactions with the users. The information from the portal would seamlessly flow to the agencies who would continue to have all decision making control based on current regulations and their internal processes (the backend). Determination of what agency would manage the PLP would be part of this detailed study. Figure 32 presents to the left the current "non-integrated" structure to occupational licensing in Puerto Rico, and to the right the proposed structure with two "major" LMSs. Figure 33 illustrates the concept of the PLP, which would serve as the connection point between the users and all the agencies that license occupations in Puerto Rico (excluding DS). Finally, the integration of the DS licenses into the PLP could be considered as part of this study in order to have a single system for all occupational licensing, however, no state of those sampled had a single LMS, probably due to diseconomies of scale, and therefore not a primary recommendation.

The research and analysis performed in this study did not result in "finding" a single best LMS that can be prescribed as the system that ORCPS and the proposed PLP should emulate. However, as mentioned earlier, there are several systems in place in the sampled states that demonstrate benchmark features and functions. Future studies should also research internal operational practices of the proposed benchmark systems as to determine operational objectives, measures of performance, and goals for the ORCPS and the PLP. The final recommendation is that both the ORCPS system and the proposed PLP frontend system need to include all or most of the functionalities described in section 2.5 and illustrated through several examples in section 3.

Figure 32. Current overall structure (left) to proposed structure (right)

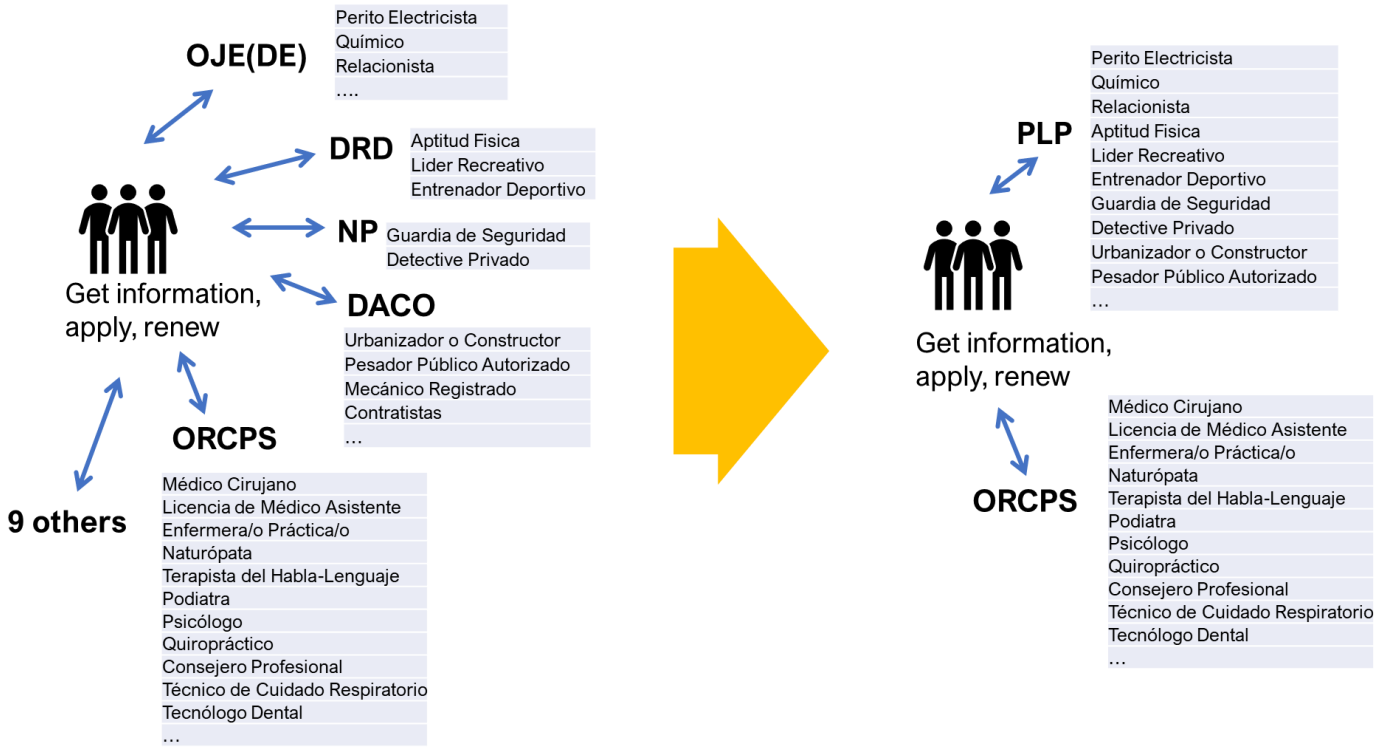
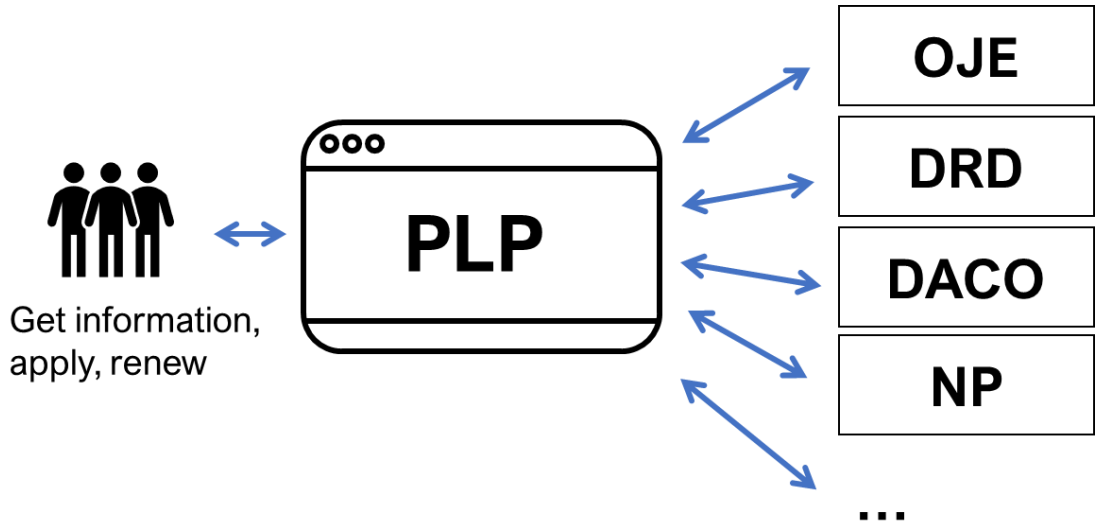



Figure 33. Relationship between users, PLP, and government agencies that license occupations